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WILDLIFE TRADE In the Russian Federation

Moscow, 2020

Wildlife Trade in the Russian Federation

Compiled and edited by Vladimir G. Krever and Tatiana O. Ivannikova

The review was prepared in accordance with the obligations of the Russian Federation to implement the Convention on Biological Diversity (Strategic Plan for Biodiversity 2011–2020) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The review provides an analysis of the current legal framework for wildlife trade, the scope and features of trade in certain species, contemporary market structure and offers recommendations on how to address the most pressing issues in this area.

The publication is addressed to specialists of government agencies in charge of biodiversity conservation and oversight of domestic and international wildlife trade as well as to the general public interested in wildlife conservation in Russia.

Wildlife trade in the Russian Federation. Editors: V.G. Krever, T.O. Ivannikova.

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GLOSSARY

Abbreviations

CITES – Convention on International Trade in Endangered Species of Wild Fauna and Flora

EACU - Eurasian Customs Union

ECOSOC - Economic and Social Council

EU-TWIX - European Union Trade in Wildlife Information Exchange

INTERPOL – International Criminal Police Organization

IUCN - International Union for Conservation of Nature

NGO - non-governmental organization

TAC – Total Allowable Catch

TRAFFIC - the wildlife trade monitoring network

UNODC - United Nations Office on Drugs and Crime

WCMC (UNEP-WCMC) – the World Conservation Monitoring Centre, an executive agency of UN Environment, maintains the database of trade in CITES specimens

WWF - World Wildlife Fund

Definitions

CITES Trade Database is database managed by the UNEP World Conservation Monitoring Centre on behalf of the CITES Secretariat, holds over 13 million records of trade in wildlife and over 34,000 scientific names of taxa listed in the CITES Appendices.

Corruption risk factors are the provisions of regulatory legal acts (draft regulatory legal acts) that establish for the law enforcer unreasonably wide limits of discretion or the possibility of unreasonably applying exceptions to the general rules, as well as provisions containing vague, difficult to fulfill and (or) burdensome requirements for citizens and organizations and thereby creating conditions for corruption.

Dark Net is an umbrella term describing the portions of the Internet purposefully not open to public view or hidden networks whose architecture is superimposed on that of the Internet.

Eurasian Customs Union is a customs union which consists of all the Member states of the Eurasian Economic Union.

Eurasian Economic Commission is the executive body of the Eurasian Economic Union responsible for implementing decisions, upholding the Eurasian Economic Union treaties and managing the day-to-day business of the Eurasian Economic Union.

High value species are species of animals listed in the Red Data Book of the Russian Federation or species protected by international agreements (native to Russia). The list of high value species includes argali, Amur tiger, polar bear, leopard, European bison, saiga antelope, snow leopard, saker falcon, golden eagle, gyrfalcon, peregrine falcon.

Indigenous small-numbered peoples of the North, Siberia and the Far East (indigenous peoples of the North, Siberia and the Far East) is a Russian census classification of indigenous peoples, assigned to groups with fewer than 50,000 members, living in the Russian Far North, Siberia or Russian Far East.

Red Data Book of the Russian Federation is a state document established for documenting rare and endangered species, that exist within the territory of the Russian Federation and its continental shelf and marine economic zone. The rules of the removal Red Data Book-listed species from the wild do not provide for their removal from the wild for the trade purposes.

EXECUTIVE SUMMARY

The Russian Federation is an active participant in the international wildlife trade. The globally growing demand for wildlife used as luxury items, traditional medicine, exotic pets, etc., stimulates legal and illegal wildlife trade. According to the CITES data, over 3,200 batches of CITES specimens were imported into Russia in 2012–2018 (involving about 130,000 live animals and 54,000 parts and derivatives) and over 1,800 batches – exported from Russia, over 900 of them sourced from the wild (involving about 2,500 live animals and over 22,700 body parts and derivatives).

According to the General Directorate for Combatting Smuggling of the Federal Customs Service of Russia, smuggling of wildlife in Russia as one of the forms of trafficking is comparable in scale to such global criminal activities as trafficking in cultural property, precious stones and metals and is surpassed only by the firearms smuggling.



The facts show that such diverse smuggling items can be transported in a single consignment as evidenced by a 2018 smuggling interdiction case involving Chinese and Russian nationals in the Russian Far East who trafficked a load of derivatives of black and brown bear, Amur tiger, amber, firearms and munitions with the total value of CITES specimens over 50 million rubles².

¹ Data doesn't include drugs seizures.

² About USD 780,000.

Analyzing the current trends of wildlife trade in Russia becomes particularly important for the following reasons:

- lifting of customs borders between Russia and other member-states of the Eurasian Customs Union that loosened oversight over the transportation of CITES specimens between the union members;
- continued attempts to smuggle wildlife products from Russia to China through the border areas in the Russian Far East;
- rapid development of online wildlife trade;
- legislative changes that introduced criminal liability for actions related to illicit trade in certain categories of wildlife in Russia.

The study comprises five main parts. Part I deals with the legal framework that regulates trade in wildlife, gaps and corruption risk factors associated with the legislation currently in force, shortcomings in the personnel and organizational systems and in interagency coordination of transborder transportation of CITES specimens and trade in wildlife in the Russian Federation. Part II of the study deals with the assessment of the current wildlife trade in Russia. Part III covers wildlife trade on the Internet, including bulletin boards, online stores and social media. Part IV deals with the case studies of two model regions reflect the current structure of wildlife trade in the Russian Far East and the Altay-Sayan Ecoregion. Part V provides recommendations that should be taken into account to prevent illegal and unsustainable wildlife trade.

Wildlife Trade Regulations

In the recent years, Russia has undertaken certain steps to counter illegal wildlife trade. This includes the introduction of criminal liability for illegal trade in high value species and illegal shipment of certain CITES specimens across the borders of the Eurasian Customs Union. Specific lists of species of high commercial value have been established for these purposes (including saker falcon, peregrine falcon, gyrfalcon, saiga antelope, Amur tiger, brown bear, Asiatic black bear, musk deer). These steps allowed to overcome the lack-of-crime challenge in initiating criminal investigations into illegal wildlife trade, thus helping to reduce motivations to engage in criminal business.

At the same time, regulation of wildlife trade encounters various problems that call for special attention and practical solutions:

- patchiness of the current Russian legislation governing individual aspects of wildlife trade and absence of a comprehensive regulation of trade in wildlife create obstacles to ensuring the legality of wildlife trade;
- corruption risk factors in the regulations stimulate latent crimes against wildlife;
- absence of procedures for tagging and identification of animals, their parts and derivatives entering trade to confirm their origin;
- the existing Russian legislation is not fully adapted to addressing specific needs of the CITES implementation. There are virtually no controls over the trade in CITES specimens inside the Russian borders, which enables the development of trade in illegally imported specimens;
- legislative shortfalls that allow smugglers to avoid serious punishment (illegal movement of CITES specimens across the Eurasian Customs Union border is criminally punishable only for certain species and only for batches worth over 1 million rubles³ in most cases);
- lack of regular information exchange between the CITES Management Authority, customs and other government agencies for the effective CITES implementation and prevention of illegal trade in Russian Fedearation;
- lack of controls over the shipment of CITES specimens within the Eurasian Customs Union, of which Russia is a member;
- legislative shortfalls in the field of handling seized and confiscated wild animals in the Russian Federation.

Wildlife market analysis

Trade in certain species warrants special attention due to its real or potential threat to some of their populations and groups.

Amphibians and reptiles

Even though the interest in exotic pets has been recently growing in Russia, the volume of domestic market of amphibians and reptiles is substantially smaller than that in the United States, Europe and Asia.

³ About USD 15,620.

Trade in the following species requires special attention:

- Greek tortoise and Central Asian tortoise (illegally traded as pet animals);
- Amur softshell turtle (its meat is used in Chinese restaurants); proper estimation of its actual removals is impossible without additional studies;
- Dybowski's frog and other amphibian species (derivatives are used in traditional medicine).

Birds of prey

Illegal trade critically affects saker falcons and gyrfalcons that are used for falconry in the Arab countries. The current demand for falcons is ten times greater than the potential of breeding populations.

The current legal market of birds of prey supplied by breeding centers is relatively small and quite stable and, as such, cannot be viewed as a serious alternative to the illegal trapping of birds.

Terrestrial mammals

Commercial trade threatens the existence of saiga antelope and potentially threatens musk deer, Taimyr wild reindeer and sable.

The number of hunted Amur tigers has decreased but their illegal trade calls for special attention and prevention measures.

Marine mammals

Removal from the wild for trade poses a potential threat to transient killer whales and to the Sakhalin-Amur herd of beluga whales.

Marine mammals are being removed from the wild for trade purposes without due regard of their biological features (population structure, range borders of specific groups) and in the absence of a comprehensive assessment of the size and dynamics of their populations. Lack of data on the status of marine mammal populations casts doubt over any non-detriment findings concerning their international trade.

Wildlife trade on the Internet

The monitoring identified over 7,000 unique sales ads offering animals protected by the CITES. Notwithstanding the criminal liability invoked for trading in high value species that are resident in Russia, 30 open ads for such sales have been spotted during the study.

Publicly accessible Internet layer is the primary space for buying and selling wild animals, while the Dark Net is practically unused by wildlife traders.

Current structure of wildlife trade in the model regions. Key trends in wildlife trade for the last 5–10 years

The case studies of two model regions reflect the current structure of wildlife trade in the Russian Far East and the Altay-Sayan Ecoregion.

Altay-Sayan Ecoregion (2005–2016)

- secure distribution channels and supplier networks have been established;
- supply of wildlife products previously exported to China and Southeast Asia has shifted to the domestic market (musk deer, beaver and red deer products are manufactured on an industrial scale);
- domestic demand for bear fat and bile has emerged in Russia generally and in the ecoregion, especially in big cities;
- foreign actors have reduced their activities, and wildlife exports are primarily carried out by Russian rather than foreign companies;
- retail chains have institutionalized and expanded in the regions, retail trade in souvenirs made of wildlife products is growing;
- the number of online stores has doubled.

While parts and derivatives of common game (fangs and claws of wolves and bears, pelts of wolves and foxes) are prevalent in the region's wildlife market, trading in some non-game species and species listed in the Red Data Books also takes place (mainly claws of birds of prey and owls). Almost one-third of all traded species are included in the CITES Appendices. Brown bear is the top seller ahead of all other species of the Altay-Sayan Ecoregion in this respect.

Russian Far East (2012-2018)

- wildlife trade is transitioning from street markets to online platforms and established distribution channels;
- trade continues to be export-oriented (with primary destinations in East Asia);
- growth in the number of criminal cases initiated against smuggling of CITES specimens follows the changes in the criminal law of the Russian Federation;
- the share of Chinese nationals continues to grow among individuals and teams involved in wildlife trade, with the expansion of a network of mobile buyers of game and other nature-based products;
- wildlife market continues to be institutionalized, with an increase in the number of enterprises and firms processing wildlife products targeted for exports.

Amur tiger, brown bear, Asiatic black bear, Manchurian wapiti, sika deer and musk deer account for the bulk of illegal wildlife trade; the trafficking in white rhino horns and live beluga whales also is recorded.

INTRODUCTION

Wildlife trade in its current form is widespread both in domestic and international markets and may threaten the existence of certain species in the wild. According to WCMC, each year, over 200,000 international trade transactions take place that are subject to CITES regulations, with 25,000-30,000 apes, 2-5 million birds, 10 million reptile skins, several million frog parts, etc., being traded annually. At the same time, much of the actual trade occurs illegally. In 2017 alone, the World Customs Organization recorded globally 387 seizures of mammals, 79 seizures of birds and 426 seizures of reptiles, with the total number of seized specimens (including live animals, parts and derivatives) reaching 30,511 [World Customs Organization, 2017]. Illegal wildlife trade is regarded to be a high-profit, low-risk business. The establishment of common customs zones with simplified flows of goods and reduced numbers of customs posts also makes the prevention of wildlife smuggling more difficult. Overall, illegal trade in wild fauna and flora (excluding forestry and fisheries products) has been estimated to be worth US\$ 5 to US\$ 23 billion dollars per annum [GFI 2017].

The United Nations recognized the international significance of illegal wildlife trade and in 2000 tasked the UN Office on Drugs and Crime (UNODC) to combat transnational organized crime in the area of illicit trade of natural resources. In its Resolution 2001/12, the Economic and Social Council (ECOSOC) urged Member States to adopt "the legislative or other measures necessary for establishing trafficking in protected species of wild flora and fauna as a criminal offence in their domestic legislation." The ECOSOC Resolution 2003/27 further urged Member States to adopt preventive measures as well as to review their criminal legislation with a view to ensuring that offences relating to trafficking in protected species of wild flora and fauna are punishable by appropriate penalties that take into account the serious nature of those offences.

Nevertheless, a survey conducted by UNODC in 131 countries revealed that 72 percent of respondents still do not consider wildlife trade as a serious crime [World Customs Organization, 2017].

To date, several attempts have been made to summarize available wildlife trade data in Russia [Chestin, 1998; Vaisman, A.L., et al., 1999]. However, due to objective reasons, published reviews reflected a certain fragmentation

of the collected data; moreover, over the past 20 years, market structure has changed significantly both in terms of composition of traded species and volume and direction of trade flows.

The objective of the present analysis is to assess the current status of the wildlife market and develop recommendations towards minimizing its illegal components as well as its negative impact on certain traded species.

The key tasks of the project were to:

- analyze the institutional and legal framework for the regulation of wildlife trade in order to identify the main gaps and contradictions and, in some cases, law enforcement practices in this area;
- identify the list of species of animals traded in the Russian Federation, estimate trade volumes for each of these species and their influence on the status of the species in the wild;
- review the current structure of the wildlife market including the main trade flow directions;
- determine the key trends of wildlife market transformation over the last 5–10 years.

The overview provides analyses of wildlife trade in certain species of amphibians, reptiles, birds of prey, mammals and expert assessment of exports and imports of meaningfully traded species of insects of the Russian fauna. The overview doesn't deal with the trade in fish and marine invertebrates and its regulation.

Collecting data on wildlife trade is clearly rather difficult. Domestic trade, except for the species listed in the Red Data Book of the Russian Federation, is not reflected in the official statistics and can only be estimated on the basis of the analysis of supply and demand volumes and, in some cases, expert opinions. WCMC aggregates the statistics on legal international trade involving the species listed in the CITES Appendices, however, the review revealed significant discrepancies between the data of source and destination countries regarding certain species, which further complicated subsequent analysis. Illegal trade volumes were estimated based on the data of General Directorate for Combatting Smuggling of the Federal Customs Service of Russia, media reports on interdictions as well as indirect information on the extirpation of certain populations of particular species. The study methodology is presented in more detail in the respective sections of the publication.

A digital version of the review is published in the Russian and English languages at

https://wwf.ru/resources/publications/booklets/kommercheskiy-oborotdikikh-zhivotnykh-v-rossiyskoy-federatsii.

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> Vladimir G. Krever, Scientific Director, Biodiversity Conservation Program, WWF Russia

PART I WILDLIFE TRADE REGULATIONS

A.L. Vaisman, T.O. Ivannikova, M.A. Krupskiy, T.Yu. Skripnik

This part of the study will review the issues of the regulation of wildlife trade in relation to the categories of wildlife⁴. The definition of *wildlife trade* used by the authors includes such actions as buying, selling, sheltering, storing, transporting and shipping of wild animals, their parts and derivatives as per the terms of Article 258.1 of the Criminal Code of the Russian Federation. The review will also cover the regulation of other actions related to trade, such as confiscation and breeding of traded wildlife, the issues of CITES implementation in Russia and the regulation of trade in CITES specimens within the Eurasian Customs Union. Regulation issues will be reviewed in the context of regulatory support of trade and related actions, including the gaps and corruption risk factors in the legislation, shortcomings in the personnel and organization system that weaken interagency coordination between the competent authorities overseeing transborder transportation of CITES specimens and their trade within Russia. This section does not cover the issues related to the system of veterinary permits for trading in wild animals, their parts and derivatives.

⁴ Such categories include "species listed in the Red Data Book of the Russian Federation," "species listed in the Red Data Books of the entities of the Russian Federation," "game resources," "aquatic bioresources," "wildlife other than game resources and aquatic bioresources," "CITES specimens."

1. LEGAL AND REGULATORY FRAMEWORK FOR WILDLIFE TRADE

Today's regulation of wildlife trade reveals gaps and associated corruption risk factors in the legislation presently in force that increase the latency of crimes against wildlife. The absence of specific rules for trade in wildlife means that, other than for the animals listed in the Red Data Book of the Russian Federation and high value species, all legally owned wildlife is considered private property and can be disposed of at the owner's discretion.

The current legislation does not provide for the procedure of tagging and identification of wild animals, their parts and derivatives as a means of verifying the legality of their origin. A requirement for the use of identification tags in exported CITES live specimens only has been established. The legislation does not regulate trade in medicines, perfumes and alcohol products manufactured with the use of wildlife products. Regulatory norms and provisions fail to designate specific authorities with the mandate to control and supervise wildlife trade other than in a few exceptional circumstances. The lack of systemic regulation of wildlife trade creates serious difficulties in the enforcement of the legality of trade.

The existing civil law does not provide an unambiguous definition of wildlife trade. However, Article 258.1 of the Criminal Code of the Russian Federation defines 'trade in high value species' as comprising their 'sheltering, purchase, storage, transportation, shipment and sales'. Wildlife and wildlife products can be sourced for trade from legal or illegal removal, reproduction of legally or illegally removed animals, reproduction of animals captively bred for several generations with unknown initial origin, legal or illegal import. Trade in wildlife and wildlife products can be legal when their origin is legal and duly supported by respective documents, or illegal when their origin is illegal. The existing civil law of the Russian Federation treats wildlife and wildlife products as common objects of civil law and does not segregate them into any separate or special category of goods⁵.

⁵ Pursuant to Article 221 of the Civil Code of the Russian Federation, a natural person that legally removed a wild animal from a natural habitat acquires the right of ownership to the animal and the products from it.

At present, there is no system-wide regulation of trade in all categories of wildlife. The existing legal framework for wildlife trade regulation is highly fragmented. Individual norms, rules and procedures governing trade are presented in various pieces of legislation. Specific aspects of wildlife trade are governed by the norms of the environmental and related legislation. Wildlife trade regulation is based on the national legislation that, inter alia, provides for the implementation of international agreements, including CITES that Russia joined in 1992 as the legal successor to the Soviet Union. This includes federal laws that regulate general issues and thematic normative acts, such as decrees and orders, that promulgate the rules and procedures of trade and removal of wildlife of various categories. The result is that compliance with the established rules becomes quite complicated, while both wildlife traders and wildlife trade regulators lack the full picture of applicable regulations.

LIABILITY FOR ILLEGAL WILDLIFE TRADE

Illegal wildlife trade includes illegal sheltering/storage, acquisition, transportation, shipment and sales, export/import of wild animals, their parts and derivatives.

Code of the

Smuggling is a criminal offence of illegal transfer of goods across a customs border.

Adı	ninistrative liability:	Russian Federation on Administrative Offences
0	Domestic illegal trade in species* not included in the list of high value species**	Article 8.35
0	Trafficking in species ^{***} not included in the list of high value species across the customs border of the EACU unless their cost exceeds US\$ 15,870 and US\$ 1,580 for musk deer, Asiatic black bear and brown bear ^{**}	Article 16.3
Cri	minal liability:	Criminal Code of the Russian Federation
1	Domestic illegal trade in high value species	Article 258.1
2	<i>Large-scale smuggling</i> of strategically important goods and resources or high value species	Article 226.1

* Species listed in the Red Data Book of the Russian Federation or species protected by international agreements.

** Elements of the offences are exactly defined in Articles 8.35 and 16.3 of the Code of the Russian Federation on Administrative Offences; Articles 258.1 and 226.1 of the Criminal Code of the Russian Federation.

*** Species listed in the Red Data Books of the EACU Member States or species regulated by the CITES, live sables, harp seals derivatives prohibited to import.

High value species



Strategically important goods and resources

are the species listed in the Red Data Book of the Russian Federation or regulated by the CITES.

'Large-scale smuggling of strategically important goods and resources'

means smuggling of such goods and resources worth of more than US\$ 15,870 and US\$ 1,580 for musk deer, Asiatic black bear and brown bear.

Part

Any part of an animal (e.g. skin, shell, root) whether raw or processed in a simple way (e.g. preserved, polished, etc.). Parts are usually readily identifiable.

Derivative

Any processed part of an animal (e.g. medicine, perfume, watch strap).

LIABILITY FOR ILLEGAL WILDLIFE TRADE

Article	Offence/crime
8.35 Code of the Russian Federation on Administrative Offences****	Domestic illegal trade in species not listed in the list of high value species
258.1 Criminal Code of the Russian Federation****	1. Domestic illegal trade in high value species

Punis	hments
1 0000	i interite

1 инизитениз		
Individuals	Officials	Legal entities
Fine: US\$ 40–80 📛	US\$ 240–315 🛎	US\$ 7,935–15,870 👗
+ seizure of the equipment f	the animals their parts of	, animals themselves, or derivatives*
Individuals	Officials	Organized group
Fine: US\$ 15,870	US\$ 31,730 or equivalent	US\$ 31,730 or equivalent
to the salary** of the convicted person	to the salary** of the convicted person	to the salary** of the convicted person
for 2 years 🚊	for 5 years 🚆	for 5 years 📃 🚆
-0-0	-0-0-0-0 🔴	
Up to 480 hours of compulsory work	Up to 3 years	Up to 5 years of disqualification
Up to 2 years	positions***	positions***
labour Up to 4 years	💼	
of forcedo		Up to 2 years
Up to 1 years	Up to 6 years	of custodial restraint
of custodial restrain	of imprisonment	
Up to 4 years of imprisonment	రోరి	5–8 years of imprisonment

*or without seizure; **or other income; ***or practice certain professions; **** the Article also applies in cases of illegal wildlife harvesting.

LIABILITY FOR ILLEGAL WILDLIFE TRADE

Article

Offence/crime

258.1 Criminal Code of the Russian Federation

1.1. Illegal acquisition or sale of high value species, their parts and derivatives with the use of mass media or the Internet

Punishments



or other income; *or practice certain professions.

LIABILITY FOR ILLEGAL WILDLIFE TRADE

Article	Offence/crime
16.3 Code of the Russian Federation on Administrative Offences	Trafficking in species** not included in the list of high value species across the customs border of the EACU unless their value exceeds US\$ 15,870 and US\$ 1,580 for musk deer, Asiatic black bear and brown bear***
226.1 Criminal Code of the Russian Federation	Large-scale smuggling of strategically important goods and resources or high value species

Punishments

 Individuals		Officials		Legal entities	
Fine: US\$ 15–40	2 9	US\$ 80–315	29	US\$ 795–4,760	29

+ **Seizure** of the objects of the offence*

	Individuals	Officials	Organized group	
-	Fine:			
	US\$ 15,870 👗	US\$ 15,870 👗	US\$ 15,870 🛎	
	or equivalent to the salary** of the convicted person for a period of	or equivalent to the salary** of the convicted person for a period of	or equivalent to the salary** of the convicted person for a period of	
	Up to 5 years	Up to 5 years	Up to 5 years	
	-0-0-0-0	-0-0-0-0	-0-0-0-0	
_	Up to 1 years of custodial restraint	Up to 1,5 years of custodial restraint	Up to 2 years of custodial restraint	
	-0-0-0-0-0-0			
	3–7 years	5–10 years	7–12 years	
	of imprisonment	of imprisonment	of imprisonment	

*or without seizure; **or other income.

Russia has undertaken specific measures to counter illegal wildlife trade. These include the adoption of the list of high value species, illegal hunting, domestic trade and smuggling of which is criminally punishable since 2013. Tightening of the responsibility for illegal trade in high value species using mass media and Internet was another important decision in line with modern trends in wildlife trade regulation. Online platforms have recently become one of the most convenient media for both legal and illegal wildlife trade.

The adoption of the list of high value species, as well as the list of strategically important goods and resources with the criminal threshold of 100,000 rubles (US\$ 1,562), has allowed to overcome the previously persistent problem of the lack of criminal cause in the smuggling cases of certain species that were of high interest to traders. These species include Amur tiger, saiga antelope, gyrfalcon, saker falcon, peregrine falcon, as well as brown bear, Asiatic black bear and musk deer.



Prior to the introduction of Article 258.1 of the Criminal Code of the Russian Federation⁶ that deals with illegal removal of and trade in high value species, persons who stored, transported or shipped parts and derivatives of animals listed in the Red Data Book remained unpunished. Only those who illegally removed⁷ wild animals or bought/sold criminally obtained goods⁸ were subject to liability. Prior to the approval of the lists of high value species and

⁶ "Illegal removal, sheltering, purchase, storage, transportation, shipment and sales of high value wild animals and aquatic biological resources belonging to the species listed in the Red Data Book of the Russian Federation and/or protected by the international treaties of the Russian Federation, their parts and derivatives."

⁷ Article 258 of the Criminal Code of the Russian Federation.

⁸ Article 175 of the Criminal Code of the Russian Federation.

strategically important goods and resources, CITES specimens, for which the high value threshold has been established at 100,000 rubles (US\$ 1,562), criminal liability for illegal transportation of any wild animals, their parts and derivatives across the customs border of the EACU was only triggered if their value exceeded 1,000,000 rubles (US\$ 15,625).

As illegal trade in certain species gets recognized to be socially dangerous and criminally punishable, motivations of traders to engage in criminal business are also reduced.

After the adoption of the list of high value species for the purposes of Articles 226.1 and 258.1 of the Criminal Code of the Russian Federation, illegal trade and smuggling of such specimens became criminally punishable irrespective of their value. In 2015–2017, over 3.5 thousand crimes covered by Article 258.1 of the Criminal Code of the Russian Federation were identified and over 2 thousand people were prosecuted. According to the data of the Judicial Department at the Supreme Court of the Russian Federation, 361 out of 370 persons prosecuted in 2016 pursuant to Article 258.1 of the Criminal Code were prosecuted under part one of this article. This means, according to the statistics, that 97 percent of offenders were prosecuted under the least serious section of Article 258.1, even though case files indicated that many of them acted as part of groups on prior agreement or used their official position, therefore, punishable under parts two or three of the same article.



Figure 3. Statistics of initiated criminal cases (lower line) and cases on administrative offenses (upper line) related to illegal transportation of CITES specimens across the customs border of the Eurasian Customs Union
Nevertheless, the scope of illegal removals of wild animals and illegal trade in their parts and derivatives remains high. In 2018, a special operation of the Far East Operational Customs and the Primorsky Territorial Department of the Federal Security Service of Russia prevented a smuggling attempt over the ice of Lake Khanka into China of a large shipment of wildlife including parts of five Amur tigers, 867 paws of brown and black bears, deer tails, 56 kg of dried frog roe and testes. Bear paws alone had an estimated value of 55 million rubles (US\$ 859,375). In 2018, the customs authorities also prevented a smuggling of 28 falcons (gyrfalcons, peregrine falcons, saker falcons) with a total value of more than 30 million rubles (US \$ 457,650).

Furthermore, the liability for the smuggling of species that are not included in the list of high value species and most CITES specimens listed as strategically important goods and resources may be limited to a fine of 1,000 rubles (US \$15) if the value of the illegally transported batch is less than 1,000,000 rubles (US\$ 15,625). The Federal Customs Service of Russia considers this to be a serious issue noting that smugglers adapt to the current legislation and actively use the existing legal loopholes to evade criminal liability by splitting illegal consignments into small batches valued each less than one million rubles (US\$ 15,625).

In this context, the expert community is arguing for the need to expand the list of strategically important goods and resources for which the high threshold value of a shipment is set at 100,000 rubles (US\$ 1,562), as well as to increase the lower level of the sanction of Article 258.1 of the Criminal Code of the Russian Federation and reduce the number of alternative sanctions.

Regulation of trade in specific categories of wildlife

Rare and endangered species listed in the Red Data Book of the Russian Federation and regional Red Data Books

Trade in species listed in the Red Data Book of the Russian Federation is restricted, with case-by-case permits for exceptional circumstances issued by the Federal Service for Supervision of Natural Resource Management following the procedure promulgated by the Government of the Russian Federation. The rules of the removal Red Data Book-listed species from the wild do not provide for their removal from the wild for the trade purposes. However, the Rules of sale of specific categories of goods stipulate that the sale of goods made of wildlife products (fur and leather sewing, haberdashery and decorative items, footwear, food) from the species listed in the Red Data Book of the Russian Federation shall be carried out with the documentary proof of wildlife removal based on a permit in compliance with the law. In such sales, sellers must provide to buyers, upon their request, the information confirming the existence of a relevant permit. The same procedure applies to sales of seized or confiscated animals. Therefore, the existing legislation includes mutually contradictory norms regarding trade in the Red Data Book-listed species.

The export of rare and endangered species listed in the Red Data Book of the Russian Federation but not regulated by CITES is governed by special permits granted by the Federal Service for Supervision of Natural Resource Management in accordance with the Unified list of goods banned or restricted for import or export by member states of the Customs Union of the Eurasian Economic Community in their trade with third countries and the Restriction implementation procedures approved by the Commission of the Customs Union⁹.

Derivatives of the Red Data Book-listed species are traded in noticeable volumes even though such trade is legally confined to exceptional circumstances.

Trade in species listed in the regional Red Data Books, a legally distinct wildlife category, is regulated by the regional laws on administrative offenses¹⁰. This creates complications with decision-making by the customs authorities on the transportation of such specimens across the customs border of the Eurasian Customs Union. There are legally defined measures of non-tariff regulation for the species of fauna listed in the Red Data Books of the Union's member states. Regulation and administrative enforcement of wildlife trade in species listed in regional Red Data Books is the mandate of regional authorities. A number of species listed in regional Red Data Books in Siberia and the Russian Far East are subjected to illegal hunting and subsequent export to China, e.g. Amur rat snake (Elaphe schrenckii), tiger keelback (Rhabdophis tigrinus), Sakhalin adder (Vipera berus sachalinensis), oriental fire-bellied toad (Bombina orientalis), Mongolian toad (Strauchbufo raddei) - for medicinal products. Customs are not authorized to request documentation proving the legality of removal of these species. When such specimens are properly transported and declared in customs for export clearance, there are no legal grounds for penalizing the persons who export the illegally hunted species that are listed in regional Red Data Books.

⁹ Annex 6 to the Decision of the Board of the Eurasian Economic Commission dated 21 April 2015 No. 30.

¹⁰ The administration of regional Red Data Books is the legal mandate of the regions (subjects) of the Russian Federation, while any restrictions on the free flow of goods and services can only be imposed by the federal law.

Game Resources

The Federal Law "On the hunting and conservation of game resources" defines the procedures for primary processing and transportation of hunted animals, i.e. the beginning stage of the game trade cycle. Transportation and sales of game products shall be carried out in accordance with the documents proving their origin, i.e. wildlife removal permits. All legally owned game resources, their parts and derivatives are considered private property and can be disposed of at the owner's discretion. Competent regional authorities in wildlife conservation, oversight and regulation of use carry out relevant supervision of these activities in accordance with the mandate delegated by the Russian Federation. Even though the law delegates to the regions of the Russian Federation the responsibility to regulate game trade, it does not specify any norms for such regulation nor designate a competent authority empowered to make relevant rules.

Therefore, oversight of trade in game products is effectively limited to raids that detect illegal removals of wildlife and its transportation within hunting grounds. Such oversight is rendered ineffective by the designated authorities' inability to inspect storage, primary handling, sorting and loading sites of game products, as well as because this effort is disconnected from the investigations of criminal liability for the purchase of illegally obtained products. This significantly hampers the detection of linkages between those involved in illegal hunting and those buying illegally hunted products. Gaps and contradictions in legal regulation on traditional indigenous hunting could be used as a one of the tools for the legalization of poaching products. Exclusive rights of the indigenous peoples of the North, Siberia and the Far East to hunt without any permit, right to sell the hunting surplus and legal uncertainty in defining the owners of these rights open a window for unscrupulous use of this legal gaps.

Moreover, the procedure for establishing the involvement of persons carrying out illegal hunting and sales of illegally hunted products takes considerable time in accordance to the procedural laws and regulations.

So, there is currently no systemic regulation and control of trade in hunting products in Russia.

Aquatic Biological Resources¹¹

As the study specifically covers the trade in marine mammals that are captured for cultural and educational purposes, this section focuses on the respective body of regulations.

Specific aspects of trade in aquatic bioresources are regulated by the norms set in the federal laws "On wildlife" and "On fisheries and conservation of aquatic biological resources" as well as by the rules and procedures covering the following activities:

- granting use rights on aquatic bioresources;
- fishing for educational and cultural purposes (for specimen collections and disposable items in expositions, exhibitions, zoos, oceanariums, museums, circuses, etc.);
- whaling for research, educational, cultural and other noncommercial purposes;
- capture of rare and endangered species of aquatic bioresources (for conservation and monitoring of their populations, artificial breeding or acclimatization, traditional economic activities of indigenous peoples of the North, Siberia and the Far East).

Starting from 2018, bringing live marine mammals ashore is no longer allowed during traditional fisheries, such animals can't be legally traded.

Until 2020, the conservation and/or use of marine mammals as aquatic bioresources was subject to norms that fail to account for the specifics of their life cycle and habitats and did not provide clear and unambiguous definitions of authority regarding the control and supervision of their trade except for special cases.

The federal law "On fisheries and conservation of aquatic biological resources" stipulates that aquatic bioresources are in federal property. The aquatic resources captured for cultural and educational purposes are put in the custody of educational, research and cultural organizations that have specific plans and equipment for conducting cultural and educational activities on the territory of Russia. However, organizations involved in the capture of marine mammals often export them abroad. A mismatch between the regulatory basis for the capture of marine mammals for cultural and educational purposes and

¹¹ This review covers marine mammals only.

their actual commercial use currently became one of the most prominent legal issues. The problem was aggravated by the lack of real supervision over the trade in marine mammals, a function that was not assigned to any competent authority, with a few exceptions.

The export of marine mammals is controlled, within their respective mandates, by the Federal Customs Service, Federal Border Service and Federal Service for Supervision of Natural Resource Management. Until 2020 the control over the trade in marine mammals was limited to the control over the trade in species listed in the Red Data Book carried out by Federal Service for Supervision of Natural Resource Management, while the rules of transportation of cetaceans for research, cultural, educational and other non-consumptive purposes were enforced by the Federal Service for Supervision of Natural Resource Management, Federal Fisheries Agency and Federal Border Service (within their respective mandates). Since 2020 Federal Service for Supervision of Veterinary and Phytosanitary controls the keeping in captivity and use of wild animals for "cultural and entertainment purposes", as well as license the activities for keeping and using animals in zoos, circuses, dolphinariums and oceanariums. In other cases, control over the keeping in captivity and use of wild animals is carried out by Federal Service for Supervision of Natural Resource Management.

CITES specimens

CITES specimens can include rare and endangered species listed in the federal and regional Red Data Books, game resources, aquatic bioresources and other wildlife. Trade in wildlife and wildlife products including their import, export and transit is regulated by the Russian law with due respect to the universally accepted principles and the norms of the international law.

The existing Russian legislation is not fully adapted to the implementation of specific tasks of compliance with CITES. Russia is one of the countries whose laws only partially reflect the aspects of CITES implementation.

International trade in CITES specimens is regulated, in line with CITES requirements, by the Decree of the Government of the Russian Federation "On the measures of implementation of the obligations of the Russian Federation arising from the Convention on the International Trade in Endangered Species of Wild Fauna and Flora" and the respective administrative process ('reglament') of the Federal Service for Supervision of Natural Resource Management. The regulation is exercised primarily through a permit-based

system of export and import of CITES-regulated species. Permits are issued by the CITES Management Authority, subject to the recommendations of the CITES Scientific Authority, except in exceptional cases. To obtain such a permit, documents must be submitted on the legality of origin of the transported specimens, irrespective of the wildlife category they belong to according to the national legislation.

The same process is replicated in the Eurasian Customs Union regulations. The respective Unified list of goods banned or restricted for import or export¹² includes all CITES specimens.

The following regulatory issues are related to trade in CITES specimens.

Regulations for trade in CITES specimens apply only to movements across the external borders of the Eurasian Customs Union's member states. Trade in CITES specimens within the national boundaries of Russia is practically not regulated or controlled. No competent authorities are designated to exercise supervision over the sheltering, transportation and trade of CITES specimens inside Russia. The only exception relates to the seized or confiscated wild animals and their parts or derivatives whose utilization is based on permits issued by the Federal Service for Supervision of Natural Resource Management.

In the absence of mandatory tagging of legally imported CITES specimens and control of their trade¹³, conditions emerge that favor legalization of smuggled goods and growth of the trade in illegally imported specimens. The latter is of special relevance for the import of large, usually commercial, shipments that are split for retail distribution into smaller batches without any proof of legal origin¹⁴.

Sales of legally imported CITES specimens are regulated by the Rules of sale of certain types of goods. However, the respective provisions of the

¹² Decision of the Board of the Eurasian Economic Commission dated 16 August 2012 No. 134 (as amended on 15 November 2016) "On the normative legal acts in the area of nontariff regulation."

¹³ Import of such specimens is carried out based on the export permits of the originating countries and does not require a preliminary import permit.

¹⁴ An export permit is issued by the Management Authority of the exporting country for the entire batch of specimens. Once inside Russia, the imported batches are typically split into smaller batches for retail distribution. Retailers normally use notarized copies of the CITES permit for the proof of legality of origin of the specimens. As a result, valid documentation is being created for the trade in CITES specimens exceeding the legally imported batch in multiple amounts.

Rules are not being followed, given the absence of a system of supervision by the regional competent authorities and the lack of a system of tracking and processing of updated information on the imported CITES Appendix II specimens. Furthermore, certain provisions of the Rules include inaccurate definitions regarding CITES permits. A further issue is the absence of a legally defined procedure for conducting an expert identification of species for a CITES specimen involved in a possible violation.

Wildlife trade related to captive breeding of CITES specimens

Trade in CITES specimens that are captively bred (in open enclosures or controlled environments) requires special control to ensure the legality of their origin. Trading in captively bred specimens and in pre-Convention specimens elicits the risks of switching them with specimens removed from wildlife. False declarations of export for the reportedly captive-bred animals have been uncovered in relation to the attempts to export species whose captive breeding is impossible [TRAFFIC 2012; CITES 2015]. This has triggered the adoption of a special resolution by CITES CoP17 on the review of trade in animal specimens reported as produced in captivity.

The existing Russian regulations do not define the notions of "open enclosure" and "controlled environment".

CITES distinguishes several categories of captive-bred generations:

- "first-generation offspring (F1)" are specimens produced in a controlled environment from parents at least one of which was conceived in or taken from the wild;
- "offspring of second generation (F2) or subsequent generation (F3, F4, etc.)" are specimens produced in a controlled environment from parents that were also produced in a controlled environment.

Wildlife breeding is regulated by permits issued in accordance with the wildlife law and other normative acts related to various wildlife categories. For example, permits for the breeding of native species listed in the Red Data Book of the Russian Federation are issued by the Federal Service for Supervision of Natural Resource Management, while the same for other game and non-game species – by the regional authorities. Trading in captive-bred animals of the respective wildlife categories, whether they are CITES-listed or not, is governed by the relevant regulations described earlier in this chapter. Trading in animals captively bred from the imported CITES specimens is not subject to any special rules. The legality of such

trade is confirmed by the documents proving the legal origin of the parent generation and the captive-bred generation.

The following **regulatory gaps** can be presently observed with regard to **breeding**, **keeping and transfer of ownership of captive-bred wild animals**:

- absence of regional procedures and permit templates to regulate breeding of non-Red Data Book and non-game species (a few regions being an exception);
- absence of a federal procedure to register breeding operations for CITES Appendix I species, which leaves such breeding facilities without regulation;
- absence of a procedure for tagging and documenting of captive-bred animals (despite the CITES requirements) including molecular genetic methods as the basis for the accounting of captive-bred wild animals and the respective reporting (tagging procedures and recommendations that are developed by the CITES Scientific Authority can apply in individual cases);
- absence of rules for trade in animals produced from parents imported under a CITES permit;
- absence of a legal basis for the supervision for captive breeding of species listed in the CITES Appendices;
- permits for the export and import of captive-bred CITES specimens are being issued by the Management Authority without the relevant recommendation from the Scientific Authority, which contravenes CITES requirements.

Seizure and confiscation

Permit-based procedures have been established for the use, disposal or sale of any seized and confiscated wildlife specimens based on wildlife category.

Confiscated CITES specimens can be:

- returned to the country of origin (after consulting with the respective state);
- released into the wild (live animals);
- transferred at no charge to state or municipal enterprises or entities for conservation, research and education purposes;
- transferred to the Federal Agency for State Property Management to be sold for purposes other than conservation, research and education;
- disposed/killed (live animals) if sale is impossible.

With regard to seized and confiscated animals (and derived products) that are not listed by CITES, use permits are issued by the Federal Service for Supervision of Natural Resources Management or by a regional wildlife authority. Such animals or products can be:

- transferred at no charge to state and municipal entities for conservation, cultural, research, medical or education use, on the basis of a competent authority's decision;
- transferred by the competent authority to the Federal Agency of State Property Management or its territorial body to be sold for other purposes;
- disposed of should their utilization be impossible.

There is no procedure for releasing confiscated CITES specimens of aquatic bioresources back into the wild (except for the sturgeon, salmon, crabs and craboids, mollusks, echinoderms), they only can be transferred to the Fund of property of the Russian Federation for the sale or disposal. The lack of legal procedure to release in the wild after seizure or confiscation is also challenging for marine mammals, which are considered as aquatic biological resources under national legislation.

Existing regulation doesn't not provide for the transfer of animals to specialized organizations for shelter and rehabilitation. Another acute problem associated with confiscations of wild animals is the absence of a system of state or municipal enterprises and organizations that can provide for a temporary shelter and longer-term keeping of detained, seized and confiscated live wild animals. The compilation and approval of a list of such organizations (public and private alike) that could be granted the status of seized wildlife shelters would help optimize operations of the entities handling wildlife seizures and to enable due conditions for the CITES implementation. A clear procedure shall define how such specialized organizations are designated for the temporary sheltering (storage) of specimens.

One more challenge is related to the extended time that it typically takes to investigate illegal wildlife trade cases becomes a primary reason for prolonged periods of captivity of the seized animals and inability to quickly release into the wild those that are physically fit. The Code of Criminal Procedure of the Russian Federation does not provide for the release of material evidence (seized animals) even if the seized animals that serve as such evidence are physically fit to be released into the wild¹⁵.

¹⁵ Article 82 of the Code of Criminal Procedure of the Russian Federation ("Evidence storage").

Regulatory amendments shall be considered to allow the release of animals serving as evidence, if such animals are fit to be released into the wild, after a 30-day quarantine, once the necessary specimen details have been documented (photo and video recordings of the seized animal, other information that would allow its positive identification such as species and individual features, ID number, name, marks, etc., laboratory results if required).

According to the "Rules of transfer for storage, sheltering and breeding or sales of items of material evidence in the form of live animals whose physical condition does not allow to release them into their habitat," financing of respective operational costs shall be covered from the budget appropriations of the preliminary investigation authorities. Prior to the enactment of these Rules, there has been no provision of any financing for sheltering of confiscated animals given that live animals were treated in the same way as other items of material evidence that can be stored at no additional cost (equipment, property, etc.). Nevertheless, specific procedures for budgeting the costs of animal shelter during investigation remain unsettled. A separate budget line shall be appropriated for the competent seizure and confiscation authorities to cover their costs of evidence storage and sheltering of live animals. A procedure shall be developed for recovering the costs of temporary shelter (storage) of specimens from the natural and legal persons whom they were seized or confiscated from.

Internet wildlife trade

Wildlife trade on the Internet in Russia is regulated by the same norms as conventional (off-line) trade plus the Rules of remote sales of goods. The only restrictions that can specifically apply to online wildlife trade include the ban on the online trade of goods that are restricted or banned from public distribution by the laws of the Russian Federation and the ban on the publication of the information that constitutes a criminal or administrative offense. Such information includes, inter alia, ads offering to sell or buy animals that are restricted or banned from trade. Nevertheless, it is particularly difficult to distinguish legal wildlife trade on the Internet from the illegal one. Online resources offer a wide variety of species, their parts and derivatives that are either restricted or banned from trade or entirely untouched by the current legislation. One can find online ads selling high value species, CITES-regulated species that can be legally or illegally imported from other countries, captive-bred or sourced from the wild, or their offspring captively bred after their import into Russia, or others. Criminal liability is envisaged for trade in high value species and in their parts and derivatives. Regulation of Internet wildlife trade is complicated by the lack of possibility to check the legality-of-origin documentation without a controlled purchase. With no system in place for a targeted monitoring of Internet wildlife trade, conditions are set for the sales of wildlife without due permits.

Trafficking in high value species carries a criminal liability in Russia, while domestic trade in CITES specimens is not subject to any Russian regulation other than for certain aspects of trade in imported specimens. The most common response of the competent authorities to a detected ad selling animals banned from trade is to block such ad as an information item prohibited from circulation. Nevertheless, users can still place new wildlife trade ads instead of the blocked ones.

2. CORRUPTION RISK FACTORS IN WILDLIFE LEGISLATION

M.A. Krupskiy

This section is based on the results of the anticorruption assessment of wildlife trade regulations.

Corruption and inadequate regulation of wildlife trade facilitate the illegal wildlife trade [WWF,TRAFFIC, 2015]. The 17th meeting of the Conference of the Parties to CITES adopted Resolution Conf. 17.6 on "Prohibiting, preventing, detecting and countering corruption, which facilitates activities conducted in violation of the Convention" encouraging states to integrate their obligations under CITES with those under the UN Convention Against Corruption and the UN Convention against Transnational Organized Crime [Williams, Parry-Jones, Roe, 2016].

The concept of corruption is typically associated with dubious financial transactions and bribery in various forms for material or other gain. A wide range of manifestations and multidimensionality of corruption become a significant obstacle to creating a comprehensive definition of this concept. The UN Convention Against Corruption does not contain a uniform definition of corruption given the multitude of legal, criminological and political problems this entails in different countries. INTERPOL defines corruption as any course of action or failure to act by individuals or organizations, public or private, in violation of law or trust for profit or gain. UN Environment and the wildlife trade monitoring network TRAFFIC follow a similar definition of corruption, coined by Transparency International, that employs a broader rendering of this notion – the abuse of entrusted power for private gain [WWF, TRAFFIC, 2015].

According to the WWF and TRAFFIC primer *"Strategies for Fighting Corruption in Wildlife Conservation"* this abuse of power can take many forms, including fraud, forgery, turning a blind eye to crimes, extortion, coercion, nepotism, trading in influence, embezzlement and laundering of the proceeds of crime. The World Bank identifies petty corruption as a separate type of corruption that involves the payment of comparatively small amounts of money to *"facilitate"* routine official transactions, such as customs clearance or the issuing of building permits.

The legislation of the Russian Federation defines corruption not only as receiving and giving a bribe, but also abuse of official position and authority and other unlawful use of one's official position contrary to the legitimate interests of society and the state for the purpose of gain in the form of money, valuable items, other property or property services, property rights for oneself or for third parties.

Corrupt activities can take place at all stages of the illicit trade in wildlife including granting permits and licenses for their export or commercial trade, or it can have more latent forms (lax control over documentation or shipment specifications) [UNDOC, 2012]. To this end, Russia's CITES Management Authority (Federal Service for Supervision of Natural Resource Management) has listed the issuance of export and import permits for wildlife, including rare and endangered species, among its 'corruption-prone functions'.

Corrupt actions can also precede trade at the stages of removal quota approval or removal permit issuance, thereby undermining the legitimacy of the entire transaction cycle and trade chain. In the existence of legal markets, documentation of proof of legal origin of wildlife products becomes particularly prone to corruption considering that illicit products can be inserted into legal commercial channels [UNDOC, 2017]. This is pertinent for both wild-sourced and captive-bred animals.

Corrupt behaviors undermine apprehension and prosecution of actors involved in illegal wildlife trade. This can include bribery or coercion of law enforcement officials, prosecutors or judges to avoid investigation or to influence court decisions, thereby granting immunity to criminals and further undermining the morale of operational staff, considering the shortages in human resources allocated to wildlife trade enforcement.

However, corruption is not confined to direct violations of the law. The foundations of corruption enabling illegal or unsustainable wildlife trade are set at the level of public policies and legislation in this area.

Corruption risks arising from legislation are shaped by corruption-prone regulatory provisions that allow for unjustifiably broad limits of discretion or exemptions to be exercised by enforcement agents, as well as provisions that impose poorly defined, difficult and/or onerous requirements on individuals and organizations and are therefore conducive to corrupt behaviors.

Corruption factors inherent in wildlife trade regulations require careful attention as they create risks and enabling conditions for corruption without explicit legal infringements and thereby increase the latency of corruption itself and of wildlife crimes. Such factors translate themselves into legal loopholes that allow the taking of wildlife commerce decisions in favor of specific persons and avoiding serious penalties for those involved in illicit removal of and trade in wildlife. Therefore, elimination of corruption factors in the legislation becomes key to reducing potential corruption.

An expert assessment of the corruption factors in the environmental law and the related legislation governing wildlife trade has been carried out following the Methodology for anticorruption assessment of normative legal acts. The assessment has highlighted certain gaps in the Russian legislation that arise from the lack of systemic mechanisms of wildlife trade regulation. It has also uncovered several corruption factors that can enable illicit and unauthorized wildlife trade and thus undermine law enforcement in this area.

Regulatory ambiguities complicate enforcement and documentation of infringements and leave loopholes that can facilitate corrupt actions.

The following corruption factors are most common in the legislation governing wildlife trade:

- normative collisions¹⁶;
- breadth of discretionary authority¹⁷;
- incompleteness of administrative procedures¹⁸;
- excessive (and undefined) requirements for individuals and organizations exercising their rights.

Normative Collisions

Contradictions within the Federal Law "On hunting and conservation of game resources" can serve as an example of a normative collision. The law stipulates that hunting of indigenous peoples of the North, Siberia and the Far East with the purpose of maintaining a traditional lifestyle can be carried out for individual consumption without a permit. The same law sets a norm that allows selling the surplus of hunted products to specialized organizations by indigenous people. The existence of two mutually exclusive norms leads to a dual interpretation of the law and potential corruption when hunting for sale without a permit is detected. This is already posing a potential threat to the wild reindeer population in Taymyr and can in the future affect other endangered and overhunted species.

¹⁶ Contradictions between norms, including internal, that allow an authorized official to make an arbitrary choice of the norm to be applied in a specific case.

¹⁷ Absence or ambiguity of deadlines, terms, or grounds for decision-making; duplication of authority of state entities, local self-government entities, or organizations (their officials).

¹⁸ Absence of a procedure (or an element of a procedure) for executing certain functions by government or self-government entities (their officials).

The current version of the law conflates the notions of commercial hunting with hunting for maintenance of traditional lifestyle and traditional economic activities. In this way, any illegally hunted animals would be considered legal if documented as a surplus purchased from indigenous people, which would incentivize involvement of indigenous communities in criminal activities.

Breadth of discretionary authority and incompleteness of administrative procedures

The existing Rules for utilization of confiscated wild animals and plants regulated by CITES offer an example of broad discretion and incomplete procedures. The Rules do not specify the procedure as to how the violator shall reimburse the costs of temporary storage of confiscated animals. The current version of the Rules aggravates the absence of an established system for handling confiscated animals and allows an arbitrary choice of method of reimbursement of the related storage costs. In turn, this can lead to evasion of violators from cost recovery and to undue financial burden of additional costs on the part of organizations providing temporary shelter for confiscated animals.

The corruption factor of lacking or incomplete administrative procedures manifests itself in the Procedure of issuing permits for trade in wild animals listed in the Red Data Book of the Russian Federation. The Procedure requires that a permit application shall be accompanied by documents justifying the requested use. However, the Procedure does not call for furnishing a documentary verification of statements provided in the application (including the applicant data, type and duration of the requested use of wild animals, conditions in which they will be kept ex situ). Given the absence of a verification procedure, an applicant can submit false information. The lack of the requirement to submit a documentary verification of statements is a clear example of an incomplete administrative procedure for the review of a submitted justification, including the lack of review criteria. The Procedure does not include a norm for the competent authority's review of an actual type of wildlife use versus a declared use. Nor does the Procedure provide for cancellation of a permit in cases where the actual use does not match the declared use, or if conditions for keeping the animal do not comply with wildlife regulations. Without an effective control by a competent authority over the permitted use of species listed in the Red Data Book, and with no risk of permit withdrawal, the terms of use of wild animals declared in the permit application can be easily violated.

The corruption risk assessment has also diagnosed corruption factors in the normative legal acts regulating wildlife removals. The corruption factors

that can cast doubt over the legal origin of wildlife prior to its removal can subsequently ruin the legality of the downstream transaction chain.

For example, the Rules of removal (catch) of rare and endangered species of aquatic biological resources include corruption factors¹⁹ related to:

- absence of a procedure for setting the permitted timing and methods of removal of aquatic bioresources and a norm assigning respective responsibilities of the competent authority, which renders impossible any objective control over the timing and methods of removal;
- absence of a procedure for citing violators for noncompliance with the permitted timing and methods of removal;
- undefined requirements to individuals and organizations performing the removal with regard to the documentation of the removal; the Rules do not include a clear template of the removal document nor a checklist for its completion, thus allowing for an ambiguous approach to the presentation of information therein.

Competent authorities issue permits for the capture of marine mammals based on the approved plans of cultural and educational activities that must include the duration of the use of animals.

The Procedure for conducting fishing for educational and cultural purposes requires that, within one month of completion of the fishing activities declared in the educational or cultural plan, the user must submit to the Federal Fisheries Agency a free-form report on the results of fishing and the use of aquatic bioresources (marine mammals).

Submission of a free-form report can undermine the quality of enforcement of the Procedure by the competent authority and lead to ambiguity in the information submitted by the user. The actual control of subsequent trade of the marine mammals removed for educational and cultural purposes is limited to submission of a free-form report on the results of fishing and the use of aquatic bioresources.

Current regulations do not pose any limits to the duration of the use of wild-captured marine mammals, nor prescribe any subsequent treatment of these animals once such limits expire or in other circumstances (closure or bankruptcy of the operator). Procedures for trading in captive-bred animals do not exist and the competent authority for controlling the keeping of animals and the legality of their origin has not been designated.

¹⁹ Excessive requirements to the persons exercising their rights – imposition of undefined, difficult and onerous compliance requirements to individuals and organizations.

The current Russian legislation does not mandate subsequent repatriation of such removed animals if they have been moved outside of Russia on tour or for other purposes. This creates real opportunities for abuse by users, especially for illegal sales of animals abroad, which is clearly the case for marine mammals actively exported to oceanariums in China.

Without a legally defined system of effective control over the specific uses of wildlife, the permitting of specific uses becomes a purely nominal exercise, despite the existence of prescribed procedures concerning wildlife trade and the issuance of specific use permits.

The identified corruption factors and normative gaps exhibit informal influence over the wildlife sector and can therefore induce a real increase in unauthorized and illegal trade in wildlife.

Main problems in the legal framework regulating wildlife trade

- Fragmentation of the current legislation governing specific aspects of wildlife trade and lack of systemic regulation of wildlife trade across all categories of wildlife²⁰.
- 2. Existence of corruption risk factors in normative legal acts.
- 3. Absence of procedures for tagging and identification of animals, their parts and derivatives entering trade to confirm their origin.
- 4. Legislative shortfalls that allow smugglers to avoid serious punishment (illegal movement of CITES specimens across the Eurasian Customs Union border is criminally punishable only for certain species and only for batches worth over 1 million rubles²¹ in most cases).
- 5. The existing Russian legislation is not fully adapted to addressing specific needs of the CITES implementation. There are virtually no controls over the trade in CITES specimens inside the Russian borders, which enables the development of trade in illegally imported specimens.
- 6. Loopholes related to breeding of CITES specimens and subsequent trade therein.
- 7. Loopholes related to sales of seized and confiscated wildlife and wildlife products.

²⁰ The CITES Secretariat has developed a model law governing the regulation of trade in all species listed in the CITES Appendices, in addition to species typically covered by environmental protection laws. https://cites.org/sites/default/files/eng/prog/Legislation/R-Model%20law.pdf

²¹ About USD 15,620.

3. CERTAIN ISSUES OF CITES IMPLEMENTATION IN RUSSIA

T.Yu. Skripnik

Overall coordination of CITES implementation is ensured by the Ministry of Natural Resources and Environment of the Russian Federation. The role of the CITES Management Authority is divided between the Federal Service for Supervision of Natural Resource Management (for all species except Acipenseriformes) and the Federal Fisheries Agency, for Acipenseriformes. The roles of the CITES Scientific Authority are assigned to the All-Russian Institute of Nature Protection and the Severtsov Institute of Ecology and Evolution (for all species except Acipenseriformes).

Interagency coordination issues

In addition to the stated regulatory issues, the following problems currently impede interagency coordination:

• There is no regular exchange of information between the CITES Management Authority and customs and other authorities regarding permit-based imports of CITES specimens.

Poor information exchange between law enforcement and customs entities can result in failures to develop and submit to the CITES Secretariat required reports on legislative, supervisory and administrative actions by the Russian authorities.

- The CITES Management Authority is randomly notified by law enforcement and other supervisory entities of the incidents of CITES specimen detection and detention to enable requisite decision-making, even though the CITES procedures and the Russian legislation warrant such notifications.
- Environmental protection officials are irregularly involved in the investigations of cases of poaching, transport and keeping of rare and endangered species.

Security of CITES certificates

Permits and certificates issued by the Federal Service for Supervision of Natural Resource Management for the export of CITES specimens are not reliably protected. An authorized signature and an official seal of the issuing organization are the only security features employed to safeguard against document fraud. CITES security stamps are not used.

4. REGULATORY ISSUES AND INTERGOVERNMENTAL COOPERATION CONCERNING TRADE IN CITES SPECIMENS WITHIN THE EURASIAN CUSTOMS UNION

A.L. Vaisman

Regulation of wildlife trade between member-states of the Customs Union of the EACU (Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia) warrants special attention. Since 2015, the Union provides for the free flows of goods, services, capital and labor between its members, as well as for the conduct of coordinated, mutually agreed or common policies in the various economic sectors. There is no customs control on the borders between the memberstates.

The member-states apply common customs tariffs and other regulatory tools in their trade with third countries.

At present, specific regulation of wildlife trade is focused on the movement across the Union borders, including that of the species listed by CITES and by the Red Data Books of the member-states²².

Transport of CITES specimens between member-states is not regulated in any way. It is assumed that such transport shall be conducted on common grounds according to applicable rules.

This creates a legal controversy – when a batch of CITES specimens is moved from one EACU member-state to another, it does not cross any customs border and no customs record is created of such movement. At the same time, each Union member is a party to CITES and is therefore obliged to follow CITES

²² The Board of the Eurasian Economic Commission (decision dated 21 April 2015 No. 30 "On nontariff regulation measures") approved the list of goods whose export from, or import into, the customs territory of the Eurasian Customs Union shall be subject to a permit procedure. Section 2.7 of the list comprises the CITES Appendices and is respectively updated after each CITES COP. Section 2.8 of the list comprises the endangered species listed in the Red Data Books of the EACU member-states. The same document of the EAEC Board approved two additional statutes on the decision-making regarding the export of wildlife from the EACU customs territory and relevant permitting/licensing procedures.

procedures requiring for any such trans-border movement to be based on a permit issued by the nation's CITES Management Authority and recorded by its customs. A customs stamp on a permit means that the transportation of a batch has been recorded, and its respective permit redeemed. With no customs posts within the Union, there is no control of the movement of CITES specimens between the Union's member-states.

This lapse of control entails an abrogation of the nation's international obligations under CITES and creates additional risks for the conservation of rare species. Two Union members (Kazakhstan and Kyrgyzstan) have extensive and loosely enforced borders with China, with its practically infinite demand for wildlife products used in traditional medicine. First, these include bear bile and paws, musk deer gland, medicinal plants (including rare ones such as ginseng, *Rhodiola rosea*, ephedra, etc.), deer antlers and genitals, bones and body parts of all big cats (tigers, snow leopards, leopards), saiga horns, large snakes, turtles, etc. The situation is further aggravated by China's developed breeding programs for certain CITES species. Captive-bred species are targeted for domestic markets, as well as for exports, including smuggling. The absence of controls over the transportation of CITES specimens between Russia, Belarus, Kazakhstan and Kyrgyzstan facilitates direct smuggling from China to the EU borders.

Certainly, the EACU is not the only customs and economic region facing the challenges of controlling CITES specimen movements within its borders. Similar problems occur within the EU and the regional organizations of South and Southeast Asia that maintain free trade or simplified customs regimes²³.

In all such situations, the problem has been addressed by establishing effective systems of direct information exchange regarding wildlife trade controls both at the domestic intersectoral level between the relevant competent authorities²⁴ and at the intergovernmental level. Setting up specific agreements and systems has allowed agency officials to freely exchange information shortcutting the constraints of what are frequently tedious bureaucratic procedures, which is particularly valuable for intergovernmental information exchange.

²³ The European Union Trade in Wildlife Information Exchange (EU-TWIX), the South Asia Wildlife Enforcement Network (SAWEN) and the Association of Southeast Asian Nations Wildlife Enforcement Network (ASEAN-WEN). Of relevance is also the experience of the US Fish and Wildlife Service that maintains a common information system for interstate wildlife trade.

²⁴ Customs, police, environmental protection, CITES management and scientific authorities, veterinary and phytosanitary agencies, prosecution and investigative bodies.

Information exchange systems for the EACU

Considering ample international experience with intergovernmental systems of information exchange and their observed effectiveness in tracking movements of CITES specimens (and other wildlife), the EACU would be well advised to consider establishing a similar interagency and intergovernmental system. With no controls over the movement of goods inside the common customs border (same as in the EU), something like a 'Eurasian Wildlife Enforcement Network' appears to be a necessity for the EACU, following the good experiences of ASEAN-WEN, SAWEN and especially EU-TWIX.

Setting up and running such an information exchange system would be fully in line with the Treaty on the Eurasian Economic Union (Article 23 "Information Exchange within the Union") and the Protocol on information and communication technologies and information exchange within the Eurasian Economic Union. The competent authorities responsible for CITES implementation in the EACU member-states recognize an acute need for a continuous information exchange within a common information system between customs, CITES management and scientific authorities, investigation and other government agencies in order to be able to enforce the movement of CITES specimens across the borders within the common customs area of the Union.

During the October 2018 meeting on the CITES implementation in the EACU, the delegation of Belarus called for an increased coordination between the CITES management authorities and customs in the member-states of the Union. They have specifically highlighted the urgency of coordination and joint solutions in the following areas:

- controlling Internet trade and traffic from the EU and other countries (wild capture, Internet sales, undocumented sales from official breeders, etc.);
- developing and approving a simplified procedure for the issuance of certificates for single and multiple cross-border movements of CITES specimens within the common customs space (similar to the EU procedure);
- developing a common database of issued certificates to prevent traffic (for CITES Appendices I and II);
- sharing of the respective 'blacklists' between the CITES Management Authorities and customs;
- strengthening cooperation of customs of the CIS and EACU member-states to combat smuggling (joint training sessions).

These actions were described as particularly relevant in the context of the new construction by China of a techno-park in Belarus with the expected arrival of about 650 thousand specialists from China.

TRAFFIC Europe-Russia has earlier called for the establishment of a similar system. In 2012, it developed a draft proposal to the CITES Secretariat for a wildlife enforcement network focusing on the information exchange between the customs agencies of the EACU member-states and other post-Soviet countries of Central Asia.

Developing and approving of the wildlife trade regulation (including CITES speciemens) in the EACU and establishing bodies at EACU level are important measures to ensure control over the wildlife trade within the EACU, as well as import into the EAEU and export of wildlife from the EACU.

PART II Analysis of Wildlife Trade

This part provides an overview of trade in reptiles, amphibians, birds and mammals. In order to assess the current market of wild animals, their parts and derivatives for each of the groups of species, experts have compiled a list of traded species and identified those whose trade can potentially threaten their existence in the wild. The tables that reflect the assessed levels of certain species' involvement in trade and the relevance of their analysis are provided in the Annex (*Tables 47–50*).

Respective sections of this review have been prepared with the use of the government statistical data including the Ministry of Natural Resources and Environment of the Russian Federation and its subordinate organizations, CITES trade databases, Customs database of foreign economic activities of Russia, data of the Federal Customs Service of Russia on the interception of consignments of wild animals, their parts and derivatives attempted to be illegally transported across the international border of the Russian Federation, media publications, interviews.

MAIN DESTINATIONS OF WILDLIFE TRAFFICKING ACROSS THE RUSSIAN PART OF THE CUSTOMS BORDER OF THE EURASIAN ECONOMIC UNION

Legend

	Exporter countries and importer countries of wild animals, their parts and derivatives
	Other countries
-	The Altay-Sayan Ecoregion and the Russian Far East*
Musk deer*	Species with their selected populations or groups actually or potentially engendered due to trafficking calling for response
	Animal species icon
2	Destination pointer for the animal species icon showing the region/exit point, transfer site for a given animal species
	Destinations of wildlife trafficking
ē	
	Icons to denote trade purposes and specimens

* Only the Russian regions included in the study

PART II Analysis of Wildlife Trade



teeth, claws,genitals, etc. antlers

falconry

horns

pet trade



1. TRADE IN AMPHIBIANS AND REPTILES IN RUSSIA

R.A. Nazarov

At present, 12 local and 75 imported species of amphibians and reptiles are regularly traded in Russia²⁵. Of them 31 species of reptiles (4 local and 27 exotic) are listed in the CITES Appendices, 4 species of amphibians are listed in the CITES Appendices.

1.1. GENERAL FEATURES OF THE MARKET OF REPTILES AND AMPHIBIANS

Keeping exotic animals in captivity and using their derivatives in traditional medicine are the main drivers of trade in amphibians and reptiles. Parts of certain species of native amphibians and reptiles from the Russian Far East are exported in countries of East and Southeast Asia for use in traditional medicine, as well as meal in restaurants.

Keeping of exotic animals in captivity has relatively recently gained popularity and scale in Russia taking its current shape by the early 2000's. European countries – in particular, Germany – have rendered the main influence on the formation of the Russian domestic market of exotic animals.

A retrospective analysis of trade in amphibians and reptiles indicates that domestic species of these animals have laid the foundation of terrarium collections in the Soviet Union. Nevertheless, by the end of the 1980's, several dozen exotic species of amphibians and reptiles have been introduced into the national herpetoculture.

In the beginning of the 1990s this process contributed to the formation and subsequent development of the new Russian market for exotic animals: legalized pet trading companies and private entrepreneurs appeared, while smuggling volumes also increased.

The total number of all kinds of collectors of amphibians and reptiles in Russia presently does not exceed 50,000 people. Of these, there are only

²⁵ See Annex (*Table 48*) for the full list of traded species.

about 500 collectors across the country who practice the keeping and breeding of rare species. However, the interest in captive keeping of exotic animals is steadily trending upwards each year. So is the number of animal exhibitions, private zoos²⁶ that host amphibians and reptiles. While they typically exhibit most common species and do not pose any direct threat to rare species, there is an indirect risk that seasonal exhibitions, traveling circuses and zoos might accidentally bring alien species into the habitats of aboriginal rare and endangered species²⁷.

Russia does not play a significant role in the illegal trade in amphibians and reptiles as its domestic market is much smaller compared to those in North America, Europe or Asia where the import and export of amphibians and reptiles is measured in hundreds of millions of dollars²⁸. Nevertheless, the interest in owning exotic pets continues to grow each year: numbers of amateurs and private collectors increase. In this regard, there is an emerging need for effective government regulation of trade in exotic animals. Russian terrarium owners and collectors have a minor role in the extraction of rare species from the wild in other countries. Only a small fraction of Russia's terrarium owners works with wild animals given the complexity of adapting them to captivity.

1.2. TRADE IN NATIVE CITES LISTED AMPHIBIANS AND REPTILES

CITES Appendices include five species of reptiles living in Russia. Giant salamander and Central Asian tortoise listed by CITES with Russia as their range country are not actually found there.

None of these species are targeted by catchers, with the exception of Greek tortoise and Amur softshell turtle. The relation of realized prices for such animals to their delivery cost and market demand makes them economically unprofitable.

No legal export of local amphibians and reptiles from Russia has been recorded in the WCMC database for 2012–2018. Tula Regional Exotarium has

²⁶ The legality of petting zoos has been discontinued by the 2018 Federal Law "On the responsible treatment of animals."

²⁷ There is a practice when, after the completion of seasonal work, such menageries release animals into the wild. Released animals can also be a source of various diseases.

²⁸ Several companies are engaged in regular legal imports of amphibians and reptiles, and a few private collectors occasionally receive animals from abroad. Therefore, the volume of Russian imports of amphibians and reptiles is incomparably lower than that of several hundred large American firms and dozens of European firms.

Table 1. Amphibian and reptile species from the CITES Appendices, for which Russia is listed as a range country

Common name, Latin name	CITES Appendix	Notes
Japanese giant salamander (Andrias japonicus)	I	Never sighted in Russia.
Leatherback turtle (Dermochelys coriacea)	I	Subspecies <i>D. c. schlegelii</i> , with only 13 reliable sightings in Russia.
Amur softshell turtle (Pelodiscus maackii)	II	This species is almost indistinguishable morphologically from <i>Pelodiscus sinensis</i> .
Greek tortoise (<i>Testudo graeca</i>)	II	Two forms occur in Russia (<i>T. g. nikolskii</i> and <i>T.g. pallasi</i>).
Central Asian tortoise (or Russian tortoise) (<i>Testudo horsfieldii</i>)	II	Not sighted in Russia (probably mistakenly listed due to one of its common names)
Javelin sand boa (<i>Eryx jaculus</i>)	II	Subspecies <i>E. j. familiaris</i> Eichwald, 1831 exists in Russia.
Dwarf sand boa (Eryx miliaris)	II	Endemic subspecies <i>E. m. nogaiorum</i> Nikolsky, 1910, exists in Russia, with unclear taxonomic status.

been actively engaged in official imports and exports of reptiles, including for research purposes, up until 2009–2010. Since then, documentation requirements have become more complicated and the exports have been discontinued.

According to the interception statistics of the General Directorate for Combating Smuggling of the Federal Customs Service of Russia, the most common destinations for the smuggling of CITES-listed lizards and tortoises include Czech Republic, Hungary and Germany. Russian terrarium owners have increased their participation in European exhibitions in order to sell or exchange their animals. Absence of appropriate permits renders their export operations illegal.

Greek tortoise (*Testudo graeca*)

Greek tortoise is the most vulnerable of all traded CITES species residing in Russia and listed in Red Data Book (trade in Greek tortoise is prohibited in Russia). Despite the fact that habitat destruction is a major threat to the survival of the species, trade in Greek tortoise warrants special attention. The taxonomy of its two isolated populations in Russia remains unsettled. Most experts distinguish two subspecies: *T. g. nikolskii* residing along the Black Sea coast of Krasdonar Territory and *T. g. pallasi* dwelling in Dagestan [Ananyeva et al., 2004; Tuniyev, Tuniyev, 2008; Dunayev, Orlova, 2012; Danilov et al., 2004; etc.].

Many researchers observe the species' population decline caused primarily by the disruption of its natural habitats as a result of economic activities [Bannikov et al., 1977; Kostitina, Galichenko, 1998; Mazanaeva et al., 2009].

A similarly alarming trend is the growing number of sales ads for Greek tortoises on generic e-commerce sites such as avito.ru or youla.ru. Specimens for sale are typically described in these ads as a 'land tortoise' and the species can only be defined from the attached photos. The selling price of a reptile varies from 1,000 to 5,000 rubles (US\$15–78). Such ads are most frequently originated from the Black Sea coast towns of Krasnodar Territory, i.e. from the tortoise's proper habitat.

Several hundreds of Greek tortoises are illegally traded every year. Experts consider this to be a significant volume that can adversely affect the species with a population of only a few thousand animals with a clearly negative trend. This warrants development of new mechanisms for combating illegal trade in reptiles through Internet especially given the ineffectiveness of law enforcement with respect to the advertisers who are not held accountable in practice.

Amur softshell turtle (Pelodiscus maackii)

The complexity of morphological diagnostics of this species prevents a comprehensive estimation of the real volumes of its trade without the involvement of special molecular studies. A recent molecular review of Chinese softshell turtle (*Pelodiscus sinensis*) has confirmed the Far Eastern turtle population to be a separate species.

Numerous Chinese restaurants represent one of the most serious threats to the population of Amur softshell turtles. The absence of external diagnostic signs hypothetically makes it possible to sell Amur softshell turtles under the guise of Chinese softshell turtles. Chinese softshell turtle is the most abundant turtle species widely farmed across Southeast Asia. Its meat is used as food in China, Japan and other Asian countries. Tens of millions of turtles are bred every year. Chinese softshell are bred and used in the preparation of several meals, e.g. soups. Some of them legally enter the pet market. 64 facts of illegal export of 257 live Amur softshell turtles to China were detected since 1998 to 2006 [Lyapustin, 2008]. However, since 2012 to 2018 no cases of illegal export of the Amur softshell turtle were recorded, no accurate data exist to document their wide-scale removal from the wild in the Amur region since 2012. Poor accessibility of *Pelodiscus maackii* combined with low prices makes such situations unlikely. This would require a serious study involving molecular diagnostics at all restaurant chains that offer turtle meat on their menus.

Javelin sand boa (Eryx jaculus) and dwarf sand boa (Eryx miliaris)

Two species of sand boa (*Eryx jaculus* and *Eryx miliaris*) are of certain interest to Russian and Western reptile collectors alike and have been traded quite often in the early 2000's. Present offers of these species are rather infrequent and their illegal catch for sale in Russia does not exceed a few dozen animals per year.

Published CITES export quotas show only Uzbekistan as an official exporter of *Eryx miliaris* and there have been no export quotas issued for *Eryx jaculus*.

The species group miliaris-tataricus-jaculus is taxonomically complex, and *E. m. nogaiorum* Nikolsky is an endemic subspecies for Russia with an unresolved taxonomic status, which can potentially make it highly attractive for amateur and commercial collectors. Furthermore, the use of sand boas in traditional medicine has gained popularity in the Central Asian CIS memberstates, thereby increasing manifold their illegal catch and consumption. This trend is not presently observable in Russia but cannot be counted out in the future.

Illegal trade in parts and derivatives of amphibians

Outside of the Russian Far East, illegal hunting or commercial harvesting of wild amphibians is quite rare in Russia because it is not profitable. In the Russian Far East, the analysis of illegal wildlife trade in 2007–2009 ranked amphibians and reptiles among the top 10 main groups of commercially traded wild animals [Lyapustin et al., 2010]. Smuggling of amphibians gained prominence in the Russian Far East due to frequent use of their parts and derivatives as food or components of traditional medicine in China, Korea, Vietnam and Japan. Illegal harvesting of amphibians, mainly Dybowski's frog (*Rana dybowskii*), black-spotted frog (*Pelophylax nigromaculatus*) and Siberian wood frog (*Rana amurensis*), for subsequent smuggling of their derivatives is most common in Primorsky Territory, southern parts of Amur Region and Khabarovsk Territory, Jewish Autonomous Region, i.e. in the areas neighboring China.

The main methods of illegal harvesting of amphibians are:

- 1) polyethylene fences with traps on migratory routes;
- 2) water poisoning in forest, grassland or other water bodies;
- 3) electrofishing.

Illegally traded amphibian specimens include:

- live animals and corpses;
- frog parts (hind limbs);
- dried meat of skinned frogs and dried skin of frogs and toads;
- dried and smoked roe of frogs, salamanders and newts;
- unfertilized frog roe (fatty substance);
- toad poison (secretory substance).

Dybowski's frog²⁹ and its derivatives are the most frequent smuggling targets [Lyapustin, Fomenko, 2010].

According to the customs data, over 21.2 kg of frog roe (an equivalent of 7,000 live frogs) has been smuggled in 2012–2018, at the total value of over 1.4 million rubles (~ US\$ 21,870). Furthermore, residents of the Chinese towns of Suifenhe and Hunchun carrying 528 dried frogs and 51 live frogs were detained in 2014 in the Land of the Leopard National Park.

²⁹ Experts note that currently the harvest of Dybowski's frogs in the Russian Far East based on permits is exterminating and jeopardizing it's populations. Most of the parameters necessary to assess the acceptable and sustainable level of catching frogs from the wild are uncertain, no special studies and populations monitoring have been conducted. Permits to catch Dybowski's frogs are issued without a qualified expert opinion on the allowable catching volume for each population. Dybowski's frogs are harvested for export to China, the harvest volume may exceed 4 million individuals per year (*editor's note*).

1.3. ILLEGAL AND LEGAL IMPORT OF CITES SPECIMENS

Smuggled specimens include Central Asian tortoises, sea turtles, box turtles, skins of broad-snouted caiman, Indian pythons, iguanas and other reptiles, salamanders. Intercepted batches can have an estimated value of several million rubles.

Despite the rather diverse geography of these illegal imports, Central Asian tortoise brought in from Kazakhstan accounts for the bulk of their volume and value.

Date	Interception point	Origination point	Quantity and composition	Estimated value
07.06.2019	Orenburg Region, Russia-Kazakhstan border	Kazakhstan	4,100 Central Asian tortoises	> 5,000,000 RUB (US\$ 78,125)
27.01.2017	Moscow Domodedovo Airport	Madagascar	285 reptiles and insects	< 1,000,000 RUB (US\$ 15,625)
13.05.2016	Border Station "Lokot" (train Almaty- Novosibirsk)	Almaty, Kazakhstan	389 Central Asian tortoises	~ 350,000 RUB (US\$ 5,470)
01.08.2016	Border Post "Warsaw Bridge" (Brest)	Unknown	34 reptiles	N/A
13.04.2016	Border Post "Ilek" (Orenburg Region)	Kazakhstan	8,253 Central Asian tortoises	< 8,000,000 RUB (US\$ 125,000)
03.10.2016	Moscow Domodedovo Airport	Hongkong (animals came from Borneo)	28 lizards, including Lanthonutus and two snakes	< 1,000,000 RUB (US\$ 15,625)
11.11.2016	Moscow Sheremetyevo Airport	China	5 Sea turtles	N/A
08.02.2016	Moscow Sheremetyevo Airport	Mexico	Yucatan box turtles Terrapena carolina yucatana and <i>Abronia sp.</i> – 43 animals	< 1,200,000 RUB (US\$ 18,750)
23.03.2016	Moscow Domodedovo Airport	Vietnam	28 lizards, 142 Central Asian tortoises	N/A
03.10.2015	Novosibirsk Region	Kazakhstan	2,000 Central Asian tortoises	> 2,000,000 RUB (US\$ 31,250)
17.06.2014	St. Petersburg Pulkovo Airport	Germany	180 frogs, snakes and lizards	N/A
18.09.2013	Bryansk Rail Station	Unknown	120 salamanders	50–70,000 RUB (US\$ 780–1,090)
26.05.2013	Border Post "Kulunda" (Altay Territory)	Kazakhstan	2,709 Central Asian tortoises	< 2,500,000 RUB (US\$ 39,070)

	Table 2. A list of selected	l interceptions of	smuggled exotic	animals (2013–2019)
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Central Asian tortoise (Testudo horsfieldii)

At present, up to 100,000 Central Asian tortoises are smuggled into Russia each year. Experts estimate that in Moscow alone about 300,000 Central Asian tortoises are kept as pets.

Only Uzbekistan still approves official CITES quotas for the export of Central Asian tortoises, while other Central Asian countries and Kazakhstan have discontinued this trade. In Uzbekistan, this species is also expected to be listed in its Red Data Book, in which case its quota for trade in wild tortoises would be canceled accordingly.

The present scale of this market (both legal and illegal) is significant. Uzbekistan officially exports up to 100,000 tortoises per year, mostly sourced from the wild. The price varies from US\$15 to US\$25 per tortoise (adults can be more expensive).

Illegal trade in Central Asian tortoises is facilitated by the absence of a system of animal identification and trade control: permits for animal trade are not linked to specific animals thus allowing data switch. Retail prices for fully documented Central Asian tortoises from Uzbekistan reach about 2,500 rubles (US \$39) per animal. Some pet trading companies have been known to purchase 10–15 legally documented tortoises for resale and then also buy smuggled tortoises (at 300–500 rubles or US\$ 5–8 per animal) to resell them 'legally' using the documents acquired with the legal batch.

Such business is highly profitable. The only way to reduce the volume of illegal trade in Central Asian tortoises is to tag all officially traded tortoises with microchip implants. This measure would need to be legislatively mandated as a condition of import. It would also help trace the animals to their specific areas of origin.

The lack of an established practice of handling confiscated live animals is another acute problem that is not limited to Central Asian tortoises alone but applies to all categories of wildlife. Competent authorities can hand over a confiscated illegal batch of live tortoises to a zoo, upon its consent, for sheltering while the documents for animal release into the wild are being prepared. But finding an organization ready to take in the animals is a complicated process that does not always bring acceptable result. There is no special public funding for these purposes. In the absence of a system of organizations with the status of specialized animal shelters or centers of animal rescue and rehabilitation, confiscated animals tend to be kept in unsuitable conditions without proper care and veterinary help.

The practice of releasing confiscated tortoises into the wild frequently ends up with their release into unsuitable habitats, during an unsuitable season – leading to their death. Development of an effective mechanism for the return of illegally imported Central Asian tortoises to their natural habitats would require improving the regulatory framework and strengthening cooperation with the immigration and customs authorities of Kazakhstan and Uzbekistan.

Considering the significant and growing smuggling volumes of Central Asian tortoises, anti-smuggling measures and other issues such as those related to the release of confiscated animals into the wild need to be reviewed and discussed with the authorities and experts in order to define the necessary regulations and improve their implementation.

The U.S. and Europe are the main destinations of trade in Central Asian tortoises as they receive the bulk of their legal shipments. Russia receive relatively small volumes of such shipments purchased by rank-and-file individuals rather than by specialized collectors.

Importer	Number of animals
China	14,306
Germany	72,714
Spain	18,150
France	22,023
U.K.	72,229
Italy	123,632
Slovakia	13,700
U.S.	195,793
Russian Federation	5,018

Table 3. Relative volumes of legal import of Central Asian tortoise from Uzbekistan, 2012–2017

Import of other amphibians and reptile species into Russia

According to the WCMC, El Salvador, Madagascar, Indonesia and Uzbekistan together account for 66 percent of the recorded import of live reptiles into Russia.

According to the CITES database, Russia imported over 740,000 specimens of reptiles in 2012–2016. The import of large body parts and derivatives was dominated by skins of captive-bred crocodiles shipped mostly from South Africa, Italy and Singapore (specimens originating from South Africa and Zimbabwe).

Species group / Prevailing taxa	Number of animals
Lizards (Sauria)	7,596
Chameleons (Chamaeleonidae)	1,176
Geckos (Gekkonidae)	1,269
Iguanas (Iguanidae)	3,149
Varanids (Varanidae)	1 530
Snakes (Serpentes)	3,939
Boas (Boidae)	605
Pythons (Pythonidae)	3,243
Crocodilians (Crocodylia)	1,211
True crocodiles (Crocodylidae)	1,111
Alligatorids (Alligatoridae)	964
Turtles (Testudines)	6,097
Central Asian tortoise (Testudo horsfieldii)	5,018

Table 4. Import of live reptiles into Russia, 2012–2016

Table 5. Import of reptile parts and derivatives into Russia, 2012–2016

Types of CITES specimens	Number of body parts and derivatives		
All types of CITES specimens	748,966		
Stuffed bodies	166		
Large skin goods	2,702		
Leather/skins	16,307		
Prevailing taxa for leather/skins:	-		
True crocodiles (Crocodylus)	11,238		
American alligator (Alligator mississippiensis)	1,306		
Caimans (Caiman)	409		
Skulls	78		
Tails	62		
Trophies	569		
Small parts and derivatives	578,126		
Таха	Number of animals	Exporter	Source
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Amphibia	954	Madagascar, Suriname, Peru	Wild
Mantella	662	Madagascar	Wild
Dendrobates	145	Suriname	Wild
Others (Scaphiophryne, Agalychnis, Ambystoma, Dyscophus, Epipedobates,	147	Madagascar, Suriname, Peru	Wild
Hoplobatrachus, Phyllobates, Ranitomeya)		Germany, USA	Captivity

According to the CITES database, in 2012–2016 Russia imported 954 live amphibians, mostly from Madagascar. No legal imports of amphibian body parts and derivatives were recorded by CITES in that period.

2. TRADE IN BIRDS OF PREY

E.G. Nikolenko, I.V. Karyakin

Illegal trade is a major factor of population decline for several vulnerable species of birds. Even though almost all species of large birds of prey and owls belong to the category of rare species, they are being actively traded both within Russia and internationally.

The impact of trapping, usually illegal, on the population of almost all species of birds of prey (except large falcons) is quite small – it is comparable with their natural mortality and is much lower than other negative factors associated with human activities, such as death on power lines, from collision with transport and man-made structures. However, this trade still requires control, since at any time, a certain rare species may become popular and its trade pressure will increase, or its population status might otherwise change so much that the removal of even one individual will become critical.

This review focuses on the large falcons – they are most vulnerable to the impacts of trade and require special control as their popularity in the Arab countries has led to a major decline of their population size and range. To make understanding of the situation of trapping and trafficking of Russian falcons more clear, this section provides information on trafficking falcons also in CIS countries and EACU member states where the falcons migrating from Russia are being trapped.

Status of Birds of Prey

Forty-six species of diurnal birds of prey (*Falconiformes*) and 17 species of owls (*Strigiformes*) are resident in Russia and potentially subject to trapping and trade [Koblik, Arkhipov, 2014] – this excludes accidentals, irregular nesters, or species whose resident status in Russia is not determined. All these species are listed by CITES (4 species in Appendix I, the rest in Appendix II). The Red Data Book lists 27 species (*Table 7*).

Table 7. List of birds of prey resident in Russia (after Koblik, Arkhipov, 2014), their status in the Red Data Book of Russia and CITES and their normative value for wildlife damage assessment (Methodology, 2008)

	Common and scientific name	Red Data Book Status	CITES Appendix	Normative value
	Orde	r Falconiformes		
1	Lesser kestrel Falco naumanni	3	II	RUB 50,000 (US\$ 781)
2	Common kestrel Falco tinnunculus	-	II	RUB 5,000 (US\$ 78)
3	Red-footed falcon Falco vespertinus	3	II	RUB 5,000 (US\$ 78)
4	Amur falcon Falco amurensis	-	II	RUB 5,000 (US\$ 78)
5	Merlin Falco columbarius	-	II	RUB 5,000 (US\$ 78)
6	Eurasian hobby Falco subbuteo	-	II	RUB 5,000 (US\$ 78)
7	Saker falcon Falco cherrug	1	II	RUB 600,000 (US\$ 9,377)
8	Gyrfalcon Falco rusticolus	2	l	1,100,000 17191
9	Peregrine falcon Falco peregrinus	1, 3	I	RUB 600,000 (US\$ 9,377)
10	Western osprey Pandion haliaetus	3	II	RUB 25,000 (US\$ 390)
11	European honey bustard Pernis apivorus	-	II	RUB 5,000 (US\$ 78)
12	Crested honey bustard Pernis ptilorhynchus	-	II	RUB 5,000 (US\$ 78)
13	Red kite <i>Milvus milvus</i>	1	II	UB 50,000 (US\$ 781)
14	Black kite Milvus migrans (incl. lineatus)	-	II	RUB 5,000 (US\$ 78)
15	Pallas's fish eagle* Haliaeetus leucoryphus	2	II	RUB 100,000 (US\$ 1,562)
16	White-tailed eagle Haliaeetus albicilla	5	I	RUB 100,000 (US\$ 1,562)
17	Steller's sea eagle Haliaeetus pelagicus	3	II	RUB 100,000 (US\$ 1,562)
18	Himalayan vulture* Gyps himalayensis [fulvus]	-	II	RUB 5,000 (US\$ 78)
19	Griffon vulture Gyps fulvus	3	II	RUB 75,000 (US\$ 1,172)
20	Monk vulture Aegypius monachus	2	II	RUB 100,000 (US\$ 1,562)
21	Bearded vulture Gypaetus barbatus	3		RUB 100,000 (US\$ 1,562)



Table 7 Continued (1).

	Common and scientific name	Red Data Book Status	CITES Appendix	Normative value
22	Egyptian vulture Neophron percnopterus	1	II	RUB 5,000 (US\$ 78)
23	Short-toed snake eagle Circaetus gallicus (=ferox)	3	II	RUB 50,000 (US\$ 781)
24	Western marsh harrier Circus aeruginosus	-	II	RUB 5,000 (US\$ 78)
25	Eastern marsh harrier Circus spilonotus [aeruginosus]	_	II	RUB 5,000 (US\$ 78)
26	Pied harrier Circus melanoleucos	-	II	RUB 5,000 (US\$ 78)
27	Hen harrier <i>Circus cyaneus</i>	-	II	RUB 5,000 (US\$ 78)
28	Pale harrier Circus macrourus	3	II	RUB 10,000 (US\$ 156)
29	Montagu's harrier Circus pygargus	-	II	RUB 5,000 (US\$ 78)
30	Levant sparrowhawk Accipiter brevipes [badius]	3	II	RUB 10,000 (US\$ 156)
31	Chinese sparrowhawk Accipiter soloensis	-	II	RUB 5,000 (US\$ 78)
32	Japanese sparrowhawk Accipiter gularis	-	II	RUB 5,000 (US\$ 78)
33	Eurasian sparrowhawk Accipiter nisus	-	II	RUB 5,000 (US\$ 78)
34	Northern goshawk Accipiter gentilis	-	II	RUB 5,000 (US\$ 78)
35	Grey-faced buzzard Butastur indicus	3	II	RUB 10,000 (US\$ 156)
36	Common buzzard Buteo buteo	-	II	RUB 5,000 (US\$ 78)
37	Long-legged buzzard Buteo rufinus	3	II	RUB 10,000 (US\$ 156)
38	Upland buzzard Buteo hemilasius	-	II	RUB 5,000 (US\$ 78)
39	Rough-legged buzzard Buteo lagopus	-	II	RUB 5,000 (US\$ 78)
40	Lesser spotted eagle Aquila pomarina [clanga]	3	II	RUB 25,000 (US\$ 390)
41	Greater spotted eagle Aquila clanga	2	II	RUB 25,000 (US\$ 390)
42	Steppe eagle Aquila nipalensis [rapax]	2	II	UB 50,000 (US\$ 781)
43	Eastern imperial eagle Aquila heliacal	1, 2	I	RUB 100,000 (US\$ 1,562)
44	Golden eagle Aquila chrysaetos	3	II	RUB 300,000 (~US\$ 4,690)

Table 7 Continued (2).

	Common and scientific name	Red Data Book Status	CITES Appendix	Normative value
45	Booted eagle <i>Hieraaetus pennatus</i>	-	II	RUB 5,000 (US\$ 78)
46	Mountain hawk-eagle <i>Nisaetus nipalensis</i>	3	II	UB 50,000 (US\$ 781)
	Ord	er Strigiformes		
47	Western barn owl <i>Tyto alba</i>	-	II	RUB 5,000 (US\$ 78)
48	Indian scops owl Otus bakkamoena	-	II	RUB 5,000 (US\$ 78)
49	Eurasian scops owl Otus scops	-	II	RUB 5,000 (US\$ 78)
50	Oriental scops owl Otus sunia	-	II	RUB 5,000 (US\$ 78)
51	Snowy owl Nyctea scandiaca	-	II	RUB 5,000 (US\$ 78)
52	Eurasian eagle-owl Bubo bubo	3	II	UB 50,000 (US\$ 781)
53	Blakiston's fish owl Ketupa blakistoni	2	II	100,000
54	Brown owl Strix aluco (except nivicolum)	-	II	RUB 5,000 (US\$ 78)
55	Ural owl Strix uralensis	-	II	RUB 5,000 (US\$ 78)
56	Great grey owl Strix nebulosa	-	II	RUB 5,000 (US\$ 78)
57	Boreal owl Aegolius funereus	-	II	RUB 5,000 (US\$ 78)
58	Little owl Athene noctua	-	II	RUB 5,000 (US\$ 78)
59	Eurasian pygmy owl Glaucidium passerinum	-	II	RUB 5,000 (US\$ 78)
60	Northern hawk-owl Surnia ulula	_	II	RUB 5,000 (US\$ 78)
61	Brown hawk-owl Ninox scutulata (japonica)	-	II	RUB 5,000 (US\$ 78)
62	Long-eared owl Asio otus	-	II	RUB 5,000 (US\$ 78)
63	Short-eared owl Asio flammeus	-	II	RUB 5,000 (US\$ 78)

* - Vagrant species, i.e. regular or periodic accidentals that are very rarely spotted in Russia.

Purposes of Trade in Birds of Prey

Birds of prey are commercially traded for the following purposes:

- Falconry as the cultural heritage of various peoples: falcons (saker falcon, gyrfalcon and peregrine falcon) are valued in Arab countries, golden eagles – in Kazakhstan and Mongolia, hawks and large falcons have been traditional hunting birds in European Russia. Presently, due to the rarity of large falcons and the prohibition on their trapping, European and Russian falconers use hawks and small falcons to hunt (kestrel, hobby, merlin).
- 2) Keeping live birds as home pets and in zoological collections such as zoos, minizoos, young naturalist clubs, etc.
- 3) Stuffed animals and handicrafts for interior decorations and for stuffed animal collections. All possible species are used in the taxidermy market, but large birds of prey and owls are most highly valued.

Impacts of Commercial Trade on the Populations of Birds of Prey

At present, illegal trade is negatively affecting only two species of birds of prey – saker falcons and gyrfalcons. The main pressure on their populations comes from their illegal trapping for falconry in the Arab countries.

2.1. INTERNATIONAL MARKET FOR BIRDS OF PREY

Falcon trade for falconry: development and transformation of the falcon market

Interest in falconry in the Gulf States has climbed rapidly in the late 1970's as their economies started growing steadily. The falcon market has been effectively renewed by the sheikhs from Arab countries. The main species used for falconry are peregrine falcon, saker falcon and gyrfalcon whose breeding areas are outside the Arab countries, while the winter migration paths of saker falcons and peregrines have always passed through their territory. Saker falcons are in highest demand due to their hunting behavior features.

Saudi Arabia, Qatar, Bahrein, Kuwait and the UAE are the main importers of wild-trapped falcons [Fox et al., 2003].

Houbara or MacQueen's bustard (*Chlamydotis undulata, C. macqueenii*) and tolai hare (*Lepus tolai*) have been traditional game for hunters from Arab countries. As the hunting pressure drove houbara's population down, hunters from Arab countires started going to other countries where this species still occurs during migration and where its smaller relative, little bustard (*Tetrax tetrax*), resides. In the 1990's, the sheikhs have been renting vast wilderness areas in Kazakhstan for exclusive falconry. They were also going to Uzbekistan and Turkmenistan where permits for the falconry were much less onerous.

In the late 1990's, falcon markets flourished in all Arab countries including the UAE, a CITES signatory. Afghanistan, Pakistan and Iran were the main exporters, the latter two supplying falcons 'legally.' Pakistan alone was exporting about 1700 falcons every year [Riddle, Remple, 1994], primarily saker falcons, even though their total nesting population in Pakistan was estimated at 10 pairs [Clarke, after Fox et al., 2003].

At present, Iran, Pakistan, China and Mongolia are the main legal suppliers of falcons – saker falcon, peregrine and Barbary falcon (*Falco pelegrinoides*), with the former species' absolute market dominance. Legal exports from Kazakhstan, Uzbekistan and Russian are negligible on this background, even though Russian breeding centers have been regularly supplying saker falcons for the last 20 years. The legal and illegal exports of falcons from Russia comprise about 10 percent of the total volume of falcon trade in the Arab countries: Russian breeding stations annually supply not more than 200 falcons, while the export of wild-trapped birds is estimated to be at the level of 300–400 saker falcons, as many gyrfalcons and not more than 100 peregrines. However, trapping is significantly damaging the populations of saker falcons and gyrfalcons. Saker falcons nesting in Russia make up a high share in the total falcon exports as most Russian birds are trapped on migrations. Gyrfalcons of Eurasia nest and migrate mainly within the territory of Russia, thus making this country a de facto monopolist in gyrfalcon exports.

Peregrines occur widely across Eurasia and their migration routes traverse the continent from north to south and into Africa where they can be trapped unhindered for the needs of the falconers from Arab countries.

Estimates for 2000-2005 indicate that up to 5,000-5,500 falcons were being imported into the Gulf States every year. About half of them were of legal origin (of which about 2,000 birds per year were coming from breeding centers and 500-600 birds were wild-trapped with permits), while the remaining 2,500–3,000 birds were being illegally trapped at nesting sites and in flight and smuggled in [Fedotkin, Sorokin, 2006]. However, these figures must be underestimated, since only the analysis of falcon admissions in falcon hospitals assumed an annual import of at least 9,000 birds [Fox et al., 2003].

The demand for falcons in the Arab countries for the needs of falconry remains high, while the supply is getting significantly depleted – at least in the case of saker falcons and most valuable gyrfalcons. As the more beautiful birds from the wild become rarer, their value and popularity among buyers grow further up. The resource depletion is one of the primary causes of the market transformation. Since the early 1990's some of the sheikhs from Arab countries started being concerned that the supply of falcons from the wild could be exhausted soon. The UAE initiated a falcon breeding program, with the first breeding centers having been set up in the UK targeting sales to the Arab countries. Changes in the market are also driven by breeding stations (mainly European) that supply thousands of captive-bred falcons and hybrids to the Arab markets and promote new trends in falconry. It took a while though to persuade the buyers from Arab countries of the better qualities of captivebred falcons against their prejudice to the contrary. Nevertheless, the buyers from Arab countries are only forced to switch to captive-bred birds (including hybrids) under the pressure of the increasing short supply of wild birds. To date, it is not uncommon that captive-bred falcons are posed as wild-trapped at falcon markets.

2.2. DOMESTIC MARKET FOR BIRDS OF PREY

Private ads placed in commercial papers of the Altay-Sayan region and in the Russian internet exhibit random nature of this trade: such ads come from individuals who either sell an old stuffed bird or want to make money by selling a bird they found, or private taxidermists offer their products and services. One can also find ads selling captive-bred or wild-picked chicks. Overall, not more than a few dozen such ads are placed annually across the country (*Figure 4*).

Since recently, social networks gained importance as a medium for private trade in birds of prey, small artisanal workshops also use them. Many online groups are dedicated to taxidermy (live birds are of least importance there). Groups offering stuffed birds and 'shaman' handicrafts operate in practically all regions of Russia, they also offer bird parts. Their audience varies from a few dozen to several thousand people. Trading in social networks is executed covertly, through private messages, and is not confined to specific geographies



Figure 4. Dynamics of the market of live and stuffed birds in private on-line ads in 2005–2008 and 2014–2015

as such workshops typically ship their products by mail. It is almost impossible to gauge the volume of such online trade.

Online stores have become a serious platform. Now virtually all vendors maintain websites that advertise their products, and some also sell them online. These sites openly advertise stuffed birds of the species listed in the Red Data Book including high value species.

Therefore, the Russian domestic market of birds of prey features a small but steady trade, with a gradual upward trend.

The main market participants include: (1) falconers (in Russia they typically use hawks and small falcons), (2) pet bird lovers, (3) hunters for whom live and stuffed birds are a byproduct of their main trade, (4) taxidermists who earn their living from stuffed birds, (5) lovers of hunting trophies and shamanic amulets who buy stuffed birds and handicrafts as interior decorations, amulets and gifts. Overall, this is not a large group of people and such market does not have a noticeable effect on bird populations (e.g., if compared with shooting birds of prey for fun).

2.3. ILLEGAL TRAPPING AS A SOURCE OF TRADE IN BIRDS OF PREY

The species listed in the Red Data Book can be removed from the wild only in exceptional cases and with a permit issued by the Federal Service for Supervision of Natural Resources (typically at the request of rehabilitation centers for birds in distress). There are no procedures for the removal and trade of birds of prey that are not listed in the federal Red Data Book – these matters are delegated to the regional environmental protection authorities where virtually no procedures have been established to handle them (as evidenced by the prevailing practice of rehabilitation centers and official inquiries to several regional authorities).

2.3.1. History of illegal trapping of falcons in Russia

Late 1970's marked the crash of saker falcon populations in the European Russia that many experts attribute to the intensive trapping of the birds at their wintering sites in Egypt, Syria and Libya. As the local wintering population got extirpated over the 15-year period, Syria moved from being one of the main saker falcon suppliers on the Arab markets to one of its smallest exporters. With their vast experience in the local trapping of saker falcons, Syrian trappers started moving their craft to other countries including Russia.

After a four-year hiatus, by the end of the 1980's, the export became highly organized: the nationals of Syria, Pakistan and some of the Russians were taking out of Russia up to a thousand birds per year. Bird mortality during transportation was very low, smugglers were mostly professional, and they were doing their best to deliver the birds alive and well. As the interdictions of falcon smugglers became more frequent in the early 1990's, they caused a wave of publications that exposed high prices of smuggled falcons reaching \$50,000-\$100,000 per bird. In the conditions of total poverty of the rural population, these publications triggered a tremendous reaction, and in the 1990's, the 'broad masses' of people joined the falcon trapping plundering the nests of birds of prey ranging in size from kestrels to eagles. Adult male harriers were hit hardest as they were being sold as white gyrfalcons.

Spontaneous export attempts continued. But in the hands of amateurs, most of the birds died during transport. Maximum damage to falcon populations has been done at that time.

2.3.2. Impact of trapping on falcon populations

Saker falcon (Falco cherrug)

It is now internationally accepted that falconry trade is one of the main causes of the saker falcon population decline [Kovach et al., 2014].

The mid-20th century population of 9,000 nesting pairs in Russia and 10,000 pairs in Kazakhstan has been proven to drop to 2,000 pairs in Russia and 1,500 pairs in Kazakhstan in 2010–2012 [Karyakin, Nikolenko, 2013; Nikolenko et al., 2014a; Karyakin et al., 2015]. Today, the densest nesting groups of saker falcons are preserved only where adult birds are mostly sedentary or migrate over short distances. Specifically, the birds from the Tuva and Khakasia populations are partially sedentary and partially move south (to Mongolia and China) for the winter, while the birds from the Altay Mountains (both of the Russian and Kazakhstan sides) migrate over Kazakhstan. As is typical of all falcons, the first-year juveniles disperse over greater distances and respectively get trapped more frequently.

Insignificant migration of saker falcons is still observed across the Arabian Peninsula where the hunters from Arab countries trap migrant birds, on average about 20–35 saker falcons per year in 2003–2013 [Shobrak, 2014]. It is not known for sure which nesting groups are being affected by this trapping – there have been only 4 recorded cases of trapped falcons that have been ringed in Kazakhstan. According to M. Shobrak's simulation, saker falcons migrating across the Arabian Peninsula can go extinct within 3 to 15 years from now if the current removal pressure remains.

While there are still sizable groups of saker falcons in Mongolia and China, the birds from Russia and Kazakhstan remain highly attractive for falcon trappers. The species' Russian population has an enclave in the Altay-Sayan Region, and the Kazakh one – in the Aral-Caspian Region [Karyakin, Nikolenko, 2013], where adult birds are effectively sedentary.

Long-term monitoring data for the Altay-Sayan Region indicate a 26-percent decline in the population size over a 12-year period (2003–2014). The region's population of saker falcons in 2014 was estimated at 1,355 (1,237–1,473) pairs. This did not include the Altay Territory where the population dropped by 67 percent causing regularly nesting groups to disappear and limiting the current population estimates to 39 (34–45) sporadically nesting pairs. In the Minusinsk Hollow (Khakasia and the south of Krasnoyarsk territory), saker

falcon population has declined by an estimated 55 percent during the same period.

Saker falcons are trapped selectively, with the heaviest pressure being put on groups residing in the forest-steppe, namely in the steppe pine forests and the foothills of the Altay Territory and in the Minusinsk Hollow of Khakasia, as evidenced by the geography of 'falcon interdictions.' The Siberian phenotype (*F. ch. saceroides*) used to dominate here until recently, while the nesting groups dominated by the Mongolian phenotype (*F. ch. progressus*) remain more stable and even show a modest increase [Karyakin *et al.*, 2014].

Smuggling interdiction statistics show that 284 saker falcons have been seized over a 10-year period (104 in Russia and 180 in other CIS countries). Assuming a 10-percent success rate for smuggling interdictions, one can estimate an annual export of about 300 saker falcons from the CIS countries.

If one were to further account for the bird mortality during trapping and transportation, the overall annual trapping could be several times higher, up to 1,000 birds, or even 2,000 and more if migratory trapping is added. In 2011, the total size of the Russian and Kazakhstan populations of saker falcons was estimated at 3,500 nesting pairs [Karyakin et al., 2015]. Successful pairs make up 55 percent of the engaged ones (as estimated in the Altay-Sayan Region), with an average of 2.73 chicks per successful pair [Karyakin et al., 2014]. Consequently, 3,500 pairs can annually produce 5,200 chicks, of which only about 4,000 juveniles would start flying. Hence, about half or more of the annual increment of the Russian and Kazakhstan population of saker falcons is removed.

Gyrfalcon (Falco rusticolus)

Gyrfalcons are resident in the tundra, with one part of their population being sedentary and another part migrating in the winter in Siberia, Russian Far East and the north of European Russia all the way down to the border with Mongolia and China. Gyrfalcon populations are generally not sufficiently studied in Russia, with no published data on their distribution density and population sizes in various regions, nor on their population dynamics. Gyrfalcon nesting data have been collected from the Kola Peninsula [Korepov, 2015], Bolshezemelskaya Tundra, southern part of the Yamal Peninsula [Morozov, 2011; Mechnikova *et al.*, 2011; Mineev, Mineev, 2011; Pokrovskaya, Tertitski, 2011], Taymyr, Kolyma. The population has been best studied in Kamchatka [Lobkov et al., 2007; Lobkov *et al.*, 2011]. It is known that gyrfalcons nest relatively evenly across the entire stretch of tundra from the Kola Peninsula to Chukotka and their total population in Russia is estimated at about 3,500–5,000 nesting pairs, which is slightly less than half of the world's total [Potapov, Sale, 2005; Potapov, 2011]. Kamchatka accounts for about 500 (330–660) nesting pairs, or about 13 (7–19) percent of the entire gyrfalcon population in Russia. The Kamchatka population experienced a 2.5-fold decline from 1980 to 2010 [Lobkov *et al.*, 2011]. About 10-15 percent of the total population is estimated to be illegally trapped annually and the trapping is reportedly growing from year to year.

Smuggling interdiction statistics demonstrate an apparent increase in the number of interdiction cases and the number of seized gyrfalcons as well as an increased share of gyrfalcons in the total flow of falcon interdictions and seizures, except for the last few years.

While there were multiple interdiction cases in Kamchatka and Chukotka, surprisingly few such interdictions took place in Magadan and Yakutia [Lyapustin, Fomenko, 2015] and none in Krasnoyarsk Territory, Tyumen Region and in the north of European Russia. The tundra is more easily accessible in the western regions than in Kamchatka or Chukotka, gyrfalcon population densities are sufficiently high in the west and gyrfalcon trapping is clearly taking place there (as discussed in private chat groups of falconers), but there are no interdictions on highways or on trains or in airports. This can be partly explained by objective reasons. One is that Kamchatka Peninsula attracts the fall and winter migrations of gyrfalcons from the north, including from Chukotka and even Alaska, with the higher occurrence of rare and more valuable light-morph birds [Lobkov *et al.*, 2007] that are much less abundant in the western populations [Sorokin, 2015]. It makes the trapping of gyrfalcons more productive and profitable in Kamchatka than in the more westerly parts of the Russian Arctic.

Assuming the same 10-percent success rate for smuggling interdictions [Nikolenko, 2007], the total number of gyrfalcons exported from Russia can reach on average 400 birds per year. With the added factor of mortality during trapping and transportation, the trapping numbers can be several times higher, i.e. 1,000 birds or more. This would comprise over one-third (30–50 percent) of the total number of first-year juveniles considering the total Russian population of 3,500–5,000 nesting pairs (a 10-year old estimate) and their success rate of 2 flying juveniles per pair [Lobkov *et al.*, 2007].

Peregrine falcon (Falco peregrinus)

Of all falcons, peregrines are relatively less affected by illegal trade. The species has a wide range and a sufficiently big population size estimated at about 100,000–500,000 mature birds [BirdLife International, 2016]. Russia's population is estimated at 10,000–20,000 pairs [Nikolenko et al., 2014b].

Peregrines nesting in the temperate and arctic parts of the range take wide migrations: from Europe to Africa, from North Asia to South Asia and Indonesia. Populations that nest in the south are typically sedentary. The use of satellite transmitters in the recent migration studies [Dixon *et al.*, 2012; 2015] allowed to analyze migration 'corridors' of different subspecies of peregrines. It showed that the tundra peregrine (*F. p. calidus*) nesting in the tundra from Arkhangelsk Region through Central Siberia spends winters in the belt stretching from Turkey to Myanmar; the Gulf States become a winter destination for the birds nesting on the Yamal Peninsula.

The data on peregrine trapping during its migration across the Arabian Peninsula [Shobrak, 2014] shows that the average trapping reached 110–190 peregrines per year over a 10-year period (2004–2013) and is increasing steadily. The simulated trend indicates that peregrines migrating across Arabia will go extinct in about 100 years at the current rate of removals [Shobrak, 2014].

The illegal export of peregrine falcons from Russia is estimated at about several dozen birds per year. The bulk of peregrine trapping, including from the Russian nesting populations, takes place at their wintering sites. Nevertheless, the Russian population of peregrines tends to increase, in particular, in Siberia, and in the Volga-Urals region. Unfortunately, there are no regular observations of the northern populations, the birds of which are most valuable.

Thus, it can be argued that, despite a certain interest in peregrines among falconers, the flow of birds from the CIS countries is still small. This is mainly due to the ease of trapping birds during migration and wintering, including in the Arab countries. Peregrines are typically exported from Russia in batches with saker falcons and gyrfalcons; there is no indication that falconers anywhere in Russia specialize exclusively in peregrines. However, the absence of peregrine seizures in the European part of Russia (where it is widespread, unlike gyrfalcon and saker falcon) does not mean there is no peregrine trapping here – the demand from Russian breeding centers and falconers still exists and is most likely satisfied by birds from within Russia.

Demand for different morphs

Phenotype selectivity is one of the features of falcon trade. While it does not exhaust the population completely, it significantly undermines its genetic diversity, thus eroding the species' adaptive potential.

Falcon prices directly depend on the bird's size, strength and exterior. Falcon competitions regularly take place in the Arab countries, with top prizes fetching hundreds of thousands of dollars.

Each species has specific populations that include the most commercially valuable birds. For gyrfalcon, it's the white-morph birds that are still abundant only in Chukotka and Kamchatka. For peregrine, it's the light-morph and largest subspecies (*F. p. calidus* Latham 1790) residing all across the Eurasian tundra. For saker falcon, it's the large-morph birds of the western subspecies (*F. ch. cherrug*) nesting in the eastern part of the range in the steppe valleys and foothills of the Altay-Sayan and Baikal regions. It also includes the unique dark-morph saker falcon initially considered to be a separate species, 'Altay falcon' (*Falco altaicus*) (Sushlin, 1938), then a gyrfalcon subspecies (*F. r. altaicus*) (Dementyev, 1951), and further a separate subspecies of saker falcons [Dementyev, Shagdarsuren, 1964; Stepanyan, 1990; Pfeffer, 2009]. It has now been demoted to a morph (the so-called 'Altay phenotype') that appears in the zone of intergradation of the three subspecies of saker falcons at the juncture of Altay, Tuva and Mongolia [Karyakin, 2011].

Falconers from Arab countries have originally used the western subspecies of saker falcon (*F. ch. cherrug*) given that the migratory routes of the western populations are crossing the Arabian Peninsula. Populations of this subspecies have been most heavily damaged, with the 90 percent reduction in the population size and range over the last 50 years. Altay saker falcon has been effectively extirpated over the last 20 years within the Altay-Sayan region [Karyakin et al., 2015; Nikolenko, Karyakin, 2016]. Mongolian saker falcons, a smaller and less attractive subspecies, are reportedly taking over the vacated habitats there.

2.3.3. Trafficking and poaching interdictions

The most accurate information on illegal trapping and transportation of birds of prey can be derived from the statistics of the so-called 'falcon interdictions,' i.e. interdictions of trappers, traffickers and other individuals involved in illegal falcon trade. The database of falcon interdictions for 2006–2017 shows 133 incidents in five countries: Russia (92 incidents), Kazakhstan (28 incidents), Kyrgyzstan (3 incidents), Uzbekistan (2 incidents) and Ukraine (8 incidents) (*Figures 5 and 6*) [Nikolenko, 2018]. The preceding decade (1996–2005) registered 63 such incidents [Nikolenko, 2007].

The number of incidents in the Far East has been steadily prominent since 2008. Numerous cases were recorded in 2009–2010 and in 2014–2016, many of them in Siberia and in European Russia. The same years featured a high incidence of cases in other countries, peaking in 2017 in Kazakhstan; interdiction rates have also grown in Ukraine in 2016–2017.

An overall increase in interdictions from the late 1990's through 2010 was taking place notwithstanding the numerous environmental protection reforms; it can be primarily attributed to the general growth of public attention to the issue driven largely by the nongovernmental environmental protection actors. Systematic anti-smuggling campaigns were taking place in those years: WWF Russia published numerous guidance documents [Nikolenko, 2015], saker falcon became a flagship species of the UNDP-GEF project "Biodiversity conservation in the Altay-Sayan Ecoregion" implemented by the Ministry of Natural Resources and Environment in 2006–2011 (when several workshops were conducted for the customs and other authorities and a number of methodological documents were published).

As a result, the professionalism of staff dealing with falcon interdictions has increased, and their work has drawn public attention. The regions that were most active in smuggling prevention (Far East and Altay-Sayan) were standing out in the number of falcon interdictions and the number of cases brought to court.

Media attention is also important. The press services of the Ministry of Interior, Federal Security Service, Federal Customs Service readily disclose information on successful interdictions and regularly share their operational footage. Over the years, media interest in this topic has been growing, and the stories about interdictions in the regions are increasingly picked by various news aggregators.

However, the most visible pattern in Figure 5 relates to the changes in the Russian regulations. The growth of interdictions in 2008–2010 coincides with the adoption of the Methodology of damage calculations [Methodology..., 2008]. An abrupt drop in 2011–2013 immediately followed the enactment of the common



Figure 5. Number of falcon interdictions by year and by region (n=133)



Figure 6. The map of falcon interdiction cases in Russia and neighboring countries

Customs Code of the Eurasian Customs Union in July 2010 and the concomitant exclusion of Article 188 from the Criminal Code of the Russian Federation – not a single interdiction took place in the European Russia in 2011–2013. 'Ecological police' was disbanded during the same time as part of the overall reform in the Ministry of Interior and another set of environmental protection functions was delegated from the federal to regional authorities.

The situation improves again after the amendments to the Criminal Code of the Russian Federation in July 2013 that introduced the notion of high value species. Falcon interdictions peaked in 2015, most of them in Siberia and the European Russia. In 2016, there were numerous interdictions in Siberia and the Far East but significantly fewer in the European part; the same trend continued in 2017 while interdictions in Siberia dropped to zero. Interdictions of foreigners increased from an average of 2.6 incidents per year in 2006–2015 (25.2 percent of total) to 7.5 incidents per year in 2016–2017 (50 percent of total).

A dramatic decline in the number of gyrfalcon seizures in Kamchatka in 2017 (while potential trappers were still being interdicted) probably reflects the results of several years of operations of the interagency commission (see below) that led to the disruption of a large organized criminal group. In this context, the zeroing out of saker falcon seizures in Siberia and no interdictions in 2017, conversely, reflect the inefficiency of actions against illegal falcon trapping – as evidenced by unsuccessful interdictions in the fall of 2016 in Khakasia (the trappers have not been charged).

Species composition of bird seizures

From 2006 to 2017, in Russia a total of 677 falcons were seized in the 81 bird seizure cases (including 155 falcons in 14 cases in 2016–2017), in CIS countries 337 falcons were seized in the 40 bird seizure cases.

The average annual number of falcons seized in the last two years was 1,74 times more than that for the previous ten years – 1,48 times more in Russia (52,2 birds per year in 2006–2015 and 77,5 birds in 2016–2017). In other CIS countries annual number of falcons seized increased even more – doubled in Kazakhstan, increased threefold in Uzbekistan, increased fourfold in Kyrgyzstan, and increased 4.5 times in Ukraine.

Figure 7 illustrates the shifts in the species composition of the overall flow of falcon seizures over the entire study period (1996–2017). In last two years,

compared to the previous decade, the share of gyrfalcon has decreased (from 53 to 45 percent), the share of saker falcon has increased (from 40 to 53 percent), and that of peregrine has dropped threefold (not exceeding 2 percent). These shifts are primarily driven by the decrease in gyrfalcon seizures in Kamchatka in 2017 and the increase in saker falcon seizures in Central Asia.



Figure 7. Species composition of bird seizures in 1996-2017



Figure 8. Number of seized birds by species and by year in 2006–2017

The total number of falcon seizures has been growing for all three species irrespective of variations from year to year (*Figure 8*). It peaked in 2016 when 207 falcons were seized – with the species recorded for 178 of them (92 gyrfalcons and 82 saker falcons). There have been noticeably fewer bird seizures in 2017 in Russia and Central Asia alike (Uzbekistan and Kyrgyzstan being the biggest contributors in 2016). But the drop was more conspicuous in Russia – for the first time in twelve years, only 5 gyrfalcons were seized in Kamchatka.

The fate of seized birds

The fate of seized birds is accurately recorded in only one-third of all seizure cases: 12.6 percent of seized falcons either died within the first few days after the seizure, or were already dead at seizure, 67.6 percent were released (the Far East seizures), and 19.8 percent were kept for rehabilitation with their further fate unknown.

Recently, more and more importance is given to the fate of the seized birds: in the Far East, they are released almost immediately after a veterinary examination or a short rehabilitation; in other regions, where seizures typically occur during transportation, birds need a longer rehabilitation period and survivors have to wait for the summer to get released. Birds have to be 'trained' in a big flight cage for their successful release – only two bird rehab centers have recently installed such aviaries.

Nevertheless, there have been cases of successful release of seized birds that were moved from Moscow and other cities back to their natural habitats. But in general, these are still quite rare.

Agencies involved in the detection and interdiction of violations

In 2006–2015, most interdictions were carried out by the Ministry of Interior officials (line police units and traffic police). Two times fewer cases (23) were delivered by the Federal Security Service, of which 15 were in the Far East, mostly in Kamchatka. In the last two years, the Federal Security Service involvement has increased by one-third, while that of the police has reduced by half. But the overall list of the involved agencies has not changed much. The officials of the Federal Service for Supervision of Natural Resource Management were altogether not involved in the last two years (while three such cases were recorded in 2006–2015). The share of interdictions by the Border Service has doubled, as well as those by the environmental protection



Figure 9. Agencies in Russian Federation involved in falcon interdictions in 2006–2017

authorities – mostly due to interdictions in Kamchatka. The average number of interdictions grew from 9.7 to 14 per year (*Figure 9*).

The experience of Kamchatka Territory is of great importance to the subject. Rare species protection is under the mandate of the Kamchatka Agency of Forest Management and Wildlife Protection (a state environmental protection body) that continuously interacts with other authorities to prevent smuggling and transportation of the rare species. An interagency commission for the coordination of activities to prevent illegal removal and export of wildlife and wildlife products was set up in December 2011. Since then, the commission has been routinely planning and executing measures to detect, interdict and prevent wildlife crime.

Seasonality of trapping

The bulk of illegal falcon trade caters to falconry clients from Arab countries who use saker falcons to hunt for houbara bustards. Therefore, most trappers try to sell saker falcons right before the start of the hunting season, i.e. in September–October. This puts the main pressure on the mass migration of young falcons and the beginning of wide migrations of adult birds (second half of August to early September). In fact, falcon trapping continues from early July until the first snow. The intensity of falcon trapping is lowest in October–November when all falcon markets virtually suspend their operations, the only trapping during this time is for sheltering or breeding. Individual vendors can also trap adult birds to order during the nesting season, but this has lately become an exception.



Figure 10. Statistics of falcon interdictions by month in 2006–2017

The analysis of falcon interdictions (*Figure 10* A–D) shows the interdictions in the Far East building up in the early fall and peaking in November-December, which correlates well with the seasonal migration of gyrfalcons from north to south. Gyrfalcon shipment interdictions go on in Kamchatka till January.

Siberia has two conspicuous peaks – one in September during the trapping at saker falcon nesting sites, and another in November during or immediately prior to the shipment of birds. This relates to the flow of falcons being trafficked from the Far East via Siberia and the trapping of falcons on migration through South Siberia.

Interdictions in the neighboring countries are spread evenly between August and December – they reflect the trapping on nesting sites in Central Asia as well as transit shipments of Russian birds through these countries. Interdictions in Ukraine can equally relate to the trapping of locally nesting birds and the transit from Russia.

The seasonal pattern in the European Russia is somewhat different from those in the other regions: interdictions peak in September and October, slow down by December and come to a standstill in January when both trapping and trafficking are in full swing in the Far East and abroad. One might assume that it is not the illegal bird flow but the rigor of enforcement that goes down in the country's three biggest airports during that time.

Groups and individuals involved in falcon trapping

As falcon populations were getting depleted in the early 2000's and attempts to earn quick money on illegal falcon trade were proving futile, accidental trappers left the scene while professionals remained (in 2000–2008, their number was estimated at 50–60 people in Russia); the latter can be divided into three categories that are still relevant:

- 1) trappers that supply falcons for sale to falcon markets or for re-sale to smugglers with stable trafficking channels;
- 2) trappers providing falcons to order directly for the sheikhs;
- 3) trappers employed by falcon breeding centers.

The first category is the most numerous and poorest group of trappers. It comprises Russian nationals that have contacts with falcon resellers for export and the nationals of Arab countries, mainly Syrians, who themselves trap and deliver falcons to the final buyer. These trappers cause maximum damage to falcon populations, since in pursuit of a good annual income many of them continue trapping falcons from the moment chicks take off and until the snow settles.

The second category includes trappers directly hired by the sheikhs or employed by their breeding centers. They always act by stealth to trap a bird of a target phenotype, with the help of locally hired aides, and then take it out of the country by themselves using the simplest route. This category usually applies to falcon interdictions of trappers from Arab countries at airports carrying one or two falcons at a time. The third category comprises Russian nationals or, less frequently, Europeans hired by European breeding centers. They cater to the needs of falcon breeding stations to maintain healthy stock and improve gene pool. As Russian breeding centers gain productivity, they are possibly capable of meeting this European demand, including by sourcing some of the birds from the wild – but such cases have not yet been captured by falcon interdictions. An interdiction of a Bulgarian smuggler in 2015 with 25 peregrine eggs that he personally collected from nests on the Yamal Peninsula seems to indicate that wild falcons are still in demand in Europe.

The composition of trapping teams and the overall organization of falcon business has been changing during the last five years. The analysis of falcon interdictions involving organized criminal groups for which criminal cases were investigated has revealed that, starting from 2010-2012, this business has been controlled by several organizers who divided the spheres of influence and possibly the territories. During these years they have established a network of aides who hire and train trappers, organize the trapping, transportation and cross-border smuggling of falcons.

In the early 2000's, experts counted 15–20 professional trapping teams or individual trappers operating in the saker falcon nesting areas in the Altay Republic, and not more than 3–4 teams in each of the neighboring regions (Khakasia, Irkutsk Region, Buryatia). According to expert surveys [Nikolenko, 2007], the number of such teams has halved between 2001 and 2005. Recent interdictions show that one 'boss' controls the operations of several teams in a region (if there are still enough birds there), and the same people might be moving from region to region during different trapping periods.

Falcon interdiction statistics also reveal the composition of itinerant trappers. In 2006–2015, Syrian nationals made up a vast majority (more than 75 percent) of the 49 foreigners interdicted in Russia and four adjacent countries [Nikolenko, 2015]. In 2016–2017, interdictions involved in almost equal numbers the nationals of Syria, Ukraine, Kazakhstan and UAE (each about 20 percent, n=24); the nationals of Qatar and Armenia were also implicated. Interdictions in Russia (n=16) involved primarily the nationals of Syria (5), Ukraine (5) and Kazakhstan (5), while all UAE nationals were interdicted in Kazakhstan and Kyrgyzstan (their number increased from 1 in 2006–2015 to 6 in 2016–2017).

Hotspots of falcon trapping

The northern part of Kamchatka Peninsula and Chukotka have been the primary trapping areas for gyrfalcons since the early 2000's.

The Altay foothills, Southwest Altay and western parts of Tuva have been the leaders of saker falcon trapping in the 2000's, followed by the Tuva Basin, Minusinsk Hollow and the steppe and forest-steppe basins of the Baikal region (*Figure 11*).

Since 2010, as saker falcons disappeared from many areas, their trapping zoomed in on the remaining enclave habitats of the valuable falcon phenotype in Khakasia, Altay Republic and the steppe basins of the Baikal region. The trapping in Tuva appears to have discontinued following its legalization in Mongolia where falcons migrate in the winter from the south of Russia. Strict regulations of foreigner presence in the international border zone also deter itinerant trapping operations. It is telling that, since 2010, the only remaining inhabited nests of saker falcons in the Kosh-Agach district (southern part of the Altay Republic) can be found in the 5-kilometer zone along the international border that is strictly enforced by the Border Guards.

Falconry needs in peregrines are met by their trapping on winter migrations. Peregrine trapping in Russia presently takes place only in tandem with saker falcons and, to a lesser degree, with gyrfalcons.



Figure 11. Areas of wide-spread illegal trapping of falcons: 1 – gyrofalcons; 2-3 – saker falcons

Analysis of court cases related to illegal trapping and trade

Court records for 2014–2017 include 12 cases on 'falcon interdictions' under Articles 226.1 and 258.1 of the Criminal Code of the Russian Federation, of which:

- ten cases have been completed with convictions,
- one case is pending in court,
- another case is not yet brought to court.

Over the same period, 43 'falcon interdictions' have been recorded in Russia, including 40 incidents with bird or egg seizures. Activities of 4 organized criminal groups involved in falcon trapping and transportation were suppressed at the same time in Kamchatka, Buryatia, Omsk and Moscow Regions. Two cases led to convictions of airport staff in addition to transporters themselves. In some instances, several interdictions were brought into one case as they involved one organized criminal group.

It should be noted that court websites post information for only a subset of cases, furthermore, not more than 20 percent of court cases examined under the articles of interest have their sentences published (*only the wording of a court sentence allows to identify the case subject in a court database*).

2.4. LEGAL TRADE IN BIRDS OF PREY

2.4.1. Breeding of birds of prey in zoos and breeding centers

Legal wildlife trade starts with its legal removal from the wild or with breeding. The Ministry of Natural Resources and Environment of the Russian Federation does not permit removal of rare species from the wild for commercial trade. The most accurate information on the operation of legal breeding centers is available from "Birds of Prey in Zoos and Breeding Centers", a yearbook of the Eurasian Regional Association of Zoos and Aquariums (EARAZA) regularly published since 1993 [Birds of Prey ..., 2012; 2013; 2014; 2015; 2016; 2017].

The dynamics in the zoo and breeding centers collections over a six-year period (2011–2016) were used for this review.

Table 8. Trade in birds of prey captive-bred in the zoos and breeding centers of Russia, 2011–2016 (Birds of Prey ..., 2012; 2013; 2014; 2015; 2016; 2017)³⁰

Species	20	Ξ	201	12	20	13	50	14	20	15	20	16	Six-yea	r total
	Offspring	Sold	Offspring	Sold	Offspring	Sold	Offspring	Sold	Offspring	Sold	Offspring	Sold	Offspring	Sold
Black kite	9	9	ı	ı	ı	ı	2	2	ı	ı	ı	ı	~	œ
White-tailed eagle	-	-	ī	ı	4	T	4	4	4	ī	2	T	15	5
Steller's sea eagle	-	0	-	T	-	I	2	-	ო	I	ო	T	14	٢
Griffon vulture	I	0	ı	I	-	I	2	-	I	ı	ı	I	m	-
Monk vulture	-	0	ı	ı	-	ī	-	-	I	ı	ı	ī	m	-
Northern goshawk	2	-	14	13	30	30	16	15	32	20	41	T	138	79
Common buzzard	I	ı	ı	ı	ო	I	2	2	I	ı	ı	I	2	2
Upland buzzard	I	ı	ı	ı	ო	ī	4	4	I	ī	2	T	6	4
Steppe eagle	2	I	-	T	2	-	۰,	←	2	I	2	T	10	2
Golden eagle	9	2	ო	2	2	I	-	2	I	I	I	I	12	9
Eastern imperial eagle	I	ı	ı	ı	5	T	I	Т	I	ı	ı	T	2	0
Saker falcon	316	279	250	247	432	348	122	124	361	276	373	501	1854	1775
Gyrfalcon	19	œ	16	14	19	6	11	5	13	50	e	4	81	90
Peregrine	47	21	27	6	31	14	9	ო	27	6	22	11	160	67
Gyrfalcon Saker falcon	2	4	ო	I	4	ი	I	I	ო	2	2	T	14	15
Peregrine Saker falcon	2	ъ	4	4	ъ	∞	I	I	I	2	2	I	13	19
Gyrfalcon Peregrine	2	ī	-	-	പ	∞	I	Т	I	ī	0	T	œ	б
Merlin	I	I	ı	ı	ı	T	I	I	-	-	0	T	-	-
Western barn owl	13	2	1	12	11	9	11	œ	16	6	20	I	82	37
Eurasian scops owl	I	ī	ო	I	ı	ī	2	T	ო	ī	2	T	10	0
Eurasian eagle-owl	6	9	10	9	23	24	19	17	28	25	29	30	118	108
Snowy owl	16	-	4	œ	18	10	13	13	2	11	24	15	80	58
Little owl	I	I	ı	I	2	с С	I	I	I	I	ı	I	2	ო
Ural owl	2	4	ო	÷	~	I	I	б	റ	I	4	2	19	16
Great grey owl	4	~	-	T	ო	T	e	ო	I	~	14	19	25	24
Long-eared owl	I	∞	2	I	9	10	8	I	-	з	9	7	23	28
Short-eared owl	I	-	ī	I	I	I	I	-	I	I	ı	I	0	2

For each species, only those organizations were included in the count that combined sales and regular offspring, i.e. excluding trade in birds received from ²⁰ Table 8 shows the numbers of delivered offspring and the birds sold, without deaths (i.e. only birds that went to other zoos, organizations or individuals). other organizations. Not all trade listed in the table is commercial - zoos normally breed birds for maintaining a healthy stock rather than for sale.

According to this data, commercial batches of large falcons (including hybrids) are being bred in 7 breeding centers across Russia and at the Moscow Zoo; Northern goshawk – in 3 breeding centers and at the Krasnoyarsk Zoo; Eurasian eagle-owl, White owl and Western barn owl – in two breeding centers and at the zoos of Moscow, St. Petersburg, Ivanovo and Penza.

Data received from 7 breeding centers indicates that their domestic sales of large falcons exceed exports (*Table 9*). Their breeding stock includes 200–300 saker falcons, about 100 gyrfalcons and 40–60 peregrines. It should be noted that sales have grown over the last 7 years: threefold for saker falcons, twofold for gyrfalcons, by 40 percent for peregrines. Breeding stock is also increasing. The release of saker falcons and peregrines into the wild has decreased from 52 birds in 2011 to 31 birds in 2017.

	2011	2012	2013	2014	2015	2016	2017	Total	
Saker falcon (F. cherrug)									
Export	73	70	86	122	108	173	147	779	
Domestic trade	78	61	124	145	166	175	87	836	
Released into the wild	47	40	38	21	20	22	28	216	
Gyrfalcon (F. rusticolus)									
Export	0	0	0	3	0	1	0	4	
Domestic trade	5	8	18	6	5	14	28	84	
Released into the wild	0	0	0	0	0	0	0	0	
Peregrine (F. peregrinus)									
Export	0	0	0	0	0	2	0	2	
Domestic trade	4	6	6	2	7	9	5	39	
Released into the wild	5	3	0	2	9	2	3	24	
Hybrids									
Domestic trade	10	9	4	8	12	10	23	76	

Table 9. Trade in large falcons captively bred in seven Russian breeding centers,2011–2017

Therefore, a relatively small but stable legal market of birds of prey exists in Russia in response to both domestic and foreign demand. However, it cannot presently displace illegal trapping for the needs of the falconers from Arab countries. The experience of foreign (mostly European) breeding centers showed that while they have been supplying thousands of falcons annually for two decades to the Arab markets, the trapping pressure on the wild populations has not decreased in any noticeable way. Any increase in the supply of captive-bred falcons will only decrease their price without affecting the demand for wild-trapped birds. The reason lies in the prejudice of the falconers from Arab countries (sheikhs) that any falcon bred in captivity and raised by humans would never be equal to a wild falcon in hunting skills.

It should be also noted that the falcon gene pool is getting impoverished over years in the breeding centers because of unavoidable close breeding, notwithstanding the existing bird exchange programs. Breeding centers depend on a 'fresh influx of blood' from the wild, i.e. wild-trapped birds, to sustain a strong breeding stock. As it is virtually impossible to legally obtain a trapping permit, such demand is also contributing to the illegal bird trapping from the wild.

Breeding and rehabilitation centers

Breeding centers started spreading in Russia in the 1990's, thus triggering a new falconry boom. Some hunting companies started offering falconry with hawks, eagles and falcons in addition to conventional hunting packages. Falconry has been steadily gaining popularity as evidenced by hunting forums and ads for bird sales inside Russia.

According to the Ministry of Natural Resources and Environment of the Russian Federation, 10 breeding centers operating in Russia are officially registered with the Federal Service for Supervision of Natural Resource Management. Two of them belong to state entities, one is co-managed by state and non-state entities, and the rest are private. According to experts, the cost of growing a saker's chick is about US \$200-300, prices for falcons of ordinary color range from US \$400-500 for sales on the domestic market to US \$1,000-3,000 for sales abroad. The price of the gyrfalcon is slightly higher than the price of the saker, and the price of peregrine falcon is lower. The price of rare morph birds can reach US \$5,000-8,000.

Rare bird breeding centers typically state the conservation and replenishment of the rare bird gene pool through reintroduction into the wild and the promotion of falconry as their primary objectives, as well as the rehabilitation of wounded and weakened birds including those seized by authorities.

Breeding centers receive bird breeding permits at the Federal Service for Supervision of Natural Resource Management. Some breeding centers did not receive such permits, i.e. they officially keep birds 'for themselves.' Experts indicate that these breeding centers sell falcons only to 'their own' community, i.e. their participation in the international trafficking in birds is highly unlikely. None of the Russian breeding centers has submitted itself to a certification by the CITES Secretariat. The Ministry of Natural Resources and Environment of the Russian Federation has not yet developed a procedure for the registration of, and reporting on, captive-bred birds; no register of the issued breeding permits is maintained.

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At present, four breeding centers (Altay Falcon, Galichya Gora, Kholzan and Vitasfera) regularly announce their releases of captive-bred falcons into the wild. Starting from 2017, Vitasfera supplies saker falcon chicks of the Altay morph for placement in the wild falcon nests in the Altay-Sayan region (a joint project with Sibecocenter and the Altay-Sayan Regional Office of WWF Russia).

In addition, Russia currently has 11 rehabilitation centers for birds of prey that are not related to breeding centers. Typically, they are charities that are often not registered and their operations are based on volunteering and the free will of people to help the birds.

Rehabilitation activities have never been allocated any state funding, and it remains to be decided who is responsible for covering the costs of sheltering the seized birds, even though the investigating authorities usually do not allow releasing these birds until the investigation is completed (the release on the spot or after a minimum rehabilitation is only practiced in Kamchatka).

Breeding centers and ornithology experts often end up bearing the costs of sheltering of the seized birds. The Kamchatka Center for Rehabilitation of Rare Bird Species (a private noncommercial partnership) provided major assistance in the rehabilitation of seized gyrfalcons in Kamchatka in 2001–2007. The Kamchatka Branch Nursery of the Pacific Geographical Institute³¹, originally established under the international project for captive breeding of Aleutian cackling goose, has been lately also used for sheltering and rehabilitation of rare birds.

³¹ The institute belongs to the Far Eastern Branch of the Russian Academy of Sciences.

It is practically impossible to determine whether a breeding centers is used to conceal illegal sheltering of wild-trapped birds. So far, competent authorities have uncovered the illegal activities of only one breeding centers – Filin (the North Caucasus center for breeding rare species of birds) – that posed wild-trapped birds as captive-bred ones. At the same time, most experts agree that the breeding centers that maintain a reasonably large breeding stock of falcons would not have incentives for engaging in the legalization of wild-trapped birds; the breeding centers that do so are usually short-lived. For example, the Dront breeding centers (Novosibirsk Region) that was found to be involved in illegal falcon trade in the 1990's went out of business at the end of the 1990's when the wave of massive trapping of Altay falcons dropped.

2.4.2. Legal export and import of birds of prey

Captive-bred falcons are officially exported from Russia. But imports are also significant, including those of large falcons. The analysis of trade in live birds reveals important trends and discrepancies.

Large falcons

In 2011–2016, Russia exported 1,654 large falcons in 60 batches and imported 157 falcons (*Figure 12*). The birds exported by the seven Russian breeding centers (the country's main suppliers of legal falcons) account for less than half of that amount (*see Table 9*).

Saker falcon was the main exported species of falcons (1,462 birds in 39 batches). Its biggest flows (in commercial and private purposes) went to the UAE (1,012 birds in 14 batches), Qatar (280 birds in 5 batches) and Bahrein (43 birds in 2 batches). Smaller batches went to Bulgaria (28 birds), Iran (16), Lithuania (12), Turkmenistan (8), Czech Republic (8), Kazakhstan (7) and Slovakia (2). Twenty-eight birds went to Saudi Arabia (4 batches in 2012 and 2013), with Mongolia, Pakistan, Iran and Syria recorded as the countries of origin, apparently a reexport of the previously imported birds.

Imports into Russia in 2011–2013 recorded 39 saker falcons in 10 batches: 26 birds from the UAE, of which 25 were originating from Russian breeding centers; 12 birds from Saudi Arabia that were sourced from the wild in China, Iran, Kazakhstan, Mongolia, Pakistan and Syria. The number of birds imported from Saudi Arabia (12 birds) was much smaller than those exported there (28 birds) in the same period.

Only 3 gyrfalcons were exported from Russia between 2012 and 2015 (all of them to Saudi Arabia) and one of them (in 2012) was declared as sourced from the wild in Russia (which is legally impossible, because removal of gyrfalcon





Figure 12. Official export (A) and import (B) of large falcons, 2011–2016

from the wild is prohibited in Russia). Significantly more gyrfalcons (47 birds in 16 batches) were imported into Russia, including 35 birds from the UAE (in 2012, 2013 and 2015) that mostly originated from the European breeding centers. Documents for 8 gyrfalcons imported in 2015 stated that they were sourced from the wild in the UAE and shipped to Russia for reintroduction. Twelve birds in 4 batches were imported from the European breeding centers for commercial use and breeding.

Russia was exporting peregrines almost every year in 2011–2016, a total of 121 birds in 10 batches, primarily to Qatar (57 birds) and the UAE (53 birds). Only 5 peregrines were exported to Saudi Arabia, 2 of which as a reexport, the other 3 were declared as sourced from the wild in Russia (removal of peregrine falcon from the wild is prohibited in Russia). Only two peregrines were imported into Russia (in 2012–2013): one from the UAE and one from Saudi Arabia.

The export of hybrid falcons in 2012–2013 recorded 68 birds in 9 batches: of them, 7 birds went from a Russian breeding centers to the UAE and the rest were a reexport to Saudi Arabia; 8 birds among these hybrids were shown as 'sourced from the wild' in various countries, which is impossible. The import of hybrids in the same period recorded 69 birds in 13 batches sourced from the breeding centers in the UAE (64), Saudi Arabia (4) and Spain (1). Again, one can notice a discrepancy in the import and export of the reexported falcons.

The above data shows a large export flow of falcons to Arab countries (mostly, to the UAE and Saudi Arabia), marked as sourced from Russian breeding centers and as reexports, i.e. previously imported, some of which – sourced from the wild (while it is known that only Mongolia used to issue official quotas for falcon trapping and the commercial trapping was also discontinued there in 2012). The import flows are much lower than the exports (even if reexport is included), and the countries of origin of birds do not match. This is a direct indication of the lack of proper controls on the part of the Federal Service for Supervision of Natural Resource Management (Russia's CITES Management Authority) and the absence of an electronic database that could easily track discrepancies in the documentation of batches.

A significant flow of imported falcons, including hybrids sourced primarily from the European breeding centers, can have two explanations: either illegal falconry (falconers from Arab countries are known to target bustards in their hunt – while both Great bustard and Little bustard are listed in the Red Data Book of the Russian Federation), or concealment of the illegal export of wild-trapped falcons. According to experts, a common method of exporting wild-trapped birds is to pose them as previously imported birds from breeding centers, with counterfeiting of irremovable bird rings.

It should be noted that import and reexport stopped in 2013.

Firstly, starting from 2013, illegal transactions with falcons became criminal offenses irrespective of the value of the batch.

Secondly, two high-profile falcon interdictions took place in 2012: (1) on November 28, 2012, a Saudi prince attempted to illegally transport 49 falcons for hunting, including 9 birds documented as wild-trapped in Russia; the birds were seized, but the prince could not be detained due to his diplomatic status [Events, 2012]; (2) on November 6, 2012, a big batch of falcons (29 birds including hybrids) documented as imports from the UAE originating from European breeding centers was seized in Khakasia. The investigation proved that 10 falcons were switched for juvenile birds from the wild [Events, 2012]. The trial in Khakassia in the spring of 2013 did not take place, since after six months in detention, the defendant – a citizen of the UAE – was released on bail and escaped. These factors must have zeroed out the import-reexport of falcons in 2014–2016.

In September 2013, the Ministry of Natural Resources and Environment of the Russian Federation and the UAE Bird Conservation and Breeding Center signed an MOU on collaboration in biodiversity conservation, according to which gyrfalcons seized in the UAE shall be returned to Russia for reintroduction into the wild. In 2015, eight gyrfalcons sourced from the wild were returned to Russia in the framework of this memorandum [Program of conservation ..., 2013].

It is worth mentioning that the official export and import of falcons in Uzbekistan and Kazakhstan is much higher than that in Russia. In 2011–2016, Kazakhstan exported 1,823 falcons (221 batches), of which 447 were sourced from the wild (even though falcon trapping is officially banned in Kazakhstan). The UAE was the primary export destination, and less so – Saudi Arabia; several batches went to other countries (Argentina, Russia, Germany and Czech Republic). Seven batches of peregrines (310 birds) and eight batches of saker falcons (137 birds) were recorded as 'sourced from the wild' and exported to the UAE for their 'reintroduction into the wild' (which makes no sense). Kazakhstan also regularly imported saker falcons,

a total of 546 birds in 8 batches from Qatar, UAE and Saudi Arabia, as well as 44 gyrfalcons and 45 hybrids in 2015 and 2016.

Legal falcon trade in Uzbekistan is even higher, with 2,973 birds imported and 2,313 birds exported in the six-year period. Each year, export and import permits are issued for one batch of several hundred falcons without specifying the species and with the UAE listed as the country of origin. In 2016, one such batch (644 birds for import and 660 birds for export) was documented as hybrids.

Juvenile wild-trapped birds are known to be imported as individually owned birds. A very thorough examination of the birds and the rings attached to them is required to prove the fact of fraud.

Northern goshawk (Accipiter gentilis)

This species is also in high demand. Experts believe its subspecies *A*. *g*. *albidus* residing in the northeast of Russia to be particularly valuable due to its big size and light color.

In 2011–2016, Russia exported 148 northern goshawks in 25 batches, mostly for commercial and personal purposes (23 batches). Two batches (9 birds) were exported to Bulgaria for breeding. A single batch of 2 birds to Saudi Arabia recorded their source from the wild. The rest were sourced from breeding centers and went to the following countries: Germany (58 birds), Uzbekistan (32), Austria (21), Bulgaria (14), Czech Republic (13), UAE (5), Turkmenistan (3).



Figure 13. Official export of northern goshawk from Russia, 2011–2016

The only import in six years was a single batch of 10 goshawks – a reexport from Uzbekistan originating from a Russian breeding centers.

The export of goshawks has grown 4–5-fold in the study period (*Figure 13*) – from 8 birds in 2011 to 42 birds in 2015 and 31 birds in 2016.

Therefore, northern goshawk is involved in legal trade. The birds are exported, mostly from breeding centers, to Europe, Central Asia and Arab countries. The species is a popular bird for falconry and its legal exports grow from year to year. Its increased demand is incentivizing illegal trapping, too.

Other species

Legal exports and imports of other species do not warrant much attention from the standpoint of trade and its impact on wild populations.

In the six years of the study period, only 27 export batches and 19 import batches were recorded – all concerning such specimens as carcasses, skins, cuts, samples, meat, feathers. These were primarily pre-convention samples for education and research purposes or samples of tissues and feathers for research.

Only 103 live birds of 10 species other than large falcons or northern goshawk were exported. Five of them were of foreign origin.

Most of the batches were exported for zoos and exhibitions (17), for breeding (1 Stellar's sea eagle to Germany) and for personal use (2 golden eagles to Thailand).

Sixty-one live birds of three species were exported commercially – long-legged buzzard, brown owl and great grey owl – all sourced from breeding centers. They went to Uzbekistan and UAE.

Sixty-four live birds of 15 species were imported, primarily for zoos, breeding centers and exhibitions. Noteworthy was the import of 21 golden eagles from Mongolia for research, as well as that of several species from Uzbekistan: 1 monk vulture and 2 long-legged buzzards sourced from the wild, and 24 long-eared owls, 2 merlins and 2 griffon vultures sourced from breeding centers, mainly for commercial purposes.
3. IMPACT OF MIGRATORY BIRD TRAPPING ON NATIVE POPULATIONS

V.Yu. Ilyashenko

Recent years have provided increasing evidence of the critical rates of migratory trapping of some bird species nesting in Russia. Unfortunately, this issue has not been properly attended to due to various factors. The examples listed below will hopefully justify the need for an in-depth analysis of the emerging situation and help to find the ways of addressing these issues³².

3.1. YELLOW-BREASTED BUNTING (Emberiza aureola)

In China, the annual harvest of these small birds is about 7–10 million birds that are trapped with nets. The Chinese call yellow-breasted bunting 'rice birds' because they feed on rice fields during their migration and wintering. In 1997, China banned hunting of yellow-breasted bunting after the concerning population declines were noted, but millions were reportedly still being trapped and sold for food up until at least 2013. Experts estimated their total 2001 harvest at about 1 million birds in Guangdong (a province in South China) alone. For instance, one of Sanshui marketplaces sold 10,000 birds per day, and in the cities of Guangzhou and Shaoguan, law enforcement agencies confiscated over 100,000 yellow-breasted buntings during one raid.

Unprecedented rates of depletion of the Palearctic population of yellowbreasted bunting are believed to be caused by the virtually exterminating scope of their illegal trapping for sale in China.

The species is used for cooking specialty game dishes that are popular in South China, Cambodia and Nepal (considered as an aphrodisiac). In China, the market offers stuffed birds and mascots that are believed to bring fortune to the households where they are kept.

The nesting range of yellow-breasted bunting stretches from Finland to the Far East and its wintering sites are in Southeast Asia, including South China. During the period of 1980–2013, its population got reduced by 84.3%–94.7%

³² This section does not cover all species of birds trapped on migration routes, including the spoon-billed sandpiper (*Calidris pygmeus*), which is predominantly trapped in East and Southeast Asia, and other bird species.

and the migration distance was shortened by 5,000 km. Yellow-breasted bunting has almost disappeared in Eastern Europe, Japan and in a significant part of Russia. In European Russia, its population has decreased by 70%. In 2016, yellow-breasted bunting was classified as a Critically Engaged Species in the IUCN Red List and it is proposed to be listed in the Red Data Book of the Russian Federation.

The migration route of yellow-breasted bunting is rather narrow and goes through Eastern China where it was being trapped in October–November for over 2,000 years. Prior to the mass-scale use of mist nets, yellow-breasted bunting was regarded a luxury food for gourmets. Its trapping practice used to be limited to a small area in South China (mostly in Guangdong Province), but it has become more widespread and popular because of the growing prosperity. The main driver of the increased trapping of these birds is the availability and cheapness of mist nets. Guangdong Province is a hotspot because this is where the migration route bottleneck is located. A peculiarity of the species behaviour is an overnighting concentration of its big flocks in the bushes, including those in narrow mountain valleys where they become easily accessible victims for trappers.

Bird trapping is a profitable business: a retail price of a small bird is US\$2.1. One yellow-breasted bunting may cost up to US\$8.5 in some restaurants that rename it into the 'rice bird' on their menus to avoid fines that can be as high as CNY100,000 (US\$14,500). In the restaurants of Hong Kong, one bird costs up to HKD80 (US\$10). Live yellow-breasted bunting are offered for CNY 100–220 (US\$14-31) per bird at Taobao (a Chinese version of eBay/Amazon). To evade fines, sellers contact only those buyers who speak the local dialect.

3.2. AMUR FALCON (Falco amurensis)

Amur falcon nests in the Far East and migrates through China and India to its wintering sites in Eastern and Southern Africa. This is the farthest migrant out of all diurnal birds of prey, with its total migration distance reaching about 22,000 km.

There are no census-based assessments of the population and its trends for this species, but the expert estimates range from 100,000 to 1 million birds. The greatest number of these birds is found in the narrow corridor in North-Eastern India in the State of Nagaland and some parts of Manipur and Assam as well as in Nepal. This may be the only major congregation of Amur falcons ever recorded in the world. Amur falcons tend to overnight in vast bamboo thickets. Traditionally, inhabitants of local villages build platforms of several bamboo stems, binding them with ropes. They catch Amur falcons with hands when they land on the bamboo in twilights and sometimes at night.

In 2000 the fishers started to trap falcons nearby the Doyang reservoir in Wokha, Nagaland using fishing nets (up to 30–40 m long and 10–12 m tall). They fixed the nets in the branches of trees and returned in the morning to collect trapped falcons. The nets were stretched over the entire area for the night, with nearly no safe place for the birds left there. Every day, 60–70 trapper groups were at work. Each group caught about 180 birds a day. It meant that during the peak migration, daily catch reached from 12,000 up to 14,000 birds in this location alone. Local communities could not absorb such quantities for their own consumption. Harvested birds were either exported alive to clients and marketplaces or plucked and smoked for sale.

Usually, four falcons are sold for INR100 (US\$1.4). The price of eight falcons is equivalent approximately to the average salary in the region, and bird trappers sold thousands of falcons per day during high seasons. Later, the prices decreased by half. People from the village of Pangti in Nagaland (the main known place of falcon harvesting) earned about INR3.5 million (US\$ 48,961) per year from selling these falcons.

In 2014, owing to the pressure from conservation NGOs, the government took a number of measures to stop the illegal trapping in Pangti.

As of today, falcons are in safety not only in Pangti, but also in the whole of Nagaland. However, mass-scale trapping of Amur falcon is reported to be practiced in other large overnighting congregation places of falcons in the neighbouring states, including Assam and Manipur, because the interest to Amur falcon has been spreading over the entire area of North-Eastern India.

3.3. DEMOISELLE CRANE (Antropoides virgo)

Demoiselle crane nests primarily in the Eurasian steppe zone. In the late 20th century, its isolated non-migratory population became extinct in Morocco, and in the early 21st century, another isolated non-migratory population became extinct in Turkey. The total size of the demoiselle crane population decreased from 250,000 birds in the 1980's to 170,000–220,000 birds now, and in Russia, it shrunk from 80,000 to 60,000–65,000 birds. The negative trend is persisting.

In Russia, before the early 1990's, 150 to 350 demoiselle cranes were being trapped every year for exports to the zoos that paid up to US\$100 per bird.

Demoiselle cranes key commercial trapping locations are on their migration routes towards Northern Africa and Western India. The European populations migrate primarily through Turkey and the Arabian Peninsula. Demoiselle cranes are also trapped on their migration routes from the southern parts of West Siberia and from Kazakhstan, demoiselle cranes migrate to India through Uzbekistan, Afghanistan and Pakistan.

Since recently, a new trapping technique has been used in Saudi Arabia. Light blue plastic sheets (100 m2 on the average) are put on the ground in the desert. Sometimes, they also put crane shapes along the edges. At night, cranes take the plastic sheets for water and land by their sides to drink. Acting from hiding places, hunters trap dozens of birds in one night. Such trapping has become popular and is advertised through the Internet.

In Afghanistan and Pakistan, demoiselle cranes are trapped with the use of decoy birds in cages. Flocks fly down to them. Traditionally, trappers caught cranes with the help of ropes with weight leads at the ends. When cranes approached, they threw such ropes into the flock and the ropes enlaced the wings and necks of birds. Now, rifles are also used.

Commercial harvests of demoiselle cranes for trade purposes are unknown. The economic importance of demoiselle cranes is limited mostly to the food and pet trade. However, in the view of the observed trend to reduction of the population, commercial harvesting may be regarded as a risk.

4. TRADE IN TERRESTRIAL MAMMALS

The section covers trade in Amur tiger, brown bear, Asiatic black bear, Siberian musk deer, saiga, montane ungulates species, deer species, lynx, wolf, sable and other fur-bearing mammals.

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Species, group of species	CITES Appendix	Category of species according to the national regulation	IUCN Red List category and criteria	
Amur tiger (<i>Panthera tigris altaica</i>)	I	Red Data Book listed species, high value species.	EN	
Brown bear (Ursus arctos)	Ш	Game resourse	LC	
Asiatic black bear (Ursus thibetanus)	I	Game resourse	VU	
Siberian musk deer (Moschus moschiferus)	II	Game resourse	VU	
Saiga (S <i>aiga tatarica</i>)	II	Game resource, high value species. Since 1999 ban on saiga harvest is introduced.	CR	
Lynx (<i>Lynx lynx</i>)	Ш	Game resourse	LC	
Wolf (Canis lupus)	Ш	Game resourse	LC	
Montane ungulates species				
Bighorn (Ovis nivicola)	NC ³³	Game resourse	LC	
Siberian ibex (Capra sibirica)	Ш	Game resourse	LC	
Caucasian tur (Capra caucasica)	Ш	Game resourse	EN	
Caucasian tur (Capra cylindricornis)	NC	Game resourse	NT	
Chamois (Rupicapra rupicapra)	NC	Game resourse	LC	
Argali (Ovis ammon ammon)	II	Red Data Book listed species, high value species	NT	
Deer species				
Red deer (<i>Cervus elaphus</i>)	NC	Game resourse	LC	
Sika deer (Cervus nippon)	NC	Game resourse	LC	
Reindeer (Rangifer tarandus)	NC	Game resourse	VU	

³³ NC – non-CITES listed species.



Table 10 (Continued	(1)
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Species, group of species	CITES Appendix	Category of species according to the national regulation	IUCN Red List category and criteria
European roe deer (<i>Capreolus capreolus</i>)	NC	Game resourse	LC
Siberian roe deer (Capreolus pygargus)	NC	Game resourse	LC
Moose (Alces alces)	NC	Game resourse	LC
Fallow deer (Dama dama)	NC	Game resourse	LC
Certain fur-bearing animals			
Sable (Martens zibellina)	NC	Game resourse	LC
Marten (Martes martes)	NC	Game resourse	LC
Squirrel (Sciurus vulgaris)	NC	Game resourse	LC
Stoat (Mustela erminea)	NC	Game resourse	LC
Muskrat (Ondatra zibethicus)	NC	Game resourse	LC

A.L. Vaisman 4.1. BROWN BEAR (Ursus arctos)

Brown bear is the most numerous species among big predators in Russia. The recent 25–30 years have seen a steady growth of its population practically in all parts of its range in the country.

As a game resource, brown bear may be hunted with its removals regulated through establishing quotas approved at the regional level without the need to agree them with the federal authority. Data of the National Monitoring of Game Resources and their Habitats and the National Hunting Register show that in the period of 2011–2017, the brown bear population, its hunting quotas and reported removals were growing (*Table 11*).

In Russia as a whole, legal removals of brown bear remain low: reported removals make up only about one third of the quota. Irrespective of the possibility to hunt the bear legally, illegal hunting does exist; and as estimated by experts, the sum of legal and illegal bear removals does not exceed the harvesting quotas.

Bear hunting is practiced primarily for trophies or for bear parts and derivatives, invariably demanded both in the domestic market and in the market of countries of East Asia, mostly in China.

Season	2011–2012	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017
Population	203,630	208,220	209,679	215,955	235,010	245,071
Quota	12,853	14,155	15,960	16,781	18,081	18,984
Harvest	4,213	5,019	4,995	5,623	6,600	6,944

Table 11. Brown bear population, hunting quotas and reported removalsin Russia (2011–2017) (# of animals)

Source: National Monitoring of Game Resources and their Habitats, National Hunting Register.

Traded bear parts and derivatives

In the regions, buyers are quite actively buying up bear parts and derivatives. In European Russia, they buy fat and bile and, less frequently, skins. In the eastern Russian regions, bile and paws are bought and, less frequently, fat.

According respondents from the Russian Far East, the recent two years saw a decline in the buying of bile and paws that used to be bought up mostly to be exported to China. Experts attribute it to the tightening of customs control that made it much more difficult to illegally deliver parts and derivatives of various species, including the bear, across the border.

Bile

The domestic market of bear bile is quite extensive. It offers natural bile (desiccated gallbladders) and such products as crystal bile, alcohol tinctures, honey tinctures and capsules with bile, etc. There are special Internet resources offering bear bile and products based on it.

The volumes of official CITES-compliant trade in bear bile are extremely small, with the CITES data on legal bear bile exports and imports being contradictory. For example, in the period of 2011–2016, only 28 desiccated bear gallbladders were exported from the Russian Federation, whereas the importer countries reported 80 desiccated bear gallbladders imported from Russia. In the same period, Russia's exports of refined bear bile amounted to 13.614 kg while its importers reported 35.081 kg. Thus, in 2011–2016, the bear bile officially imported from Russia was equivalent to 1,000 bears³⁴.

³⁴ Desiccated gallbladder weight per animal varies greatly. Under certain assumptions, it may be estimated at 40 g on the average.

This number of bears is equivalent to about 1 percent of the total brown bear hunting quota for this period and 3 percent of the total reported bear removals of the same period.

These figures allow to suggest that the bulk of bear bile is being exported from the Russian Federation illegally. It appears impossible to estimate the domestic trade in bear bile without special studies.

Fat

Bear fat is used topically and internally in traditional health care and in aesthetic medicine in Russia.

The market offers both natural bear fat (rendered lard packed in glass and plastic bottles from 100 to 500 ml) and bear fat, often mixed with honey, in capsules. No CITES-compliant exports of bear fat were reported. Regional experts reported only occasional attempts to export this derivative (unlike bear bile and paws) to China illegally; the main demand for bear fat is found in the domestic market. It appears impossible to estimate the domestic trade in bear fat without targeted studies.

Paws

Bear paws are used as ingredients for so called 'healthy diet' products that are in demand primarily for Chinese restaurants. Big batches of bear paws may be found among smuggled goods, which is indicative of active trade in them between Russia and China. For example, one of the smuggled batches seized in the Far East in 2017 contained 879 paws of brown and black bears. Paws comprise the biggest share of smuggled parts and derivatives of brown and black bear. Currently, total exports of bear paws amount to at least 10 tons per year [Lyapustin et al, 2013].

Trophies and similar products

The main areas of brown bear trophy hunting are in Central Russia, including Vologda, Tver, Arkhangelsk and Kirov Regions and the Republic of Karelia, and in Eastern Russia: Kamchatka Territory, Magadan Region and the northern parts of Khabarovsk Territory.

In the period of 2011–2017, over 1,800 brown bear trophies were officially exported from the Russian Federation. The main importers were the United States and EU countries.

Table 12. Pri	ces for brown	bear parts and	l derivatives
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Parts and derivatives	Price range
Undressed bearskin	US\$ 155 – 470 ³⁵
Dressed bearskins with stuffed heads and with felt or other textile backing	US\$ 545 – 4,690 ³⁶
Natural bile (in the internet)	from US\$ 4.70 per gram
Crystal bile (in the internet)	US\$ 17 per 1.5 gram
Bear bile ³⁷	US\$ 9 per gram
Bear paws	US\$ 45 per kg
Bear fat	US\$ 30 per kg

Brown bear parts and derivatives are actively traded in the domestic market as well as exported, but the reported removals do not exceed the established quotas; and as of today, the trade does not threaten the species existence. However, it is deemed necessary for the respective authorities to monitor the situation to prevent illegal trade in brown bear parts and derivatives.

4.2. ASIATIC BLACK BEAR (Ursus thibetanus)

The first and only large-scale black bear survey was undertaken in the early 1970's. Since then, both the size of the population and its distribution within the species range significantly changed due to the transformation of its habitats resulting from the large-scale forest logging in 1990–2000. Over the recent decade, black bear was regularly surveyed by hunting service providers with inputs from district-level wildlife and game management bodies. The surveys revealed that this species population has been steadily growing for more than 10 years. Black bear surveys yield data of suboptimal reliability, but other data sources are not available, and there is no evidence of a black bear population decline or other negative trends [Dunishenko, 2018].

Bile is the main traded black bear derivative, and it does not differ from brown bear bile.

Black bear trophy hunting is practiced primarily by affluent Russian hunters. Foreign black bear hunters are rare. This can be explained by the specifics of hunting logistics for foreign hunters as well as by the fact that black bear is

³⁵ Depending on the size and quality.

³⁶ Bearskin prices vary greatly and depend on the size, colour and quality of the pelage.

³⁷ Current purchase prices for bile, paws and fat in the southern areas of the Russian Far East (Primorsky Territory, southern parts of Khabarovsk Territory and Amur Region).

 Table 13. Population, hunting quotas and reported removals of Asiatic black

 bear in Russia (2011–2017) (# of animals)

Year	2011–2012	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017
Population	5,102	4,950	4,405	6,404	6,788	7,286
Quota	235	279	N/A	291	387	354
Removal	113	156	85	138	137	143

Source: National Monitoring of Game Resources and their Habitats, National Hunting Register.

listed in CITES Appendix I and its trophy importation into other countries entails significant bureaucratic difficulties; only one trophy was exported from Russia in 2012–2016.

Black bear skins are not found in open marketplaces.

Substantial improvements in the performance of the customs authorities have drastically reduced the buying of bear paws and bile and removed perverse incentives for poaching by the local communities.

Legal exports of black bear parts and derivatives are confined to small specimens exported for research purposes.

Table 14. The total number of brown and black bear parts and derivatives seized by the Federal Customs Service of the Russian Federation in the period of 2012–2018

Species/parts and derivatives	Paws (pc.)	Bile (pc.)	Kneecaps (pc.)
Identified as parts and derivatives of brown or black bears	1,485	109	6
Identified as parts and derivatives of brown bear	44	1	2
Identified as parts and derivatives of black bear	21	0	0
Total	1,550	110	8
Number of bears	388	_	_

Currently the trade in black bear parts and derivatives is not detrimental to its population in Russia. However, it is deemed necessary for the respective public authorities to monitor the situation to prevent illegal trade in black bear parts and derivatives.

4.3. SIBERIAN MUSK DEER (Moschus moschiferus)

Both legally and illegally, musk deer is hunted for musk that is the only traded derivative of this species.

Legal musk deer hunting is regulated in Russia though establishing quotas. The National Monitoring of Game Resources and their Habitats and the National Hunting Register show that the musk deer population, hunting quotas and reported removals tended to grow in 2011–2017.

 Table 15. Population, hunting quotas and reported removals of musk deer in Russia (2011–2017) (# of animals)

Year	2011	2012	2013	2014	2015	2016	2017
Population	190,000	212,400	229,800	235,310	277,690	361,450	398,520
Quota	5,819	6,970	7,870	9,019	8,989	11,214	13,848
Removal	4,853	5,485	5,984	6,683	7,600	9,306	11,860

Source: National Monitoring of Game Resources and their Habitats, National Hunting Register.

However, as of today, there is no certainty about either the size of the musk deer population in Russia (its estimates vary greatly) or the actual commercial hunting pressure on the population. Targeted censuses of the musk deer have not been undertaken in Russia [Vaisman, Fomenko, 2004].

Many experts argue that winter route surveys significantly underestimate the size of musk deer population within the hunting grounds; and the specifics of this species biology make it very difficult to estimate its population in the wild. Some authors assert that it is impossible to estimate its population with any degree of precision due to the ecological and ethologic peculiarities of musk deer³⁸.

In view of all these difficulties, Russia's musk deer population was estimated on the basis of experts' opinions rather than an analysis of representative census data. In that situation, the population was estimated at

³⁸ For example, the surveys conducted in Krasnoyarsk Territory resulted in many-fold underestimations of the musk deer resources (Syroechkovsky, Rogacheva, 1984). It is also difficult both to re-estimate the number of animals counted along the routes and to extrapolate the obtained results to the area of the species habitats given that even in its optimal habitats mask deer occupies only the best parts thereof, with their share ranging from at 37% to 75% (51% on the average) of its 'assigned' forested area (Zaytsev, 1991; Prikhodko, 2000).

125,000–130,000 animals. With this estimate in mind, it was undertaken to assess (legal and illegal) trade in musk in the early 2000's. The obtained data were interpreted to show that the winter route census method underestimated the musk deer population, at least, 2.5–3 times [Vaisman, Fomenko, 2004].

Upon the enactment of the new Hunting Law and its related regulatory framework that made the hunting quotas for various species dependent on the available population size and density data, the reported musk deer populations started to grow (*see Table 15*). Today, the National Monitoring of Game Resources shows that there are almost 400,000 musk deer in Russia. Some experts believe that, in the recent years, providers of hunting services reported a growth in the musk deer population in order to have their hunting quotas increased rather than to show the actual situation.

Since the 1990's, mass-scale musk deer poaching has been inflicting severe damage on its population. Snares are the main technique of musk deer poaching. The detrimental impact of this practice rests with the fact that it is non-selective: to catch one adult male at least two more animals are caught including females and young animals. Even legal musk deer hunting is not quite legal because hunters tend to report harvests only when they have males. As a result, formally legal actual harvests exceed the reported harvests three times in terms of the number of animals. In view of the failure of the local agencies responsible for wildlife management to monitor and manage musk deer harvests and use of permits, the CITES Scientific Authority³⁹ suspended the consideration of applications for approval of export permits in 2013.

According to the National Hunting Register, the total official harvest in 2011–2017 was 51,771 musk deer. During the same period, as reported by the WCMC, CITES-compliant legal musk exports from Russia (mostly to China and the Republic of Korea) amounted to 517.062 kg which is equivalent to 25,850 adult males; and also 711 desiccated musk glands. So, during this period, the exported musk and its derivative products were equivalent to over 26,500 males⁴⁰.

This figure should be viewed as the minimum credible value because specimens from the WCMC trade database were not included in the computations where the weight of e.g. 'musk, 5,000 pellets' was not specified, which makes it impossible to understand the type, size or units of the package⁴¹. In 2012–2018, the Federal Customs Service of Russia seized

³⁹ Severtsov Institute of Ecology and Evolution Problems under the Russian Academy of Sciences is the CITES Scientific Authority of Russia.

 $^{^{\}scriptscriptstyle 40}\,$ The average weight of musk per gland is assumed to be 20 g.

⁴¹ 'Pellet' may mean both a pack and a pill or a capsule.

1,459 musks. For the same period the Chinese customs services interdicted 372 pc and 110.1 kg. of musk gland from Russia. This amount of illegal export of musk was equivalent to 7,291 males.

Musk deer is not a popular hunting trophy. In 2011–2016, legal CITEScompliant exports of musk deer trophies from Russia were recorded only twice.

Currently, musk deer is under significant commercial hunting pressure. However, deer musk trade and musk deer removals from the wild have remained almost unchanged over many years. It means that regardless of the excessive pressure in some part of its range, the species population is so far stable in Russia overall, though the stability may be already fragile. Considering the current level of commercial hunting pressure and a possible growth of prices for deer musk glands coupled with potential demand growth resulting from the increasing purchasing power in China and other countries of Southeast Asia, musk deer should be classified as a game animal that requires special attention to its conservation and management.

4.4. SAIGA (Saiga tatarica)

Though saiga antelope is formally a game species, its harvesting has been forbidden since 1999 due to its critically small population. The long-term population decline has been caused mainly by poaching for saiga males to sell their horns that are in great demand in the traditional medicine market in China and countries of Southeast Asia. In certain years, the share of saiga males in the population was about 2% (versus the normal 20%-25%) and 85% of females remained barren after the estrus.

According to the WCMC, there were 123 recorded transboundary transfers of saiga horns and their derivatives for commercial purposes in 2011–2017. The total weight of the declared exports of horns, including horn-based 'health' products, was 4,886 kg plus 432 whole horns of unspecified weight. In addition, 380,000 samples of 'pharmaceuticals' of unspecified weight were transported. The declared re-exporters were: China (56 cases), Japan (22 cases), Hong Kong (14 cases), Singapore (23 cases), Republic of Korea (3 cases), Vietnam (2 cases), USA, UK and Switzerland (1 case each). The countries of origin were stated for only 12 export transactions, and only in 7 cases the declared countries of origin were the saiga range countries: Russian Federation (3 kg of powder exported from Singapore) and Kazakhstan (620 kg of horns exported from Singapore and Hong Kong).

Parts and derivatives were reportedly exported from the saiga range countries for purposes of research, education and exhibitions: three export cases of exhibition specimens from Russia and 5 export cases of saiga parts and derivatives from Kazakhstan for research purposes.

Major importers of saiga parts and derivatives are the US (24 cases), Japan (33 cases), Hong Kong (21 cases), and Singapore (22 cases). China used to be the main importer of saiga parts and derivatives, but it imported them legally only once in 2011–2017: it was a small batch of horns (4.2 kg) from the Republic of Korea.

As reported by the WCMC, 360 cases of legal international trade in big batches of saiga horns were recorded during the period of 2003–2012. The total weight of high value whole horns alone (not counting horn-based products and semi-products) was 34,320 kg.

Thus, China was the main importer of smuggled saiga horns during 30 years; therefore, it has accumulated big quantities of saiga horns and horn-based products, and is now using them as a very profitable commodity for export to high-income countries such as Japan and countries with extensive Chinese diasporas such as the US, Hong Kong and Singapore. In late 2016 and early 2017, fresh saiga horns were purchased for RUB 25,000 (US\$ 390) per kg (1 kg = 6 horns) in Kalmykia, which is higher than the average monthly salary in the region.

In China, the wholesale price for saiga horns is over US\$5,000 per kg. China's domestic market of saiga horns sells about 9 tons per year. But the legality of transported goods is still an unresolved issue. The point is that the ongoing trade in saiga horns is not limited to the previously earlier accumulated stocks; they are being smuggled from Russia and Kazakhstan (where its hunting has been banned since 1999) and in smaller amounts from Uzbekistan. The issue became aggravated after the establishment of the Eurasian Customs Union, with Russia and Kazakhstan being its members. Member-countries share a common customs area and there is no transboundary control over the flows of goods between Russia and Kazakhstan. This enables illegal traders to transport batches of saiga horns from Russia to Kazakhstan without obstacles. Then the smuggled products are legalized in the countries of Southeast Asia and further sold as legal goods.

According to the media, batches of saiga horns are being regularly seized in the process of suppressing attempted smuggling and illegal domestic trade in Russia and neighbouring countries. The table below provides information about such cases. While this information is not complete, it reflects the situation with illegal trade in saiga horns.

Table 16.	Illegal	trade ir	ı saiga	horns in	2015-2019
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Date	Offence and location	Illegal trade specimens and volumes
September 2015	Illegal storage. Yashkul District, Kalmykia.	Horns, 33 pc.
December 2016	Smuggling. Poltavka Border Checkpoint, Primorsky Territory.	Horns, 1,000 pc.
December 2017	Smuggling. Zabaikalsk (Zabaykalsky Territory) – Manchuria (Heilongjiang) Border Checkpoint.	Horns, 12 pc.
March 2018	Illegal trade. Akhtubinsk, Astrakhan Region.	Horns, 115 pc.
April 2018	Smuggling. Zabaikalsk (Zabaykalsky Territory) – Manchuria (Heilongjiang) Border Checkpoint.	Horns, 1,276 pc.
May 2018	Smuggling. Blagoveshchensk (Amur Region) – Heihe (Heilongjiang) Border Checkpoint.	Horns, 25 pc.
September 2018	Smuggling. Kharabali – Balkuduk Border Checkpoint, Astrakhan Region.	Horns, 92 pc.
December 2018	Illegal harvest and illegal trade. Republic of Kalmykia.	2 heads with horns
December 2018	Smuggling. Zabaikalsk (Zabaykalsky Territory) – Manchuria (Heilongjiang) Border Checkpoint.	Horns, 121 pc.
January 2019	Smuggling. Kharabali - Balkuduk Border Checkpoint, Astrakhan Region.	Horns, 481 pc.
March 2019	Smuggling. Pogranichny (Primorsky Territory) – Suifenhe (Heilongjiang) Border Checkpoint.	Horns, 9 kg
April 2019	Smuggling. Sykym (formerly Pogodaevo, West Kazakhstan Region) – Mashtakovo (Orenburg Region) Border Checkpoint.	Horns, 148 pc.
April 2019	Illegal trade. Volgograd Region.	Horns, 186 pc.
April 2019	Smuggling. Aksaraisky border checkpoint.	Horns, 205 pc.
For 2015-2019	_	3,752 horns are equivalent to 1,876 males

This situation has developed due to the insufficiency of international mechanisms of combating illegal trade. Saiga is listed in CITES Appendix II, which until 2019 meant that its parts and derivatives may be internationally traded. At the 18th Meeting of the Conference of the Parties to CITES (CITES CoP18) zero export quota was established for wild specimens traded for commercial purposes.

According to B. I. Ubushaev, Director, Chernye Zemli (Black Lands) Nature Reserve (personal communication, 2018), saigas of the North-Western Caspian Sea Region population may be still found only within the Nature Reserve and the adjacent protected areas. Owing to their conservation status, illegal saiga hunting is very rare in the Reserve, but outside the protected areas, saiga poaching is common. In this situation, the illegal saiga harvest is estimated it at about 100 animals per year.

In 2017, the North-Western Caspian Sea Region's saiga population was estimated at 6,000 animals. However, the share of adult males increased from 0.7% in December 2014 to 12.5% in July 2017 and stayed at 11% in December 2017.

Due to the persistently high demand for saiga horns and the possibilities for legalization of illegally bought horns in the international market, saiga horn trade is fraught with the species' extinction.

4.5. MONTANE UNGULATES

This review covers the following species:

- 1. Argali (Altay wild sheep) Ovis ammon ammon.
- 2. Bighorn *Ovis nivicola*.
- 3. European mouflon *Ovis musimon*.
- 4. Siberian ibex Capra sibirica.
- 5. Caucasian turs Capra caucasica and Capra cylindricornis.
- 6. Chamois Rupicapra rupicapra.
- 7. Bezoar goat *Capra aegagrus*.

Of the above species, argali, Putorana and Yakutia (Chukotka population) subspecies of bighorn and bezoar goat are listed in the Red Data Book of the Russian Federation, while all others are classified as game resources. It is proposed to include the Western Sayan population of Siberian ibex, Caucasian chamois and the Kodar subspecies of bighorn in the next update of the Red Data Book of the Russian Federation. Illegal trade in argali entails criminal liability. Nevertheless, limited and illegal trophy specimens are removed from the wild to further use of their horns as a "gift of respect" to local high-ranking officials.

Bighorn (Ovis nivicola)

The overall removal of bighorns is negligible (under 1% of the population, according to official data) and cannot affect the bighorn populations. There is no active trade in bighorn parts and derivatives.

Table 17. Population and reported removal of bighorn in Russia

 (2011–2017) (# of animals)

Year	2011	2012	2013	2014	2015	2016	2017
Population	73,200	70,700	78,400	73,600	76,200	77,789	83,703
Removal	121	249	253	342	363	459	456

Source: National Monitoring of Game Resources and their Habitats, National Hunting Register.

Official harvest reports usually contain data on the animals killed for trophies that require special permits for their legal transportation. Illegal removal of bighorns by local people is not common in the view of the remoteness of their habitats from local communities.

Siberian ibex (Capra sibirica)

The main Siberian ibex range regions in Russia are the Republics of Altay and Tyva and Krasnoyarsk Territory; small groups are also found in Irkutsk Region and the Republic of Buryatia. According to the National Monitoring data for 2013, its total population was 12,100 animals.

Officially reported harvests greatly vary depending on market demand for trophy hunting tours. The highest level (334 animals, or less than 2.5 percent of the estimated population) was recorded in 2015.

Table 18. Population and reported removals of Siberian ibex in Russia(2011–2017) (# of animals)

Year	2011	2012	2013	2014	2015	2016	2017
Population	13,400	12,100	12,100	11,500	13,270	13,700	13,576
Removal	106	115	210	195	334	252	178

Source: National Monitoring of Game Resources and their Habitats, National Hunting Register.

Siberian ibex, like bighorn, is legally hunted mainly for trophies. According to WCMC 26 trophies were exported from Russia in personal purposes in the USA and EU in 2015–2018.

There is practically no trade in parts and derivatives of this species.

Caucasian turs (Capra caucasica and Capra cylindricornis)⁴²

Wild goats are hunted for trophies. Caucasian turs are hunted chiefly in North Ossetia; their removal does not exceed 2% percent of their total population and does not pose a threat to the species existence.

According to WCMC, 41 Caucasian turs trophies (*Capra caucasica*) were imported from Russia to the USA and EU countries for the period 2017–2018, including 18 trophies to Spain.

 Table 19. Population and reported removals of Caucasian turs in Russia

 (2011–2017) (# of animals)

Year	2011	2012	2013	2014	2015	2016	2017
Population	24,400	26,300	26,600	26,130	26,420	25,159	25,661
Removal	174	203	229	332	333	332	347

Source: National Monitoring of Game Resources and their Habitats, National Hunting Register.

In 2017, a study was undertaken to assess the online trade in wild animals, their parts and derivatives and resulted in finding over 100 supply-side advertisements of Caucasian tur horns worth of RUB 1.6 million (US\$ 25,000).

Chamois (*Rupicapra rupicapra*)

In the Russian Federation, chamois occurs in the Northern Caucasus and Southern Federal Districts. Within the hunting grounds, its present-day population is estimated at 4,000–4,300 animals⁴³. In addition, about 2,000 animals live in federal protected areas in the North-Western Caucasus.

Chamois is not a popular game item. Its hunting is usually offered as part of wild goat hunting and regulated with harvesting quotas. All animals are harvested

⁴² Both species are the Caucasus endemics.

⁴³ It is difficult to properly monitor the chamois population due to its hidden life in high-mountain forests; therefore, its population is estimated primarily on the basis of expert assessments.

in the Republic of Karachay-Cherkessia. No quotas were ever established for other regions because their chamois populations are too small.

Table 20. Population and reported removal of chamois in Russia(2011-2017) (# of animals)

Year	2011	2012	2013	2014	2015	2016	2017
Population	4,300	3,500	4,100	3,470	3,380	3,685	4,108
Removal	9	14	17	21	38	38	60

Source: National Monitoring of Game Resources and their Habitats, National Hunting Register.

Chamois parts and derivatives are not traded, and the level of its removal from the wild does not pose a threat for the species existence.

4.6. DEER SPECIES

There are 7 game species of the Cervidae family in Russia; they are:

- 1. Red deer (Cervus elaphus)
- 2. Sika deer (Cervus nippon)
- 3. European roe deer (Capreolus capreolus)
- 4. Siberian roe deer (Capreolus pygargus)
- 5. Moose (Alces alces)
- 6. Fallow deer (Dama dama)
- 7. Reindeer (Rangifer tarandus)

Removals of all Cervidae species are regulated through establishing hunting quotas. In addition to wild reindeer, economically and socially valuable species include moose, European and Siberian roe deer, red deer (Siberian wapiti and Manchurian wapiti), and, to a lesser extent, sika deer (mostly for southern areas of the Russian Far East).

Table 21. Population, h	nunting quotas	and legal remov	vals of deer	species in 2016
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Species	Roe deer	Siberian roe deer	Moose	Red deer	Sika deer	Fallow deer
Population	111,966	899,118	1,023,026	263,235	26,659	788
Quota	6,604	46,945	36,142	8,834	1,225	11
Removal	4,875	34,781	28,396	5,623	766	31

Source: National Monitoring of Game Resources and their Habitats, National Hunting Register.

All these deer species are exposed to pressure from hunting and poaching, the only exception is fallow deer which may be found only in fallow deer breeding farms. It is difficult to estimate illegal deer removals. According to Dr. V.M. Glushkov of the Russian Research Institute of Game Management and Fur Farming (VNIIOZ), the legal/illegal moose removal ratio is 1:4. It is even more difficult to estimate the illegal removal and the actual hunting pressure for roe deer. Taking into account such commercially motivated poaching practices as spotlighting, it may be assumed that in this case, the ratio between legal and illegal removals is even worse than for moose.

Until recently, all moose, roe deer and deer products were used primarily for hunters' subsistence or were traded within the region. Recorded as trophies, deer, moose and roe deer horns were also traded on a limited scale as souvenirs or hunting décor items.

The situation is quite different with the trade in red deer and sika deer antlers. Antler hunting is a targeted hunting for Siberian wapiti and Manchurian wapiti males to harvest their antlers and it has been a part of the traditional economy in Siberia and the Far East. To this end, the Hunting Rules identify a special timeframe for hunting adult males with non-ossified horns (antlers).

However, the recent 3 or 4 years have brought about substantial changes in the trade in hunted deer products. It has become legal and open. Now, the offered food products include premium-class meat of moose, deer, roe deer and other wild animals.

The most significant changes have occurred in the horn trade. In addition to antlers, ossified deer and moose horns are in a practically unlimited demand, and this applies not only to horns from shot animals, but also for shed horns and any pieces of horns. As reported by horn harvesters, such horns are exported to China in large quantities to be used for 'health care' purposes. Initially, they were bought at low prices of about RUB 200–250 (about US\$ 3) per kg. The margin between the hunter's price and the price of selling in China was vast and traders generated high profits; therefore, it did not take long for the prices to grow up to RUB 700–800 (about US\$ 11–13) per kg, and in some regions, they reached RUB 1,000 (about US\$ 15) per kg.

Currently, ossified horns are bought throughout the entire range of moose and red deer. In 2017–2018, advertisements to buy moose and deer horns from hunters were abundantly displayed on advertisement boards and poles in

communities across the entire forested part of European Russia, Siberia and the Far East. Apart from horns and antlers, illegally traded deer parts and derivatives include deer genitals and tails. For example, the Federal Customs Service of Russia recorded illegal transportations of 211 red deer genitals, 126 horns and antlers and 78 tails in 2012–2018 in the Far East.

Wild reindeer (Rangifer tarandus)

Reindeer is a circumpolar species inhabiting tundra, forest-tundra and the boreal forest in the Northern hemisphere. There are wild and farm-bred varieties of reindeer. Seven subspecies of wild reindeer can be found in 25 regions of Russia.

The Taymyr wild reindeer herds comprise the most vulnerable population of reindeer affected by the trade in this species and exposed to an increasingly growing pressure from the uncontrolled hunting and poaching. For example, an anti-poaching raid in 2017 detected over 800 sites of illegal hunting for wild reindeer in Evenkia. Specialists estimated the number of animals killed by poachers in the wintering grounds at about 20,000. A batch of frozen deer antlers weighing over 5 tons without permits was found in Yakutia in 2019. The Taymyr wild reindeer herds account for two-thirds of the total number of wild reindeer in Russia and comprise one of the largest wild reindeer populations in the world. The population is characterized by its major size fluctuations: from 485,000 animals in 1980 up to 800,000–1,200,000 in 2000. Since the early 2000's, the population has become two or three times smaller and is currently estimated at 350,000–480,000 animals⁴⁴.

In 1971–1991, the Taymyr wild reindeer population played an important social and economic role in the region, supporting most of its hunting businesses and food security in the Yenisey North. In that period, over 1.35 million animals were removed from the wild by all categories of hunters without detriment to the reproductive potential of the herds.

Wild reindeer hunting is regulated through establishing removal quotas. However, the removal quotas for the Taymyr population are region-specific while these herds are migrating both in Krasnoyarsk Territory and the Republic of Sakha (Yakutia), therefore, the same wild reindeer herds are subject to double hunting pressure.

⁴⁴ According to the data provided by regional experts to WWF-Russia for the preparation of the Wild Reindeer Conservation Strategy for the Arctic Zone in the Russian Federation.

After 2000, wild reindeer harvesting practices of the 1970's–1990's have substantially changed due to the rapid growth of the Chinese market of traditional medicine products.

Wild reindeer hunting and trade in the 1970's-1990's had the following features:

- There were only four hunting enterprises.
- Age and sex composition of the removed animal stock was compliant with the regulations and checked by wildlife rangers.
- Removals did not exceed the quota totals (140,000-155,000 animals per year).
- The main traded specimens were lower thigh skin ('ski skin') used for manufacturing of traditional indigenous outfits and footwear as well as horns for souvenirs; meat was chiefly distributed among the communities of small-in-numbers indigenous peoples and also sold through local retail shops.

Key peculiarities of the current wild reindeer hunting and trade

In the mid 1990's, the previously well-structured commercial hunting stopped operating as an integrated system, which resulted in the following changes:

- Rapid proliferation of poaching due to the insufficiency of the number of full-time wildlife rangers⁴⁵.
- Changed focus of poachers from practically non-selective shooting for the sake of meat and lower thigh skin ('ski skin') towards hunting for adult males with expensive antlers⁴⁶.
- Purposeful harvesting of the largest stags with high reproductive capacity and the largest reindeer females that resulted in the inability of calves to survive and disruption of the spatial, age and sex structure of the herds.
- The antlers market growth in response to the demand from China, and an increasingly common practice of legalizing wild reindeer horns through declaring them as horns of farm-bred reindeer⁴⁷.

⁴⁵ The responsibility for checking the age and sex structure of the removed animals rested with the Northern Team of the Main Directorate for Hunting Management and Nature Reserves of the Russian Federation. The team was staffed by 60 people. Currently, there are only three rangers in Taymyr to take care of 78 million ha of hunting grounds. In 2018, the Government of Krasnoyarsk Territory adopted a decision to increase their number to 8 people.

⁴⁶ Poachers often do not take the carcasses, but only cut antlers and tongues.

⁴⁷ According to the Taymyr Animal Health Team, 61,048 kg of antlers of farm-raised reindeer were transported from Taymyr between February and August 2015, and 20 tons of antlers were harvested in Khatanga village alone in 2016. Buyers (resellers) of wild reindeer antlers may receive certificates confirming that they bought antlers of farm-raised reindeer from big reindeer farms.

Issues arising from the distortion of the age and sex structure

Targeted removal of mature males threatens with the degradation of the Taymyr wild reindeer population.

To mate, wild reindeer create families consisting of one male and multiple females; therefore, they are very sensitive to removal of a part of the male population from the reproduction process. It increases the number of barren females in the population and is also detrimental to the progeny because an increase in the number of females per stag weakens the competition among stags for females and young males start mating.

The share of males is 14% in the Taymyr population, and only 9%–10% in the Yenisey herd exposed to the strongest pressure from commercial hunting, this is merely half of the normal ratio.

Another observed change is a reduced share of calves born in any one year. In 1988–1993, their share was at the natural level, amounting to 24.5% (22.6%–26.0%), and then, it decreased to 21.0% in 2000, to 19.9% in 2003, to 18.4% in 2009, to 11.2%–13.6% in 2014 and to 13.8% in 2016. This is indicative of the increased litter mortality and decreased breeding potential of the population, which is fraught not only with a loss of game resources, but also with complete disappearance of the most vulnerable groups in the population occurring in the western part of the Taymyr Peninsula and the adjacent areas along the left bank of the Yenisey River.

In the recent years, instead of shooting wild reindeer stags, poachers increasingly use the practice of cutting off antlers from live animals with



chainsaws during their water crossing. Such cutting of antlers from live animals kills over 70% of the males who die from shock, bleeding and infections, while the surviving animals are not able to breed any longer. Polled stags, surviving after the cutting of antlers, account for about 8% in the total number of adult males. Taking into account the mortality rate, it may be concluded that over 25% of adult males are exposed to such antler cutting operations in these wild reindeer herds. Since 2019, a five-year ban of live wild reindeer antler cutting has been in force in Krasnoyarsk Territory⁴⁸.

4.7. LYNX (Lynx lynx (sin. Felis lynx))

The available data on the lynx population and removals are not complete. Illegal removals are unknown, but they appear insignificant because lynx hunting is labour-consuming.

Table 22. Population, hunting quotas and reported removals of lynx in Russia (2011–2017) (# of animals)

Year	2011	2012	2013	2014	2015	2016	2017
Population	22,530	23,500	22,510	22,200	21,752	28,362	28,528
Quota	911	1,001	781	818	788	797	1,007
Removal	253	207	261	315	311	337	318

Source: National Monitoring of Game Resources and their Habitats, National Hunting Register.

Lynx skins are the most commonly traded parts and derivatives of this species. The demand for lynx fur is stable, those who buy it up pay from US\$ 80 to US\$ 235, depending on the sizes of skin, fur quality and quality of skin tanning.

The demand of the Russian fur industry for lynx fur is stable. Domestic harvests are insufficient to meet the demand; for this reason, many skins of the Canada lynx (*Lynx canadensis*) and bobcat (*Lynx rufus*) are imported into Russia from Canada and the US (most exports from the US go via Canada). Skins of Canada lynx do not differ from those of Eurasian lynx either visually or in terms of their performance in trade and occupy the same market segment.

⁴⁸ Resolution of the Government of Krasnoyarsk Territory No. 74-p dated 12 February 2019 "On establishing the ban on wild reindeer antler cutting in Krasnoyarsk Territory."

According to the National Hunting Register data, the total legal domestic removal for 2011–2017 equalled 2,002 lynxes, but not all of the pelts were sold by the hunters. According to the WCMC, during the same period, 13,236 Canada lynx skins were imported into Russia from Canada and the US for commercial purposes; so the imports are 6.6 times higher than the legal lynx removals in Russia.

Lynx skins are also exported from Russia for use in the manufacturing of fur items, but their exports are quite insignificant compared with imports. The International Fur Auction has been offering lynx pelts only since 2013. Their sales are low compared to other furs. Maximum supply and sales were observed in 2015 when 143 pelts were offered and sold.

Lynx is also hunted for trophies. According to WCMC, in 2000–2014, different countries (the US and European countries, mainly, Germany, Austria, the Baltic countries, Czech Republic, etc.) imported 145 lynx trophies from Russia. The maximum and minimum annual numbers were 15 trophies in 2003 and 4 trophies in 2012, respectively. On average, 8–9 trophies were imported (i.e. about 2% of the hunting quota). After January 1, 2016, no lynx trophies were imported from Russia to the EU because the European Commission banned such imports based on the negative opinion of the CITES Scientific Review Group on Trade in Wild Fauna and Flora dated December 15, 2015.



As of today, lynx trade does not pose a threat to the species.

Figure 15. The number of sold lynx skins and their average prices (US\$) at the International Fur Auction Source: Records of the St.Petersburg International Fur Auction.

4.8. WOLF (Canis lupus)

The wolf population is growing practically everywhere in the Russian Federation. In the recent years, wolf removal data have been far from complete. The Game and Hunting Assessment Department of the Centre for Game Management and Wildlife and Habitat Monitoring and Analysis (*Centrokhotkontrol*) argues that at least 30% of all hunted wolves are missing in the statistics. The available data on wolf removals reflect only the lowest possible levels.

Prior to 2007, data on wolf skin harvests could be somehow used for estimating the wolf population with a breakdown by region. According to the National Monitoring, the average annual removal reached about 13,000 wolves before 2000.

Year	2011	2012	2013	2014	2015	2016	2017
Population	50,170	58,200	44,420	46,500	55,650	51,990	56,910
Removal	7,856	8,295	8,295	8,916	9,620	8,604	8,968

Table 23.	Wolf population	and removals	in Russia	(# of animals)
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Source: National Monitoring of Game Resources and their Habitats, National Hunting Register.

Wolf parts and derivatives, especially skins, are actively traded in Russia. Offered specimens include various dressed skins with their prices ranging from US\$ 300 to US\$ 1,300, depending on their size, fur quality and colour and the type of products; as well as various articles of clothing made of wolf fur such as hats, jackets, short coats, short fur coats, and fur coats, and also winter clothing decorated with wolf fur.

Over the period of 2011–2017, wolf exports from Russia amounted to a total of 123 wolves (including their parts and derivatives and live animals). Most of them (82%) were hunting trophies (101 animals). During the same period, wolf parts and derivatives were also imported into Russia in the quantities equivalent to 1,222 animals with 1,160 of them (95%) being wolf skins imported from Canada and the US for commercial purposes to be further used in the fur industry.

As of today, wolf trade does not pose a threat for the species.

4.9. SABLE (Martes zibellina)

Legal removals of sable are regulated with removal quotas that are agreed upon with the Ministry of Natural Resources and Environment of the Russian Federation. Since 2000, sable fur sales through the St. Petersburg Fur Auction have been significantly exceeding the established removal quotas for sable with the gap widening from year to year. In 2013, sales exceeded the quotas by 193% and the officially reported removals by 323%. After that tipping point, the market demand for furs changed to result into noticeably lower prices for sable pelts and decreased sales. Sale volumes went up again in 2017, which might be partially attributed to the launched operation of the Baikal International Fur Auction. The opening of this fur auction could contribute to the emergence of additional fur volumes (from the shadow market) that had been earlier sold through well-established secure channels directly to China, bypassing the auctions. In 2017, the sale volume exceeded the removal quota 1.5 times, and the reported removals – 2.15 times.

Russian firms have been playing an increasingly big role at the auctions for the recent 3–4 years⁴⁹.

Professor B.M. Zhitkov from the Russian Research Institute of Game Management and Fur Farming (VNIIOZ), estimates the domestic trade in

Year	2011	2012	2013	2014	2015	2016	2017
Population ('000 animals)	1,163.8	1,224.5	1,299.31	1,346.3	1,286.64	1,309.7	1,449.95
Removal quota ('000 animals)	330,984	356,337	350,041	489,249	368,315	377,062	405,136
Reported removal ('000 animals)	173,800	208,750	219,967	237,591	250,028	266,919	288,043
Sale through St. Petersburg Auction ('000 pc.)	459,389	544,780	674,886	519,127	444,123	453,464	579,413 + 39,286*

Table 24. Sable population, removal quotas, reported removals and quantitiesof sable pelts sold through the St. Petersburg Fur Auction (2011–2017)

* Sold through the Baikal Fur Auction that has been operating since 2017 in Irkutsk.

Sources: National Monitoring of Game Resources and their Habitats, National Hunting Register, Records of St. Petersburg and Baikal International Fur Auctions.

⁴⁹ At the Baikal International Fur Auction, the top lot of the sable fur was bought by a Russian manufacturer of fur products.



Figure 16. Removal quotas, officially reported removals and quantities of sable pelts sold through the international auctions Sources: National Monitoring of Game Resources and their Habitats, National Hunting Register, records of St. Petersburg and Baikal International Fur Auctions.

sable pelts at about 25% of their exports. It means that the 2017 harvest was over 770,000 animals and taking into account the direct supplies to China it would be reasonably safe to estimate the actual annual harvest at 800,000 animals or more, accounting for over 55% of the recorded sable population⁵⁰. Such a situation has been persisting (with some fluctuations) for many years since the early 2000's. Nevertheless, no sable population decline has been ever observed. It may mean that Russia's sable population is significantly underestimated.

However, an analysis of changes in the sales would suggest that the actual sable removal equivalent to the sales through auctions in volume terms (about 700,000 pelts) is most likely to have already exceeded the allowable impact of commercial hunting in some regions. This conclusion results from a comparison of the changes in the sable prices and sale volumes at the auctions.

⁵⁰ Hence, to estimate the minimum actual sable removal, auction sales should be multiplied by 1.25.



Figure 17. Comparison of the changes in the sable prices and sale volumes at the international fur auctions Source: Records of St. Petersburg and Baikal International Fur Auctions.

The above figure enables to compare the number of sold sable pelts and the average prices for one pelt. Since 2010, the price growth was a driving force of the intensification of commercial hunting, increased supply and sable price rises at auctions. There is a correlation among these indicators. The peak was observed in 2013 when the average price of a sable pelts reached US\$267 and the auction offered a total of 720,000 pelts (with 675,000 of them sold). In 2014, commercial hunters expected the prices for furs to remain high and deemed it profitable to start hunting in the newly utilized areas, hire assistants, etc. In the first half of the hunting season that is normally allotted for harvesting the bulk of furs, these expectations came true and furs were bought up at high prices⁵¹. But even in those circumstances, not more than 520,000 pelts could be offered at the auction. It might be the evidence of some depletion of the reserves and a decline in the population. The following two years of low prices and respectively reduced commercial hunting pressure on the population enabled the sable population to recover; and, in 2017, the two Russian auctions sold 618,600 sable pelts even with moderate prices. If the next years see growing prices or, at least, the same prices, coupled with reduced sales, it will allow to argue with more confidence that sable removals equivalent to 550,000-600,000 pelts sold

⁵¹ Relative to the high prices at the auctions of December 2013 and January 2014.

through auctions are the limits of commercial hunting pressure that can be sustained by the commercially utilized part of the sable population.

This situation was mainly caused by legislative loopholes. There are two ways to legalize the fur harvested in excess of the quantity specified in the fur harvesting permit:

- 1. Obtain several veterinary certificates⁵² for all harvested furs, each for the number of pelts specified in the permit. The point is that the numbers of the fur harvesting permits are not indicated in the veterinary certificates⁵³ and veterinary certificates may be obtained for practically any number of fur-bearing animals, using the same permits.
- 2. Report the fur harvested in excess of the quotas as purchased from representatives and organizations of the indigenous peoples of the North, Siberia and the Far East with the right to harvest game resources for their own subsistence all year round and in unlimited volumes. At the same time, according to the law, "hunting products obtained through hunting as part of traditional lifestyle and traditional economy shall be used for personal consumption or sold to hunting produce procurement organizations." As of today, there is no definition of a norm for the hunting harvests "needed to meet personal subsistence needs."

The situation is aggravated with the absence of a skin or pelts marking system that could enable to distinguish pelts harvested in compliance with the established quota from those harvested without permits. For this reason, it is impossible to trace the volumes truly harvested by the indigenous peoples of the North, Siberia and the Far East and the pelts harvested in excess of the quotas by other categories of hunters with their trade legalized through obtaining veterinary certificates.

The existing legislative loopholes provide opportunities for the legalization of poached products including furs and other illegal hunting products. As a result, illegally harvested furs are presented as hunting products harvested by the indigenous peoples of the North, Siberia and the Far East, whereby they acquire a legal status and are sold through fur auctions in the volumes significantly exceeding the approved harvesting quotas.

⁵² These are required to deliver furs outside of a given region of Russia and sell them through auctions.

⁵³ The requirement of the Federal Service for Animal and Plant Health Oversight of Russia (Rosselkhoznadzor) to indicate the ID numbers of the licences (coupons to the individual one-time licences) for wildlife removals in the applications for veterinary certificates was rendered unlawful by the Resolution of the Moscow City Arbitration Court dated 6 October 2008 regarding Case No. A40-27800/08-148-308.

This can be illustrated with the following examples:

- In 2013, Evenkia's sable hunting quota was 22,000 animals, with the number of veterinary certificates issued for 115,000 sable pelts.
- In 2011, with the sable hunting quota for Tomsk Region set at 8,040 sables, 37,598 sable pelts were supplied from Tomsk Region, and in 2012, the supply of pelts from and the quota for the region were, respectively, 59,663 and 9,019.
- In Krasnoyarsk Territory, with the hunting quota for the 2011–2012 season set at 63,631 sables, the regional animal health facilities issued veterinary certificates for 240,000 sable pelts.

A similar picture is observed in other commercial hunting areas in Siberia and the Far East.

Since 2010, the utilization rates of the hunting quotas (i.e., the numbers of animals hunted under the purchased permits) have been going down from 92% in 2006 to 58% in 2012 and further to 48% in 2014 due to this loophole that enables illegally harvested furs to penetrate into legal trade under the guise of products harvested through hunting as part of traditional lifestyle and traditional economy. Even though the sable quota share purchased by hunters got reduced almost by half, the fur sales through the St. Petersburg Auction more than doubled.

During the period of 2004–2014, with the more than doubled sales of furs through the St. Petersburg International Fur Auction and the accordingly growing hunting volumes:

- total cost of sold sable pelts that were hunted without permits amounted to about US\$ 344.12 million;
- total formal losses from sable hunting without permits amounted to US\$ 290,72 million;
- public budget revenues from charges for sable hunting increased only by 14%;
- total losses to the regional budgets were about US\$ 4,063,800.

So far, sable is one of the species that are not critically affected by their trade, but potentially, if the situation changes, the threat may emerge. On 16 January 2017, the Board of the Eurasian Economic Commission issued its Resolution No. 2 "On amending the Resolution of the Board of the Eurasian Economic Commission No. 30 dated 21 April 2015 "On nontariff regulation measures" to include live sables into the list of goods covered by the ban of export outside the territory of the Eurasian Customs Union.

4.10. OTHER FUR-BEARING SPECIES

This review covers fur-bearing animal species that are classified as game resources and traded. The table below shows their removals.

Trade in the species referred to as 'other fur-bearing wild animals' is not causing a decline in their population.

Many of these species are traded in the domestic market. As regards the above listed species, only marten is invariably in demand at the international fur auctions that value it similarly to farm-bred sables. Demand for squirrel, stoat and muskrat pelts is fluctuating.

Species	Removals (# of animals)	Species	Removals (# of animals)
Red fox	152,763	Mink	11,883
Arctic fox	414	Wolverine	139
Corsac fox	6,843	Otter	178
Racoon dog	28,856	Hares	472,457
Common racoon	173	Muskrat	91,797
Badger	6,156	Stoat	1,028
Marten	13,532	Squirrel	216,357
Siberian weasel	13,838	Marmots	12,435
Polecats	4,133	Beavers	17,470

 Table 25.
 Removals of selected fur-bearing wild animal species in 2016

Source: National Monitoring of Game Resources and their Habitats, National Hunting Register.

Species	Demand/supply	# of pelts offered	# of pelts sold	Unit costs
Marten (<i>Martes martes</i>)	Steady demand and supply	39,545	28,291	US\$40.8 – US\$124.16
Squirrel (Sciurus vulgaris)	Steady demand, annually changing market performance	4,317,036	2,874,755	US\$1.03 – US\$7.43
Stoat (<i>Mustela ermine</i>)	Steady, unstable, sporadically changing demand	152,193	59,526	US\$2.3 - US\$23.2
Muskrat (Ondatra zibethicus)	In the specified period, muskrat pelts were offered four times at the international fur auctions, but were sold only three times	97,120	45,232	-

Table 26. Trade in selected species in 2005–2016

Species	Number of pelts			
Marten	2,429			
Mink	465			
Otter	49			

Table 27. Number of pelts seizedduring their attempted smugglingout of the EACU in the Far East in2012–2017, according to the FederalCustoms Service of Russia



Figure 18. Number of squirrel pelts sold and their average prices (US\$) at the International Fur Auction Source: Records of the St. Petersburg International Fur Auction



Figure 19. Number of stoat pelts sold and their average prices (US\$) at the International Fur Auction Source: Records of the St. Petersburg International Fur Auction





Figure 20. Number of marten pelts sold and their average prices (in US\$) at the International Fur Auction

Source: Records of the St. Petersburg International Fur Auction



Figure 21. Number of muskrat skins sold and their average prices (in US\$) at the International Fur Auction

Source: Records of the St. Petersburg International Fur Auction

All pelts of red fox, corsac fox, Arctic fox, racoon dog, badger, polecats and Siberian weasel are traded domestically. The recent increase in the buyers' demand for red fox and racoon dog has triggered a respective increase in their removals.

2012		2013		2014		2015		2016	
Popula- tion	Removal								
717.51	175.43	660.69	199.97	567.03	145.42	530.96	178.48	514.14	152.76

Table 28. Red fox population and removals in Russia ('000 animals)

Sources: National Monitoring of Game Resources and their Habitats, National Hunting Register.

Table 29. Raccoon dog population and removals in Russia ('000 animals)

2012		2013		2014		2015		2016	
Popula- tion	Removal								
148.56	18.477	143.95	20.591	118.05	22.67	112.53	28.871	118.40	29.747

Sources: National Monitoring of Game Resources and their Habitats, National Hunting Register.

4.11. AMUR TIGER (Panthera tigris altaica)

S. V. Aramilev

In the early 1990's, poaching of Amur tiger started to grow and became highly prevalent mainly due to the demand for tiger parts and derivatives on the part of affluent people in China and the Russian Federation. The adverse social and economic situation of that time also pushed people to get engaged in illegal hunting that provided an additional source of income when the customs and border protection weakened. By the early 2000's, the illegal trade in tiger parts and derivatives got significantly reduced and stabilized at a certain level. Currently, the exact number of poached tigers cannot be reliably estimated because there are no approved and applied methodologies for estimating illegal removals. Nevertheless, experts estimated tiger removals in the entire Amur tiger range at about 40-50 Amur tigers on average per year in 2000–2013 and at up to 70 in some years. After 2013, when the legislation of the Russian Federation was amended to introduce criminal

liability for illegal trade in high value species, the number of illegally hunted tigers decreased to 20-30 animals, mainly due to the strong performance of the law enforcement agencies implementing the new legislation.

The trade in Amur tiger parts and derivatives is not the only driving force for its illegal hunting, other drivers may account for at least 50% of the total number of removed tigers. For this reason, as well as due to the high natural mortality, the population size of Amur tiger remained at a certain level, amounting to 500 animals.

Illegal trade in different Amur tiger parts and derivatives is fuelled by the demand for traditional Asian medicines as well as for various amulets and décor items, including religious items, and luxury products.

Traditional medicine has been using alcohol tinctures of tiger parts and derivatives (including bones processed in different ways) as pharmaceuticals. When possible, such tinctures are made with the use of a whole tiger carcass, mainly by industrial manufacturers at the so called 'tiger farms.' In addition, tiger penis soups or tinctures are considered as a folk remedy for enhancing sexual potency. At the same time, as found out under a study to assess health effects of 'tiger wine' conducted in 2018, it has no therapeutic effect at all. Mystacial bristles ('moustache') are powdered, dissolved in water and administered 'for bravery' and to attract luck or, sometimes, people sew such substances into clothing or manufacture pendants. Bone powder (especially made of kneecaps) is used to make ointments for treatment of diseases of joints. Fangs and claws are used to make amulets and décor items, including religious items. Skins are regarded as articles of luxury and décor and as a symbol of power.

In the late 2000's, the different flows of tiger parts and derivatives were singled out: citizens of China and Korea started to buy a lot of tiger bones and meat, with their demand for skins going down. But demand for skins arose in Russia itself, mainly among residents of big cities (Moscow, St. Petersburg, Kazan, etc.). In addition, citizens of China organized their own internal trade (among the Chinese) in tiger parts and derivatives within Russia. In this case, they used the acquired Amur tiger parts and derivatives as pharmaceuticals and nutritional supplements when they lived in the Russian Federation.

Currently, tiger parts and derivatives are smuggled into China both for commercial purposes and for personal consumption. In the first case,
unprocessed tiger parts and derivatives are shipped across the border. They are sold to end consumers either directly or through intermediaries. In the latter case (smuggling for personal consumption), processed tiger parts and derivatives are delivered in small volumes, e.g. in the form of bone powder, liquid or small bone fragments (20–30 grams each).

The present-day market of tiger parts and derivatives is full of products, imitating fangs and claws as well as similar parts and derivatives of other look-alike cat species such as lions. Such fakes and analogues are widely spread in Russia.

In Russia, the US\$ prices for tiger parts and derivatives have remained unchanged since the 1990's, but changes in the living standards and currency exchange rates have decreased the attractiveness of these prices for local people who might be engaged in poaching, while the toughened punishments for illegal trade in tiger parts and derivatives are also acting as a disincentive against engagement in the criminal business. Significant profits from selling tiger parts and derivatives to end consumers in China may be gained only by few large international criminal groups that can set up smuggling channels and have connections with representatives of both Chinese and Russian law enforcement agencies. At present, intensive and effective work is underway to expose such criminal groups.

Punishments for illegal trade in tiger parts and derivatives have been toughened in accordance with the latest changes in the Russian legislation. Substantial progress in curtaining illegal hunting of and trade in Amur tigers was triggered by the introduction of new definitions of the elements of offence related to illegal trade, toughened punishments for poaching and illegal trade in wildlife as well as the approval of the list of high value species.

These developments have enabled to resolve the problem of the 'absence of elements of a criminal offence' related, among other things, to the impossibility to estimate the cost of parts and derivatives delivered across the national border of the Russian Federation. Prior to 2011, according to the then-effective Article 188 of the Criminal Code of the Russian Federation, criminal liability arose only in the cases of illegal shipments of goods in large quantities (worth of 1,000,000 rubles or US\$ 15,625) across the border of the Russian Federation. Therefore, earlier, such an action as trade in tiger part or derivative (skeleton fragment, powders) was not recognized as a criminal offence. Experts managed to prove that the cost of goods was sufficiently high to initiate a criminal case and convict the guilty only if a whole Amur tiger skeleton or skin was brought across the border. During a certain period, smuggling of Amur tiger had not been regarded as a criminal offence (after the enactment of Article 226.1 of the Criminal Code of the Russian Federation). After the approval of the list of high value species to be applied for the purposes of Article 226.1 and 258.1 of the Criminal Code of the Russian Federation, criminal liability for illegal trade began to apply regardless of the cost of delivered specimens.

The above-listed legislative measures proved to be fairly effective: in the period of October 2013 – June 2017, 11 criminal cases were initiated for smuggling or attempts to smuggle Amur tiger. In the recent five years, cases of smuggling of tiger parts and derivatives were detected when smugglers tried to cross the border between Russia and China in Amur Region and Jewish Autonomous Region and through Khabarovsk and Primorsky Territories. The greatest quantities (mainly bones and their unprocessed fragments and bone powder or manufactured items) were detected when they were smuggled through Primorsky Territory.

As regards tigers, the Far East Customs Service suppressed a total of 6 cases, including 4 cases in 2015, one case in 2016 and one case in 2018. In addition, such cases were also suppressed by the Border Service that has been successfully detecting such offences since 2013 (5 criminal cases initiated).

Prior to the enactment of Article 258.1 of the Criminal Code of the Russian Federation, those who stored, transported or shipped Amur tiger parts and derivatives received no punishment. Only illegal hunters of wildlife or sellers/ buyers of criminally acquired goods had been brought to account. A striking example of the impunity and gap in the legislation is a 2012 case in which 8 Amur tiger skins were found with a resident of Primorsky Territory who had been buying and storing parts and derivatives of animals listed in the Red Data Book, but due to the absence of criminal liability for such actions, he avoided punishment.

Table 30. Law enforcement to combat illegal trade in tiger parts and derivatives
in 2010–2019 in Primorsky and Khabarovsk Territories ⁵⁴

Martin	Number of criminal	of criminal For Number of		Number of co	ourt verdicts	
Year	cases initiated	Illegal hunting	Illegal trade	dead tigers	Illegal hunting	Illegal trade
2010	6	5	1	8	1	1
2011	0	0	0	0	0	0
2012	3	3	1	15	0	0
2013	7	2	5	5	0	1
2014	6	0	6	13	0	5
2015	13	3	10	13	2	3
2016	10	2	8	10	0	4
2017	17	6	11	18	0	2
2018	8	2	5	5	1	3
	T	3	18			

The maximum fine amounted to RUB 1.3 million (Article 258.1 of Criminal Code of the Russian Federation: an organized criminal group) (*Editor's Note*).

⁵⁴ In the period of 2013–2019, the maximum punishment was 4 years and 10 months of imprisonment in a high-security correctional facility (Articles 258.1 and 226.1 of the Criminal Code of the Russian Federation) for a big batch of wildlife parts and derivatives, including Amur tiger skeleton fragments (3 animals), Amur tiger claws (18 pc.), Amur tiger kneecaps (4 pc.), Amur tiger skin (1 pc.), black and brown bear paws (879 pc.), black and brown bear claws (306 pc.), bear fangs (4 pc.), bear gallbladders (3 pc.), bear kneecaps (6 pc.), bear heart (1 pc.), as well as amber and weapons: an organized criminal group (*Editor's Note*).

In the period of 2013–2019, the minimum punishment was 160 hours of compulsory work (Article 258.1 of Criminal Code of the Russian Federation) for transportation of a skull and bones of one tiger (*Editor's Note*).

5. TRADE IN MARINE MAMMALS

Marine mammals traded in Russia include killer whale (*Orcinus orca*), white whale (*Delphinapterus leucas*), Pacific bottlenose dolphin (*Tursiops truncatus gilli*), Black Sea bottlenose dolphin (*Tursiops truncatus ponticus*), Pacific walrus (*Odobenus rosmarus*), bearded seal (*Erignathus barbatus*), spotted seal (*Phoca largha*), ringed seal (*Phoca hispida*), Caspian seal (*Pusa caspica*) and polar bear (*Ursus maritimus*). This chapter will cover in more detail – based on expert assessments – the issues of trade in killer whales and beluga whales and further provide a brief overview of trade in Pacific walruses and Black Sea bottlenose dolphins, Caspian seals and polar bears.

Species	Category of species according to the national regulation	CITES Appendix	IUCN Red List category and criteria
White whale (Delphinapterus leucas)	Commercial species	Ш	LC
Killer whale (Orcinus orca)55	Commercial species	II	DD
Pacific bottlenose dolphin (<i>Tursiops truncatus gilli</i>)	Commercial species	II	LC
Black Sea bottlenose dolphin (Tursiops truncatus ponticus)	Red Data Book listed species	⁵⁶	LC
Spotted seal (Phoca largha)	Commercial species	NC ⁵⁷	LC
Bearded seal (<i>Erignathus barbatus</i>)	Commercial species	NC	LC
Caspian seal (Pusa caspica)	Commercial species	NC	EN
Ringed seal (Phoca hispida)	Red Data Book listed species	NC	LC
Pacific walrus (Odobenus rosmarus divergens)	Commercial species	111	DD
Polar bear (Ursus maritimus)	Species included in Red Data Book, high value species	II	VU

Table 31. Species of traded marine mammals

⁵⁷ NC - non-CITES listed species.

⁵⁵ Red Data Book of Kamchatka Territory.

 $^{^{\}rm 56}\,$ A zero quota for export has been set up.

Purposes of trade in marine mammals

The trade in marine mammals reviewed in this section can be subdivided according to its purpose as follows:

- trade in live animals removed from the wild for cultural and educational use in oceanariums and dolphinariums or under the aboriginal quota (both domestically and for export to other countries);
- intraregional (Caspian regions) and interregional commercial trade in the parts and derivatives of Caspian seal;
- trade in polar bear parts and derivatives.

The capture of marine mammals not listed in the Red Data Book of the Russian Federation is carried out in Russia for the above-stated purposes on the basis of the orders of the Federal Fisheries Agency distributing the total allowable catch (TAC)⁵⁸ of marine bioresources and the capture permits. TAC represents a scientifically determined annual limit of removal (capture) of a particular species of aquatic bioresources that is calculated for each fishery management basin and for fishery management subzones.

The removal and capture of marine mammals can be also carried out for research and monitoring purposes and for the needs of indigenous peoples of the North, Siberia and the Far East of Russia to sustain their traditional livelihoods and economies. These purposes of removal of marine mammals, other than live capture of Pacific walruses, are not covered in this review.

The subsequent sections will lay out the main issues associated with marine mammal trade and the recommended improvements.

5.1. TRADE IN LIVE MARINE MAMMALS⁵⁹

T.O. Ivannikova, scientific consultant O.V. Shpak

Trade in marine mammals removed from the wild for cultural and educational purposes is highly commercialized, serves well organized markets and yields high profits varying from tens of thousands to millions of dollars per animal depending on the species. The existing legislation regulating the capture of and

⁵⁸ TACs are established and regulated in accordance with the Decree of the Government of the Russian Federation dated 25 June 2009 No. 531 (as amended on 1 April 2018).

⁵⁹ Data provided by O. A. Filatova, L. M. Mukhametov and the regional public organizations Sakhalin Environment Watch and Marine Mammal Council have been used in the preparation of this chapter.



trade in marine mammals features multiple gaps and corruption risk factors⁶⁰ such as discrepancies between the regulations on their capture and subsequent use (animals captured for cultural and educational purposes are used commercially including for sales abroad)⁶¹, absence of the rules for the capture, transportation of all species of marine mammals developed with due regard to the requirements and biological characteristics of particular species of marine mammals (there are no rules for pinnipeds, the Rules for the capture and transportation of cetaceans for research, cultural, educational and other non-commercial purposes, approved by the Government of the Russian Federation of February 25, 2000 No. 166 have shortfalls). Experts also note the absence of legal norms that would take into account the specificity of life cycle of marine mammals and their range (marine mammals are treated as aquatic bioresources and not segregated into a separate legal category, hence the regulation of their conservation and use does not take into account their specific features)⁶². Before 2020 marine mammals were legally treated as aquatic bioresources, it made them subjected to the rules that put multiple authorities in charge of their conservation and/or use while failing to assign clear and unambiguous mandates for the control and oversight of their trade (other than in exceptional cases).

Trade in marine mammals is mostly export oriented. Since 2012 the number of companies that receive marine mammal capture quotas has increased from 3-5 to 14 [Shpak, Glazov, 2013].

 $^{^{\}rm 60}\,$ M.A. Krupskiy. Note on the results of the anticorruption assessment of the regulatory acts on wildlife trade in the area of environmental and related law.

⁶¹ Official statement of the Marine Mammal Council on several acute issues related to the study, conservation and use of marine mammals. December 2018 [in Russian]. (http://marmam. ru/news/sobytiya/ofitsialnaya-pozitsiya-soveta-po-morskim-mlekopitayushchim-po-ryaduostrykh-voprosov-kasayushchikhsya/

⁶² Abstracts of the 10th International conference "Marine mammals of the Holarctic" dedicated to the memory of A.V. Yablokov (2018).

The total declared value of killer whales, beluga whales and walruses exported for the period from 2012 to 2018 reached \$24.3 million⁶³. Beluga whales accounted for the largest number of exported animals during this period, with walruses and killer whales also being steadily supplied to oceanariums.

In the view of the growing demand from foreign oceanariums and inadequate regulation of the marine mammal capture activities, the following aspects of the existing marine mammal trade can cause damage to certain species populations:

- Lack of up-to-date information on the status of marine mammal populations hinders proper assessment of potentially negative consequences of their removal from the natural environment. The determination of TACs does not take into account biological features of the population structure, geographic boundaries of the population habitat⁶⁴, nor does it involve a comprehensive assessment of the population size⁶⁵.
- Absence of such data would render doubtful any non-detriment finding for the international trade in the most actively traded species of marine mammals, a CITES requirement.
- TACs in 2017 were determined without due regard to the provisions of the federal legislation on environmental assessment⁶⁶, which renders illegal the issuance of any subsequent permits for capture and trade, as well as any subsequent capture and trade itself.
- Intensive capture that is confined to one range location can undermine viability of certain stocks of marine mammals.

⁶⁶ Regional public organization Sakhalin Environment Watch (https://ecosakh.ru/2018/12/08/ ekovakhta-sakhalina-klub-bumerang-i-druzya-okeana-vyigrali-sud-v-zashchite-kosatok/)

⁶³ Customs database of foreign trade activities of Russia. The invoice value in the customs declaration includes freight, according to shipment terms.

⁶⁴ Rather than being calculated for a specific population of mammals, TAC is determined for a geographically defined fishery management subzone that can be home to a small part of the population particularly exposed to a continuous catch pressure. Resource utilization pressure is not being uniformly spread over the fishery management subzone. For example, beluga whales were, until 2018, being caught exclusively in the Sakhalin Gulf while their TAC was being set for the entire northern subzone of the Sea of Okhotsk.

⁶⁵ Most populations of all commercial species in Russia are studied insufficiently or not at all. For almost all populations, the biological justifications of TACs are based on Soviet-era data that are outdated and often taken from methodologically flawed studies or from expert opinions. Without adequate data, one cannot assess potential detriment of species removal. Once marine mammals have been excluded from commercial fisheries, they stopped being a research priority for the Federal Fisheries Agency and for the marine fisheries institutes involved in TAC determination. Hence, the government does not allocate enough funds for the regular monitoring of commercially used species of marine mammals. These institutes lack laboratory personnel skilled in modern research methods.

- The actual use of marine mammals can differ from their declared purpose of capture⁶⁷ whereby the animals removed for cultural and educational use are being commercially exported abroad.
- Given the remote locations, local systems of control over the capture of marine mammals are not duly established (often with no locally based state inspectors), capture is carried out with the high risk of animal death and no reporting of such deaths).

Beluga whale (Delphinapterus leucas)

Beluga whales are sourced for commercial trade from their capture for cultural and educational use. Russia is presently the only country that supplies beluga whales from the wild to the global market of marine mammals. In 2012–2018, the following five companies accounted for 86 percent Russia's export of beluga whales: Primorsky Aquarium, LLC Rehabilitation Center "Dolphin and I", Pacific Fisheries Research Center TINRO-CENTER, LLC Bely Kit and the Sochi dolphinariums.

China is the lead importer, being the destination for 84% of beluga whales from Russia. The Republic of Korea takes another 7%, with the remainder going to Japan and Ukraine.

In 2012–2018, Russia has exported 159 beluga whales with the total declared value of 10.05 million⁶⁸.

It is noteworthy that the review of the beluga whale exports data for 2012–2016 has revealed significant discrepancies between the number of animals permitted for export by the Federal Service for Supervision of Natural Resource Management, the number of exported animals according to the Customs database of foreign trade activities of Russia and the number of animals recorded as exported in the CITES trade database from the exporter and importer data. These discrepancies (*see the table 32*) can be explained by technical issues, data exchange issues and other latent factors that should be explored jointly with the Federal Service for Supervision of Natural Resource Management and the Federal Customs Service.

 $^{^{67}\,}$ The procedure for fisheries for educational and cultural purposes does not allow exporting aquatic bioresources.

⁶⁸ Customs database of foreign trade activities of Russia.

Year	Number of beluga whales with export permits of the Federal Service for Supervision of Natural Resource Management	Number of beluga whales that crossed the border according to the Customs database of foreign trade activities of Russia	Number of beluga whales recorded in CITES trade database as exported from Russia, from exporter data	Number of beluga whales recorded in CITES trade database as imported from Russia, from importer data
2012	72	17	29	20
2013	76	38	40	31
2014	82	39	34	37
2015	55	24	29	39
2016	73	41	0	47
Total	358	159	132	174

Table 32.	Data on	the export	of beluga	whales	from F	Russia, 2	2012-2016
		1			/		

The declared value⁶⁹ of a white whale in customs can vary from \$16,000 to \$120,000⁷⁰, which can be influenced by conditions of capture, demand level, shipment and contractor details, tax transactions and other latent factors.

The main threat from the existing trade is its potential damage to the size of the resident groups of the Sakhalin-Amur population of beluga whale. The following factors determine this threat:

• White whale TACs are determined for fishery management subzones without accounting for the distribution of specific reproducing herds that are demographically and seasonally segregated.

In this regard, the International Whaling Commission recommended delineating two independent groups of beluga whales corresponding to the North Okhotsk and West Okhotsk populations when determining their TACs.

• The actual live capture has been for a long time concentrated on a single area and carried out by several teams of catchers operating simultaneously [Shpak, Glazov, 2013].

From 1986 to 2017, the live capture of beluga whales for cultural and educational purposes was carried out on the basis of the TAC for the North Okhotsk subzone within a single area of 15 sq. km near Baydukov Island and Chkalov Island in the Sakhalin Gulf⁷¹.

• Selective capture of young (2- to 3-year-old), preferably female, specimens [Shpak, Glazov, 2013] increases the risk of undermining the

⁶⁹ Both the invoice value and the statistical value are declared.

⁷⁰ Customs database of foreign trade activities of Russia.

⁷¹ This contradicts the 2017 recommendations calling for an even distribution of the TAC load across all approved fishery management subzones.

reproductive potential of the target whale group. This capture pattern is driven by animal transportation specifics and easier adaptation of females to oceanarium conditions, as well as by the owners' interest in the subsequent captive breeding of animals.

• The actual capture of beluga whales (90 animals in 2018) exceeds the potential allowable catch of 42 animals per year.

Experts note that, until 2012, the annual capture of beluga whales (averaging at 22 animals) was not damaging in any meaningful way the Sakhalin-Amur group of the North Okhotsk subzone as it was significantly lower than the TAC and not critical for sustaining the herd size in the Sakhalin Gulf. The capture started increasing from 2012 driven by the growing demand. Following the 2015–2017 restrictions on the live capture of beluga whales, the demand from China has further increased, which triggered the capture surge of 90 animals in 2018.

Commercial trade creates threats to the target group of beluga whales not only because of the high number of captures, but also due to high mortality at capture⁷², transport and holding, strict selection by age and gender, exposure to serious disturbance and chronic stress.

TAC of beluga whales has to be based on sufficient and reliable information on the state of their population and the environmental impact assessment. To date, to comply with CITES requirements, NDF assessment for the most actively exported species of marine mammals from Russia has not been carried out.

Killer whale (Orcinus orca)

Killer whales are sourced into commercial trade from their capture for cultural and educational purposes. Russia is the sole exporter of wild-captured killer whales, and China is their sole importer to meet the needs of its fast-growing oceanarium industry. Zhuhai Chimelong Investment & Development Co Ltd, one of the main importers of beluga whales, owns the world's largest oceanarium (Chimelong Ocean Kingdom) that has 9 killer whales from Russia⁷³.

⁷² An update report on the white whale (*Delphinapterus leucas*) live captures in the Okhotsk Sea, Russia by O. Shpak and D. Glazov states: "Eighty-one belugas were captured and transported to holding facilities; 34 were believed to have died during the capture operations; 7 died during temporary holding at the capture camps; three captured belugas were considered at risk of dying and were released. Four of the nine recovered carcasses bore signs of net entanglement. We believe, the competition among capture teams and an attempt to capture a large number of whales during a short capture season have resulted in such high mortalities."

⁷³ https://www.hakaimagazine.com/features/sale-wild-russian-killer-whales/

In 2012–2018 Russia exported 13 killer whales with the total declared value of \$12.3 million⁷⁴. The declared value⁷⁵ of one animal varies from \$485,000 to \$1,350,000 including freight. Experts note that such levels are understated considering that de facto values reach as much as \$6 million per animal as can be seen at oceanarium websites⁷⁶. These discrepancies can be caused by tax-related transactions and other latent factors.

Four companies are the main suppliers of killer whales in the Russian marine mammal market: Bely Kit, Oceanarium DV, Afalina and Sochi Dolphinarium.

The main threat from killer whale trade is its potential damage to the size of specific killer whale populations that can be caused by the following factors:

- 1. Killer whales are treated as a unified stock for the purposes of TAC determination. However, research data [Parsons et al. 2013; Filatova et al., 2014] show that the Far Eastern killer whales are subdivided into two reproductively isolated forms: resident and transient, differing in their genetics, ecology and behavior. Therefore, IUCN [Taylor et al., 2013] and the International Whaling Commission's Scientific Committee [International Whaling Commission, 2015] recommended managing them as separate stocks.
- 2. TACs are being approved in the absence of up-to-date information on the numbers and population structure of killer whales⁷⁷ in the Russian Far East.

Experts estimate the total population of transient killer whales in the seas of the Russian Far East not to exceed 500–600 animals, including 300–400 mature ones [O.A. Filatova, personal communication]. During a seven-year study period, about 800 resident killer whales and only 25 transient killer whales have been identified in the waters of the Commander Islands. About 240–260 transient killer whales have been recorded in the northwestern part of the Sea of Okhotsk [Shpak et al., 2016].

Nevertheless, the submission by the Pacific Fisheries Research Center (TINRO) for the 2020 TAC approval quoted the total population of killer

⁷⁴ Customs database of foreign trade activities of Russia.

⁷⁵ The customs declaration shows the invoice value.

⁷⁶ http://www.langya.cn/lyxw/jrgz/201601/t20160127_386416.html

⁷⁷ The Russian Federal Research Institute of Fisheries and Oceanography (VNIRO) and other fisheries institutes have not carried out killer whale population surveys for more than 12 years. In the Sea of Okhotsk where killer whale capture is presently allowed, its population assessment was based on unverified data from Japanese vessels. According to VNIRO, the population is assessed at 2,500–3,000 animals, but the source data and calculation parameters are not accessible to independent experts.

whales as a single stock comprising 2,027 animals. The TINRO filing conveyed that "given the lack of data on the population parameters of the Sea of Okhotsk killer whales, the theoretically acceptable level of commercial removals is calculated using the method of potential biological removals."

- 3. The capture pressure is distributed unevenly. Since 2011, capture activities are conducted in the coastal shallow waters of the western part of the Sea of Okhotsk where transient killer whales are removed from nature, with inevitable damage to the already small population. The prevailing practice of transient killer whale removals was confirmed by the 2018 capture results all captured killer whales were transient⁷⁸.
- 4. The species exhibits a relatively low reproduction rate (3% or less) and a high mortality of offspring in the first six months of life (over 40%)⁷⁹.

Experts have also noted that TACs for killer whales are frequently reviewed and approved through state environmental assessments that are executed outside of the legally prescribed time period⁸⁰ as well as by additional orders that retroactively amended the already approved TACs⁸¹ such as e.g. for 2017 and 2018 (*Table 33*) and without any use of due justifications such as new data on the population size⁸², which indicates the shadow nature of the TAC approval process without regard to science and public comments.

⁷⁸ "...It has been established that 11 killer whales were pre-puberty juveniles belonging to the transit subspecies listed in the Red Data Book of Kamchatka Territory." The Investigative Committee of Russia. News statement, 16 November 2018. [In Russian.] https://sledcom.ru/ news/item/1272450/.

⁷⁹ The killer whale population of the Avacha Gulf of Kamchatka grows at the rate of 0.9% per annum, which is lower than the removal rate of 1% that VNIRO considers safe. <...> the impact on the population is twice higher than if both sexes were removed in equal share.

⁸⁰ The Prosecutor General's Office of the Russian Federation. News statement dated 18 October 2018. [In Russian.] https://genproc.gov.ru/special/smi/news/news-1469142/

⁸¹ Order of the Ministry of Agriculture of the Russian Federation dated 10 October 2016 No. 445 (http://docs.cntd.ru/document/456019371).

⁸² In 2014, the Federal Service for Supervision of Natural Resource Management issued a negative conclusion on the Federal Fisheries Agency proposal for a TAC for killer whales (10 animals) due to the lack of its justification. Nevertheless, the TAC for killer whales was adjusted in 2017 and 2018 despite the absence of any new scientific data on their stocks, which was in violation of the provisions of the Decree of the Government of the Russian Federation. While the capture of killer whales has taken place in the Sea of Okhotsk almost every year since 2012, TAC documentation fails to include any data on how many killer whales have been captured and when over the last 6-year period, which constitutes a serious deficiency in the scientific justification of the TAC. The TAC authors themselves have admitted that "it was presently impossible to determine the biological targets and justify the capture regulation rule due to the poor information support of the forecast."

Zone/year	2012	2013	2014	2015	2016	2017 ⁸³	2018
North Okhotsk subzone	6	6	-	6	4	4	6
West Kamchatka subzone	2	2	-	2	2	2	3
Kamchatka-Kurils subzone	-	-	-	-	2	2	2
East Sakhalin subzone	2	2	-	2	2	2	2

Table 33. Total allowable catch for killer whales in 2012–2018 (individuals)

Expert data further show that the absence of an effective control system allows capture teams to use outdated permits to legalize captured killer whales or killer whales capture outside the places of capture specified in the permits.

Oversight authorities have also cited violations related to trade in killer whales captured for research purposes, e.g., TINRO Center received a warning in 2015 on the inadmissibility of moving killer whales captured for research and monitoring purposes across the customs border of the Russian Federation⁸⁴.

The consequences of the accumulated problems of killer whale and white whale removals for further trade peaked in 2018. The capture of 11 killer whales and 90 beluga whales in 2018 gained unprecedented publicity and triggered a response from the competent authorities. Export permits for the captured animals were denied. The responses of the state oversight authorities confirmed the illegality of killer whale capture based on the violation of the State Environmental Assessment procedure and the fact that the rights to capture marine mammals had been granted to the organizations effectively selling animals to Chinese companies, which is against the provisions of the law prohibiting the commercial use of such animals outside of the Russian Federation⁸⁵. Furthermore, the Primorsky territorial branch

⁸³ This line item was retroactively added to the Order of the Ministry of Agriculture dated 10 October 2016 No. 445 by the order dated 17 July 2017 No. 349. The Federal Fisheries Agency's website does not display the latest revision of the TAC for killer whales.

⁸⁴ According to Article 3.1 of the Federal Law "On fisheries and conservation of aquatic biological resources," the aquatic bioresources captured in the process of fisheries for research and monitoring purposes are considered withdrawn from trade and may not be sold. Such bioresources "shall be used only for the stated purposes... and returned into their habitat after the completion of these activities."

⁸⁵ The Prosecutor General's Office of the Russian Federation. News statement dated 22 November 2018. [In Russian.] http://www.genproc.gov.ru/smi/news/genproc/news-1497052

of the Investigative Committee of the Russian Federation initiated a criminal case into the illegal catch of bioresources. The Khabarovsk territorial branch of the Investigative Committee of the Russian Federation initiated a criminal case on the grounds of a crime under Article 245 of the Criminal Code (animal cruelty)⁸⁶. Based on the detected violations, the courts in June 2019 fined Oceanarium DV, Bely Kit, Sochi Dolphinarium and Afalina in the respective amounts of RUB 56.429 million (~US\$ 881,700), RUB 28,173 million (~US\$ 440,200), RUB 37,601 million (US\$ 587,515) and RUB 28.176 million (US\$ 440,250) for the breach of fishing rules.

Regardless of the above problems and notwithstanding the negative conclusion of the State Environmental Assessment on the proposed 2019 TAC for killer whales, the Federal Fisheries Agency of Russia and the Russian Federal Research Institute of Fisheries and Oceanography (VNIRO) have initiated a procedure of public consultations on the draft TAC for killer whales making the case for the removal of 10 animals in 2020. Following the high level of public scrutiny over this case, the procedure resulted in the establishment of a zero quota. At the same time, the listing of the Far Eastern transient population of killer whales in the Red Data Book of the Russian Federation is also under consideration so as to prohibit its catch altogether.

TAC of killer whales has to be based on sufficient and reliable information on the state of their population and the environmental impact assessment. To date, to comply with CITES requirements, NDF assessment for killer whales has not been carried out.

Pacific walrus (Odobenus rosmarus divergens)

Walruses are primarily sourced into trade from their capture for cultural and educational purposes, much was which is for export. Russia is the sole exporter of wild-captured walruses for the needs of oceanariums, mostly in China. Given the present restrictions on the walrus capture that have been in force since 2014, oceanarium demand for walruses has now significantly increased, thus potentially creating conditions for a further increase in walrus capture.

In 2012–2018 Russia exported 49 Pacific walruses with the total declared value of \$1.95 million. *The review of the walrus exports data for 2012–2016*⁸⁷ has revealed significant discrepancies between the number of animals permitted for

⁸⁶ Ibid.

⁸⁷ https://trade.cites.org

export by the Federal Service for Supervision of Natural Resource Management, the number of exported animals according to the Customs database of foreign trade activities of Russia, and the number of animals recorded as exported in the CITES data base from the exporter and importer data. These discrepancies (see the Table 34) can be explained by technical issues, data exchange issues and other latent factors that should be explored jointly with the Federal Service for Supervision of Natural Resource Management and the Federal Customs Service.

The following four companies account for 81 percent Russia's export of walruses: Sochi Dolphinarium, Primorsky Aquarium, LLC Bely Kit, and Pacific Fisheries Research Center TINRO-CENTER.

Year	Number of walruses with export permits of the Federal Service for Supervision of Natural Resource Management	Number of walruses that crossed the border according to the Customs database of foreign trade activities of Russia	Number of walruses recorded in CITES trade database as exported from Russia, from exporter data	Number of walruses recorded in CITES trade database as imported from Russia, from importer data
2012	0	6	10	7
2013	54	18	22	17
2014	30	20	20	22
2015	0	5	0	16
2016	0	0	0	0
Total	84	49	52	62

Table 34. Export of walruses from Russia in 2012-2016

The declared value of a walrus⁸⁸ varies widely between \$15,000 and \$150,000, which can be influenced by the demand features, capture restrictions, contractor details, tax transactions and other latent factors. Similar with other species reviewed above, walrus trade is highly profitable and exhibits the same general issues of marine mammal trade. What makes it distinct from other species is the involvement of indigenous people in walrus live capture activities. Starting from 2018, bringing live marine mammals ashore is no longer allowed during traditional fisheries.

Regulation of these activities is also far from being effective in the remote areas of Chukotka. For example, the absence of inspectors during capture

⁸⁸ The customs declaration shows the invoice value.

can enable illegal capture of juvenile walruses⁸⁹ and the encroachment on their rookeries – this can in turn trigger panic dives of the animals, which frequently kills them, while no record is being made of the animals killed during capture. Such practices are forbidden by the Rules of fishing in the Far Eastern Fisheries Management Basin⁹⁰.

Local enforcement authorities in the areas of capture (such as the Border Service) are also poorly familiar with the Rules of fishing, which further reduces the effectiveness of supervision over the activities of capture teams.

Black Sea bottlenose dolphin (Tursiops truncatus ponticus)

Commercial use of Black Sea bottlenose dolphins has been prohibited since 2003, and their captivity is only allowed for conservation and reproduction, as well as for research, cultural and educational purposes. The value of one dolphin is estimated at US\$ 47,000⁹¹.

According to the Federal Service for Oversight of Natural Resource Management of Russia, permits for keeping 60 Black Sea bottlenose dolphins were issued in 2016. The recently enacted Federal Law "On the responsible treatment of animals..." has banned mobile dolphinariums, therefore, all marine mammals that have been held there shall now be transferred to other facilities.

Stationary dolphinariums are only allowed to host those bottlenose dolphins that were born in captivity or captured before the introduction of the capture ban. Experts note that sometimes the trade in bottlenose dolphins is marred by the cases of illegality of their capture. In a recent case in 2017, the Border Service Department has exposed the poaching of three dolphins

⁸⁹ In December 2018, the Federal Service for Supervision of Natural Resources Management of Russia sent an appeal to the Prosecutor General's Office of the Russian Federation to conduct an inspection of the fact of capture of 45 walruses by the members of the Daurkin territorial neighborhood community under the indigenous lifestyle support quota and their subsequent sale to LLC Odissey for export to China that can constitute a possible violation of the Rules of catch (capture) of aquatic bioresources to support traditional lifestyle and exercise traditional economic activities of indigenous peoples of the North, Siberia and the Far East (the walruses planned for export were 6–7 months old).

⁹⁰ Approved by the Order of the Ministry of Agriculture dated 1 March 2007 No. 171. Section 17.19 of these Rules prohibits the catch and capture of Pacific walruses: (a) with the use of any tools and means other than by permitted rifles and with mechanisms available for immediate onboarding of a captured animal; (b) at coastal rookeries; and (c) nursing females with offspring.

⁹¹ URL: https://www.kommersant.ru/doc/3481276

for a dolphinarium in Krasnodar Territory⁹². Without the effective control over the trade in marine mammals and with no rules for their registration in captivity, violations were also uncovered with regard to the captive keeping and use of dolphins without proper permits until 2020⁹³.

Russia is presently importing Pacific bottlenose dolphins (*Tursiops truncatus gilli*) from Japan for commercial use. Eighty such animals were imported into Russia in 2012–2018 (44 dolphins were exported from Japan). The imported dolphins are subject to high mortality after transport. Furthermore, temperature regimes of Russia's dolphinariums are ill-adapted for keeping this thermophilic subspecies of dolphins.

Experts note that the absence of control over the trade in marine mammals and their registration in captivity (including genetic registration and individual identification of marine mammals in dolphinariums) allows the legalization of illegally captured Black Sea bottlenose dolphins under the disguise of Pacific bottlenose dolphins whose official import documentation is reused after their death.

5.2. TRADE IN MARINE MAMMAL PARTS AND DERIVATIVES

Caspian seal (*Pusa caspica*)⁹⁴ *I. V. Ermolin, T. O. Ivannikova*

Caspian seal (*Pusa caspica*) is a Caspian Sea endemic and its only of marine mammal species. As its population shrunk by about 90 percent at the beginning of the 21st century, Caspian seal was added to the IUCN Red List of endangered species. Commercial catch was the primary driver of its recent population decline. Human-induced mortality⁹⁵ remains its most significant threat to date. This review focuses on the commercial catch of Caspian seals.

⁹² https://krasnodarmedia.su/news/649486/. Investigators have established that members of one of the fishing brigades, hiding behind official fishing activities, used mullet fixed nets to illegally capture bottlenose dolphins. A criminal case was opened under Article 256 of the Criminal Code of the Russian Federation ('Illegal catch of aquatic biological resources').

⁹³ Executive license of the Federal Service for Supervision of Natural Resources Management on the trade in species listed in the Red Data Book of the Russian Federation.

⁹⁴ Based on analysis and findings provided by L. Dmitrieva, S. Gudman, I. Ermolin, L. Svolkinas

⁹⁵ https://www.iucnredlist.org/species/41669/45230700

Caspian seal is listed as a commercial species⁹⁶. The Caspian Commission on Bioresources is mandated to determine annually its TAC; for Russia, it was set at the annual level of 6,000 animals in 2014–2017, 6,440 animals in 2013 and 7,330 animals in 2012. In 2016, the Caspian Fisheries Research Institute (CaspNIRKh) calculated the total catch limit of 12,000 seals for all Caspian littoral states [Dmitrieva et al., 2013; Ermolin and Svolkinas, 2018].

However, the Russian and international scientific communities differ in their estimations of the seal population size. Herkonen et al. gauged the Caspian seal population at about 100,000 animals, while CaspNIRKh tallied it at 260,000 animals⁹⁷. An international conference on Holarctic marine mammals in 2018 highlighted an abrupt decrease in the Caspian seal populations at their known haul-out sites that previously used to host thousands of animals and where only singular animals could be spotted now⁹⁸.

Parts and derivatives of Caspian seal enter commercial trade.

Skins are the main seal product – they are traded primarily in Dagestan, for the production of skin coats, hats and caps, boots and shoes to be sold both within the Caspian region and outside (mainly in the Far North regions of Khanty-Mansi and Yamal-Nenets as well as Moscow and St. Petersburg). Four- to five-month-old seal pups sold to intermediaries and craftsmen vield highest sales margins [Ermolin and Svolkinas, 2018]. Sales prices depend on the type and quality of goods: US\$ 20-70 per cap⁹⁹, US\$75 per pair of boots or shoes, up to US\$ 1,500 per skin coat (5-6 pup skins per coat). Seal fat is sold in Dagestan and the Volga Delta areas as a secondary product, often with targeted demand. It is a product of choice for residents of coastal, mountain and foothill communities, rheumatism patients of pre-retirement and retirement age, as well as for the treatment of tuberculosis in detention facilities across Russia (fat shipments mainly going from the Volga Delta communities). According to Dmitrieva et al. (2013), seal fat was sold for US\$14 per liter at the markets in Turkmenistan. L. Beloivan reported the price of RUB 400 (US\$ 6) per quarter-liter of fat at a market in Makhachkala.

⁹⁶ As determined by the Order of the Ministry of Agriculture of the Russian Federation dated 16 October 2012 No. 548 "On the approval of the lists of species of aquatic bioresources subject to commercial and coastal fishing."

⁹⁷ https://cyberleninka.ru/article/v/sovremennoe-sostoyanie-populyatsii-kaspiyskogo-tyulenya

⁹⁸ https://newizv.ru/news/society/16-11-2018/rossiya-dobila-kaspiyskogo-tyulenya

⁹⁹ https://www.novayagazeta.ru/articles/2017/03/25/71908-zhili-osvezhevali

Seal products are distributed through a wide range of intermediaries in the mountain and foothill areas of Dagestan who have their own high-capacity cold rooms and run year-round operations. According to I.V. Ermolin, the situation is different in the Volga Delta communities where separate catch teams (2–3 per village) bring seals ashore to melt the fat to order and store it in their home refrigerators (skins are not used).

Despite the continued issuance of TAC quotas, legal catch of the Caspian seal is not economically feasible at present. Intentional illegal catch and bycatch during legal and illegal fisheries are currently the actual sources of Caspian seal trade.

Experts are not unanimous in estimating the ratio between intentional illegal catch and bycatch and, instead, use the term 'intentional bycatch' that combines animals sourced from intentional catch and bycatch. The bulk of seal bycatch entering trade comes from fishing nets, and some of it – from other fishing gear (local versions of seine and trotline).

Entanglement in sturgeon poaching nets and illegal catch are the main causes of death of at least several thousand seals every year. The study by Dmitrieva et al. (2013)¹⁰⁰ recorded a documented minimum by-catch of 1,215 seals in the survey sample (31 boats) for the 2008–2009 fishing season, 93% of which occurred in illegal sturgeon fisheries. The authors reported that "the documented minimum by-catch may account for 5 to 19% of annual pup production" and further concluded that "sturgeon poaching therefore not only represents a serious threat to Caspian sturgeon populations, but may also be having broader impacts on the Caspian Sea ecosystem by contributing to a decline in one of the ecosystem's key predators"¹⁰¹.

A study by Ermolin and Svolkinas (2018) reported a bycatch of 788 seals¹⁰² from 15 boats, which is about 32% higher than the bycatch levels documented by Dmitrieva et al. for 2008–2009.

Caspian seal derivatives are commonly found together with sturgeons during illegal trade interdictions.

The published studies for 2008–2009 and 2013–2016 [Dmitrieva et al., 2013; Ermolin and Svolkinas, 2018] only reflect the estimated levels of Caspian seal

¹⁰⁰ https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0067074#s1

¹⁰¹ Ibid.

¹⁰² In addition to seals, those boats brought in 10.5 tons of sturgeons.

Interdiction date	Interdicted amount	Economic damage (for seals)
16.04.2016	Over 70 seal skins and 250 kg of sturgeon	~ RUB 210,000 (US\$ 3,280)
19.04.2017	200 sturgeons (total weight 780 kg), 1 kg of caviar and 11 seal skins	~ RUB 33,000 (US\$ 515)
14.06.2017	Over 400 kg of sturgeon, 2 seal skins and black caviar	~ RUB 6,000 (US\$ 94)
16.05.2018	160 seal skins and 4 sturgeons	~ RUB 480,000 (US\$ 7,500)

Table 35. Seal skins s	seizures cases
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catch and cannot be directly extrapolated to the entire Caspian region due to the absence of bycatch rate data. However, expert estimates allow to assume an annual removal of several thousand seals (including decomposed carcasses left at sea) in 2013–2016. An analysis of seal population demographics would be needed in order to assess the negative impact of such removal levels.

It is hardly possible to estimate the total economic damage from illegal Caspian seal trade considering the lack of complete data on all interdictions that, in turn, would only reflect a small fraction of the total illegal trade volume. Researchers presently carry on with their analyses of relationships between seal catch and fisheries using targeted surveys of fishermen and sellers. This methodology provides for a better understanding of the total bycatch of seals from fisheries.

Seal bycatch in illegal fisheries is a socioeconomic phenomenon [Ermolin and Svolkinas, 2018] that is distinguished by the intentional nature of removal and feeds an extensive distribution network of seal skins and fat within and outside the region.

Residents of coastal communities involved in illegal seal catch comprise the first segment of the market structure. According to the data that is still being analyzed, seal catchers are organized in teams [Ermolin and Svolkinas, 2016; 2018].

The following elements are the key drivers of illegal trade in Caspian seal:

• sociocultural factors¹⁰³ (criminogenic environment has been prevalent in the local communities of Caspian seal catch and distribution since the early 1990's);

¹⁰³ https://link.springer.com/article/10.1007/s10531-016-1211-x

PART II Analysis of Wildlife Trade

- corruption risk factors (weak enforcement of coastal fisheries);
- socioeconomic factors (high unemployment, absence of alternative livelihoods, etc., in the areas of Caspian seal catch and distribution).

Currently there is no possibility of constructing demographic population models extrapolated to the entire Caspian basin to assess the long-term effects of the current volume of the trade in Caspian seals on the population.

Due to the lack of sufficient data to assess the impact of the illegal trade in the Caspian seals on the species, additional studies are required.

Polar bear (Ursus maritimus) T. O. Ivannikova

In Russia, polar bear hunting has been banned since 1957, and illegal trade in this species entails criminal liability. Nevertheless, parts and derivatives of the polar bear (primarily, skins) are illegally traded. Table 36 describes selected cases of illegal trade in polar bear skins in 2015–2018.

According to sociological surveys conducted in 1999–2012 in Chukotka, polar bear skins accounted for 17% of the total volume of various fishery and hunting products for trade which were sold in 2011 by hunters in Chukotka (along with seals, walrus fangs and fur animals) [Kochnev A., Zdor E., 2014].

In Russia, legal trade in polar bear parts and derivatives includes their imports from Canada where polar bear hunting is allowed. According to the CITES database, 63 big parts and derivatives of the polar bear were imported into Russia from Canada in 2012–2016.

Due to the absence of a system to identify and track the origin of wildlife parts and derivatives for their legality assurance in Russia, there is a risk of trade in illegally harvested polar bear skins of Russian origin disguised as skins imported from Canada. Special efforts are necessary to monitor internet trade because it is impossible to check the availability of documents confirming the legality of the origin of parts and derivatives. In 2018, five sales ads of polar bear skins were found in the Russian-language segment of the Internet with prices ranging from US\$ 26,500 to US\$ 55,000. It is noteworthy that only one of the Internet stores provided information about the availability of polar bear skin documents on its website.

Table 36. Selected cases of illegal trade in polar bear skins in 2015-2018	;
(based on published judicial decisions)	

Locations, year	Offences	Court verdicts
Novy Urengoy, Nenets Autonomous District, 2015	Illegal harvest and trade	200 hours of compulsory works
Naryan-Mar, Nenets Autonomous District, 2016	Illegal acquisition, storage, shipment and sale of polar bear skins	350 hours of compulsory works; 10 months of correctional labour with deduction of 10% of the salary to be paid to the Treasury
Naryan-Mar, Nenets Autonomous District,2016	Illegal acquisition, storage, shipment and sale of polar bear skins	200 hours of compulsory works
Khabarovsk, Khabarovsk Territory, 2017	Illegal trade	6 months of correctional labour with deduction of 10% of the salary or other incomes to be paid to the Treasury
Yamal-Nenets Autonomous District, 2018	Illegal trade	1 year of conditional imprisonment with two-year probation. Fine, amounting to RUB 312,000 (US\$ 4,875)

CITES specimen (polar bear parts and derivatives)	Quantity
Bodies	6
Rugs	2
Skins	31
Skulls	24
Bones	57
Teeth	4

Table 37. Polar bear parts and derivatives imported into Russia in 2012–2016

PART III Online wildlife trade

Experts of Group-IB, T.O. Ivannikova

The rapid development of the Internet and continuous growth of its user base creates ample opportunities for online wildlife trade instead of traditional markets throughout the world, and Russia is no exception. These opportunities can be used for both legal and illegal trade.

Wildlife trade on the Internet in Russia is regulated by the same norms as conventional (off-line) trade. Shortcomings of wildlife trade regulations in Russia are analyzed in detail in part I "Wildlife trade regulations."

The only restrictions that can specifically apply to online wildlife trade include the ban on the online trade of goods that are restricted or banned from public distribution by the laws of the Russian Federation and the ban on the publication of the information that constitutes a criminal or administrative offense. Such information includes, inter alia, ads offering to sell or buy animals that are restricted or banned from trade. Nevertheless, it is particularly difficult to distinguish legal wildlife trade on the Internet from the illegal one. One of the reasons is that it is impossible to verify the origin of an animal in an online trade transaction; another is that Russia does not have the rules of trading in certain wildlife categories (e.g., CITES specimens within Russia) that would ascertain the legality of trade.

Online resources offer a wide variety of animals, their parts and derivatives that are either restricted or banned from trade or entirely untouched by the current legislation. One can find online ads selling high value species listed in the Red Data Book of the Russian Federation and/or protected by international treaties, CITES species that can be legally or illegally imported from other countries, captive-bred or sourced from the wild, or their offspring captive-bred after their import into Russia, or others.

Trading in high value species carries on the Internet a criminal liability in Russia, while domestic trade in CITES specimens is not subject to any Russian regulation other than for certain aspects of trade in imported specimens. Even though "exhibiting goods banned from trade at any point of sale without a clear designation that they are not for sale constitutes an administrative offense," the most common response of the competent authorities to a detected ad selling animals banned from trade is only to block such ad as an information item prohibited from circulation. About 2,000 court decisions were passed in 2014–2018 to prohibit advertisements selling animals. Following court decisions, about 3,200 Internet pages were listed in the unified register of prohibited sites, and 3,100 of them already deleted the prohibited information. Nevertheless, users can still place new wildlife trade ads instead of the blocked



ones. The lack of systemic controls over the wildlife trade on the Internet facilitates the development of illegal wildlife trade in Russia.

Russian online resources hosting wildlife trade ads have not yet adopted any special policy to regulate trade, while these practices already exist elsewhere in the world, such as among the members of the Global Coalition to End Wildlife Trafficking Online. A special wildlife policy for online users helps raise their awareness of the existing restrictions and prohibitions on trade in certain species and their parts and derivatives, as well as of the need to provide a documentary proof of legal origin of the specimens for sale, thus helping prevent illegal trade.

The objective of this study is to estimate the potential volume of the online wildlife market including its shadow segment (Dark Net), analyze the rules of online resources pertaining to wildlife trade and offer recommendations for regulating and controlling online wildlife trade.

1. KEY FINDINGS

Over 100 online resources have been analyzed for this study, including:

- 3 major social networks (Facebook, VK, Instagram);
- 14 most heavily visited bulletin boards (avito.ru, youla.ru, ebay.com, irr.ru, unibo.ru, tiu.ru, livemaster.ru, dorus.ru, petsfunny.ru, doska.ru, drug2.ru, bestru.ru, lesruk.net, zoo-bazar.com);
- 74 Internet stores.

The study located:

- over 7,000 unique ads for selling CITES-listed species of animals;
- over 1,000 sellers;
- 30 ads for supposed sale of high value species;
- isolated ads for selling tiger skin and mammoth tusks on the Dark Net¹⁰⁴.
- the volume of the online animal market exceeded 530 million rubles, or US\$8,5 million, over three months, this includes more than 370 million rubles, or \$ 5.9 million for the Russian-language segment, and more than 160 million rubles, or \$ 2.6 million for foreign resources that offer delivery of specimens to Russia¹⁰⁵;
- 74% of all ads accounted for the ads selling live animals, 26% for parts and derivatives;
- 90% of all ads were selling exotic animal species, 10% native species resident in Russia;
- over 55% of the ads selling wildlife were posted in Moscow and St. Petersburg;
- 76% of the ads announced a price, while 24% of the ads either did not post a price or advertised specimens 'to order' or posted an unrealistic (lowest or highest possible) price to promote the item in the sorting filters and attract the buyers' attention;
- 6 out of 14 bulletin boards did not set restrictions on the sales of species protected by international treaties and/or listed in the Red Data Book of the Russian Federation;

¹⁰⁴ Outside of the study period.

¹⁰⁵ The calculation of the volume of wildlife trade on the Internet was based solely on the prices indicated in the ads, and may differ from the actual amounts of transactions.

PART III Online Wildlife Trade

- rules of conduct of bulletin boards and social networks do not refer to the list of high value species the trade in which carries criminal liability;
- sales ads seldom provide information on the origin of specimens;
- some of the ads promotes the renting of animals;
- wildlife specimens are traded on the surface Internet; sellers and buyers very rarely use shadow forums (Dark Net);
- Russia does not have a system for monitoring and enforcing wildlife trade on the Internet;
- the number of ads tends to increase towards the end of a calendar year.

2. STUDY METHODOLOGY

The study of Internet wildlife trade included the monitoring of the surface Internet and the Dark Net.

Surface Internet

The analysis covered mostly ads placed in the Russian-language Internet concerning the buying and selling of the species included in the CITES Appendices I and II as well as in the List of high value species.

In addition to the CITES specimens, the study also analyzed the Internet trade in mammoth tusks given the growing interest in mammoth ivory as an alternative to elephant ivory.

The study also analyzed English- and German-language ads on eBay and Facebook that offered to deliver the listed animals to Russia; these accounted for 14% of the total number of ads.

The Internet monitoring took place in April–July 2018 and reviewed all ads posted between January 1, 2016 and June 1, 2018¹⁰⁶.

The search engines used in the study: **Yandex** and **Google** – the two most popular search platforms in Russia.

Types of Internet resources analyzed: bulletin boards, social networks, online stores, thematic forums.

During the monitoring, all sites were lumped into three groups:

- bulletin boards;
- online stores;
- social networks and forums.

This approach allowed to analyze each group of sites separately accounting for their distinct sales mechanisms and target audiences. The analysis revealed the key features of each type of resources, such as: ad longevity, site specialization (trading in live animals or derivatives), availability of built-in ad categories. As all these factors influence trade volumes¹⁰⁷, the study analyzed each of the groups of sites using a separate methodology.

¹⁰⁶ Except for the bulletin boards with limited ad duration.

¹⁰⁷ Considering the difference in the visitation and conversion rates of the analyzed resources.

In addition to a detailed processing of over 100 Internet resources, a market simulation model was built to extrapolate the study results to more than 500 resources.

The study also rated the resource affiliation by analyzing linkages between their registration and contact details, IP addresses and domain names.

Key search words in the Russian Internet

"exotic animals", "buy animals", "animal store", "skin", "fur wholesale", "exotic pets", "exotic animals for home", "exotic", "animals", "sell", "buy", "derivatives", "buying", "distribution", "breeding", "ANIMAL NAME", "ANIMAL SPECIES", "ANIMAL DERIVATIVE" and word combinations, regular expressions¹⁰⁸ such as "***tiger***", "**tiger**+(**buy***|**sell***)".

Dark Net

Monitored items: ads for trade in species included in the list of high value species.

Monitoring period: April–June 2018

Analyzed period: January 2016 – June 2018

Study limitations

The life cycle of ads on different sites is limited (between 7 and 180 days), with an average life of 107 calendar days. As the study lasted for three months with the review period of 2.5 years (01.01.2016-01.06.2018), separate calculation metrics and mathematical models were developed for each group of sites to analyze the Internet wildlife trade with its extrapolation to 2.5 years.

The monitored ads were divided into two categories: those selling 'native' and 'exotic' species. 'Native species' ads featured species that are resident in the natural habitats of Russia, while 'exotic species' ads featured species that are not resident in Russia in the wild. This division is conditional considering that the actual origin of the animals traded on the Internet is

¹⁰⁸ Formal language of text string search and manipulation based on the use of metacharacters.

mostly unknown and animals imported from other countries, such as lynx, wolf, etc., may also be classified as 'native.'

Species were identified mostly from their names included in the ads as well as their photos if provided.

It should be noted in this context that the accuracy of the information provided in the ads has several limitations affecting the results of the study as it is impossible to verify the following elements:

- whether the authors of all ads do indeed have in their possession the advertised animal (or its part or derivative);
- whether the name and image of the advertised animal (or its part) matches the actual species of the respective animal (or its part) that the seller has;
- whether the actual number of animals (or their parts or derivatives) available for trade matches the advertised amount;
- the origin of the traded animals or their parts or derivatives (wild or captive-bred, and the legality of origin);
- availability of documents verifying the legality of trade;
- real price of the traded animals and amount of transaction might be inconsistent with the price specified in the ads (the calculation of the volume of wildlife trade on the Internet was based solely on the prices indicated in the ads, and may differ from the actual amounts of transactions).

In the view of such limitations, it is impossible to fully estimate the true volume of wildlife trade on the Internet, one can only make a judgment on the range of specimens and prices specified in the ads.



3. TRADED TAXONS

The monitoring identified the following most commonly traded taxonomic groups of species.



CITES Appendix II species account for 53 % of all advertised CITES specimen.

The monitoring also showed that live specimens make up the bulk (74%) of the Internet wildlife market ads, which attests to the popularity of keeping wild animals as pets.



Exotic species

According to the analysis, exotic species that are not resident in Russia comprise 90% of all sales/ads, with reptiles making up a majority among them.

Among the advertised reptiles, lizards and snakes were the biggest groups and pythons – the most popular family. Land tortoises are presented by live specimens, more than 18 species including Central Asian tortoise (regularly smuggled), radiated tortoise, spider tortoise. Among birds, grey parrot, listed in CITES Appendix I, was the most heavily advertised species (364 ads), followed by cockatoo (181 ads) and Amazon parrot (163 ads).

Among primates, lemurs (67 ads) and lorisids (49 ads) carried most ads; the CITES Appendix I species included gibbons (8 ads) and orangutans (4 ads).

CITES Appendix I cats were featured in 12 ads selling tigers (4 about live animals, 6 – stuffed animals and 2 – skins), 3 ads selling cheetah (2 about live animals, 1 – a skin rug), 1 ad selling a Geoffroy's cat, and 3 ads selling live jaguars.

Native species

Ads selling native species account for about 10 percent of all ads. Most numerous ads were selling the derivatives of following species: lynx (187 ads), wolf (186 ads), brown and black bears (135 ads), West Caucasian tur (110 ads), walrus (41 ads prevalently tusks), as well as live scops owls (41 ads).

Ads selling high value species of wild animals accounted for 3 percent of all native species ads.

Wildlife ads posted on www.eBay.de and www.facebook.com are not part of the Russian-language Internet segment, but they were included in the scope of the analysis as they featured delivery to Russia.

Table 38. Ads selling	y high value	species
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Species	Total number of ads	# of ads selling derivatives	# of ads selling live animals	Web sites hosting the ads
Polar bear	6	5 skins	1	http://skins.org.ua http://sibirsafari.ru http://expedition- zelenograd.ru https://youla.ru
Saiga antelope	11	11 horns	0	https://youla.ru https://vk.com
Golden eagle	4	3 stuffed birds	1	https://vk.com https://www.ebay.de
Argali	5	4 horns, 1 skin	0	https://youla.ru https://www.ebay.de
Peregrine	1	1 stuffed bird	0	https://www.ebay.de
Saker falcon	1	0	1	https://youla.ru
Amur tiger	2	1 head, 1 skin	0	http://sibirsafari.ru https://www.ebay.de

Mammoth tusks

Monitoring revealed 460 ads selling mammoth tusks mostly posted on VK, Instagram and bulletin-board tiu.ru (including ivory, pieces of tusks, carvings, such as figurines, bracelets, brooches, etc.).

The total cost of ads was more than 50 million rubles (US\$ 760,250), including more than 47 million rubles (US\$ 714,635) in the Russian-language segment and more than 2 million rubles (US\$ 30,410) on Internet resources offering delivery to Russia.

4. GEOGRAPHIC DISTRIBUTION OF ADS

The highest concentration of wildlife ads falls on Moscow and St. Petersburg. Krasnodar Territory takes 3% of the market. The remainder of the market is quite equally spread across other regions, at about 1% per region.



City or Region	Market share	City or Region	Market share
Moscow	47.0%	Primorsky Territory	1.7%
St. Petersburg	8.9%	Volgograd Region	1.2%
Krasnodar Territory	3.0%	Voronezh Region	1.1%
Sverdlovsk Region	1.9%	Novosibirsk Region	1.1%
Rostov Region	1.8%	Other regions	< 1.0%

Figure 25. Geographic distribution of ads

5. INTERNET RESOURCES

The study revealed that, if measured by the number of ads, the market is dominated by online stores specializing in wildlife (including both live animals and body parts and derivatives), followed by bulletin boards.



Bulletin boards capture a wide audience due to their openness and popularity among the Internet users as well as the targeted use of contextual advertising campaigns that increase traffic and conversion¹⁰⁹. Online stores, while attracting a smaller audience than bulletin boards, capture a larger market share due to their high rate of transitions from search engines and a strong user confidence in the resource. The larger market share of online stores is also predicated by the fact that the Internet overall has more online stores than active bulletin boards and social networks, as well as by the exclusive specialization of such stores in wildlife trade.

Social networks and forums are primarily designed for user communications and do not usually maintain effective trading tools: specialized thematic search, results selection, information structuring through ad sorting and natural promotion of traded specimens (within thematic sections and through transitions from search engines), dedicated delivery systems. Nevertheless, social networks have their advantages – content can be posted indefinitely in their groups and personal accounts. Furthermore, social networks are increasingly developing and using their own e-commerce mechanisms with effective trading tools.

¹⁰⁹ The conversion rate is the proportion of visitors to a website (expressed in percent) who take a targeted action as a result of subtle or direct requests from marketers, advertisers, and content creators, such as a purchase, registration, subscription, clicking a banner advertisement, etc.

5.1. BULLETIN BOARDS

Bulletin boards are the most popular platform employed by Internet users to sell goods including wildlife. Low barrier to entry is a key feature of bulletin boards: any registered user can post an ad free of charge, which attracts private individuals. A fee is required to increase the number of ads. While an advertiser can post several similar ads free of charge, bulletin boards try to deal with this by monitoring and moderating ads at the posting stage.

Currently, there are 25 large trading platforms in Russia that are actively visited by Internet users. The study analyzed in detail the 14 most heavily attended bulletin boards, given the small contribution of the remaining 11 boards to the total number of ads.

All analyzed ads offer to sell goods inside Russia or deliver goods to Russia. Ads selling live animals dominate over animal parts and derivatives. Private individuals are predominant sellers, while companies specializing in animal trade also use this resource.

The following three resources were leading in the monitoring results by the number of wildlife sales ads: **avito.ru**, **youla.ru** and **tiu.ru**. They accounted for 60 percent of the total number of ads posted on bulletin boards.

Avito.ru

Ads posted on avito.ru offered both native species (brown bear skins, stuffed owls) and exotic species, with a strong dominance of the latter.

Some of the ads revealed by the monitoring were apparently part of a systemic distribution of primates, spiders, snakes and other exotic animals rather than isolated sales.

The following species were actively advertised:

- reptiles chameleons, pythons, geckos, tortoises, derivatives of Nile crocodile;
- parrots Amazon parrots, aras, cockatoos, rosellas.

The monitoring recorded 48 ads selling grey parrots (CITES Appendix I), two ads selling African rhino horn (without naming a species), as well as ads selling live gibbons, rhesus macaques, long-tailed macaques, magots, wild yaks, and stuffed marine turtles.
Youla.ru had the highest number of ads among bulletin boards.

This was the only bulletin board that posted ads offering to sell high value species – a criminal offense – during the study period.

It advertised native species (skins of lynx, wolf, brown bear, musk deer, live songbirds and owls) and exotic species (reptiles – live pythons, boas, geckos, tortoises, derivatives of Nile crocodile; grey parrots, Amazon parrots, aras, cockatoos, rosellas; primates – lorisids, marmosets).

The monitoring recorded 7 ads selling saiga horns, 2 ads selling argali horns and skins, 1 ad selling a live saker falcon.

eBay

Singular ads selling a stuffed golden eagle, a stuffed peregrine falcon and an Amur tiger skin were spotted on the German-language segment of eBay.

Bulletin board policies on animals and wildlife products

eBay is the only bulletin board communicating to its users its animals and wildlife products policy¹¹⁰ as well as the list of animals restricted or banned from trade (on the English version of the site). The rules posted on the Russian version of eBay simply inform its users that animals and wildlife products are included in the list of goods restricted or banned from trade, while one needs to switch to the English version of the site to access further details. eBay is a member of the Global Coalition to End Wildlife Trafficking Online and the U.S. Wildlife Trafficking Alliance.

An analysis of the information policy of the bulletin boards in the Russianlanguage segment of the Internet showed that out of 14 resources, 6 did not impose any restrictions on the sale of animals protected by international treaties and/or listed in the Red Data Book of the Russian Federation. Bulletin board rules do not reflect these restrictions, thus leaving the users unaware of the existing legislation.

The user rules of avito.ru, tiu.ru, unibo.ru and petsfunny.ru carry the most detailed information in the Russian-language Internet regarding the existing restrictions and prohibitions on trade in the animals and their parts and derivatives that are listed in the federal and regional Red Data

¹¹⁰ https://www.eBay.com/pages/ru/help/policies/wildlife.html

Books or protected by international treaties. Tiu.ru is the only site that makes a reference to the CITES regulations in its user rules. The user rules of youla.ru, the leader in the number of ads among bulletin boards, include a vague statement about the prohibition of trade in "rare and endangered species of animals and plants, products thereof, as well as skins, feathers and other parts and organs of wild animals" without any reference to the international treaties or the Red Data Book of the Russian Federation or the lists of rare and endangered species.

None of the bulletin boards inform their users of the criminal liability for trade in high value species of wild animals, nor do they provide links to an updated list of such species.

The rules of bulletin boards most typically prohibit such trading that violates the Russian legislation, which is clearly insufficient for informing the users.

Therefore, the rules of the bulletin boards need to be updated to more accurately inform the users of the provisions of the current legislation, with relevant links provided to the wildlife trade regulations and the lists of species restricted or banned from trade.

Name	Number of ads	Total value (RUB/US\$)	Site rules on animal and wildlife trade
Tiu.ru	676	> 43,000,000/ 671,875	Restricted from trade: "flora and fauna listed by CITES and/or included in the Red Data Book, as well as animal skins, skin goods, horns, limbs and stuffed animals"
Youla.ru	720	> 39,500,000/ ~617,190	Restricted from trade: "rare and endangered animals and plants, goods thereof, as well as skins, feathers and other parts and organs of wild animals"
Avito.ru	499	> 14,000,000/ 218,750	Restricted from trade: "Animals, birds, fish, plants and other organisms listed in the federal and regional Red Data Books or protected by international treaties, their parts and derivatives (stuffed bodies, skins, bone trophies etc.), any goods thereof (clothes, accessories, interior items, food, etc.)"
eBay.com	154	> 13,000,000/ 203,125	Restricted from trade in the Russian-language version: "animals and goods of natural origin, e.g.: live animals, stuffed animals and ivory" The English-language version states the animal and wildlife products policy and lists the animals restricted from trade, by groups of goods (including for body parts and derivatives, ivory, tortoise shells, etc.)

Table 39. Overview of bulletin boards

Table 39 Continued (1).

Name	Number of ads	Total value (RUB/US\$)	Site rules on animal and wildlife trade
Petsfunny.ru	314	> 6,500,000/ ~101,560	Restricted from trade: "animals listed in the federal and regional Red Data Books and protected by international treaties". The site also prohibits placement of ads with information about cruel animal treatment.
Zoo-bazar. com	28	> 6,500,000/ ~101,560	No special restrictions on animal trade
Unibo.ru	123	> 5,000,000/ 78,125	Restricted from trade: "animals and plants listed in the federal and regional Red Data Books as well as parts and organs thereof; skins and skin products of rare and endangered animals listed in the Order of the Ministry of Natural Resources and Environment of Russia dated 27 June 1994 No. 202"
Doska.ru	110	> 5,000,000/ 78,125	No special restrictions on animal trade
LesRuk.net	135	> 3,500,000/ 54,687	No special restrictions on animal trade
Livemaster.ru	61	>2,000,000/ 31,250	No special restrictions on animal trade
Dorus.ru	77	> 1,500,000/ 23,437	No special restrictions on animal trade
lrr.ru	74	> 1,000,000/ 15,625	No restrictions on animal trade, but the rules disallow "placement of ads offering goods that require special permits if such permits are not in place or goods the trade in which is restricted or banned by the Russian legislation and/or international treaties presently in force"
Drug2.ru	64	> 800,000/ 12,500	No special restrictions on animal trade
Bestru.ru	135	> 500,000/ 7,812	Goods partially restricted from trade: "Skins and skin products of rare and endangered animals listed in the Order of the Ministry of Natural Resources and Environment of Russia dated 27 June 1994 No. 202" ¹¹¹ ; furs

Legality of origin documents

Most of the ads selling animals on bulletin boards do not carry any information on the availability of documentary proof of legal origin of the animals. The monitoring identified ads with information about veterinary certificates, however, ads stating the availability of CITES certificates or other documents confirming the legality of origin were rare exceptions.

 $^{^{\}scriptscriptstyle 111}$ Reference to the now obsolete order of the Ministry of Natural Resources and Environment of Russia.



The fact that bulletin boards do not have a system for checking availability and authenticity of **documents** permitting the sale of animals, their parts and derivatives, combined with the low level of user awareness about restrictions and prohibitions on trade in certain species, create conditions for illegal trade in animals and their derivatives. Notwithstanding the fact that bulletin board trade is primarily tailored for quick transactions allowing placement of ads without any documentary proof of legal origin of goods, the introduction of document checks and additional moderation of ads for such a specific category of goods as animals and wildlife products protected by the national legislation and international treaties would allow to reduce illegal wildlife trade on the Internet and raise the user awareness of illegal trade.

5.2. ONLINE STORES

At present, about 400 online stores are active in wildlife trade in Russia. Given the required sample size the study analyzed **45** online stores¹¹² that operate in Russia or can deliver goods to Russia (taking into account the required sample size). Monitoring revealed more than 3,000 ads.

Specimens traded in online stores

The analysis showed that online stores typically specialize in a certain category of goods (live animals or parts, derivatives). Most of online stores sold live animals, while another sizeable number of stores offered skins, stuffed animals and similar products, mainly of game species such as brown bears, wolfs and lynx. Four online stores specialized in skin products of Nile and Siamese crocodiles and spectacled caiman. Most of the stores selling live animals specialized in distinct taxonomies (parrots, reptiles, etc.), while some offered primates including great apes (gorillas, orangutans), pangolins, penguins, mastigures, Galápagos tortoises, leopards, elephants, bears, various parrot species, etc. (e.g., zoo-ekzo.ru).

Companies selling derivatives online usually also have several physical store locations. The biggest batches of products are stored in regional warehouses and shipped to order, with a delivery period of two weeks and more.

Online stores that offer a wide assortment of live animals can also deliver to order; in such cases, the store owner would not keep the animal but only procure it once an order is placed.

¹¹² The sample size is detailed in the section "Sample size calculation."





The study calculated an average of 0.497 orders per day¹¹³ placed at several online stores specializing in derivatives, or 181 orders per year.

Online stores with ads selling high value species

The online store **SibirSafari.ru** positioned itself as a hunting trophy studio salon selling finished stuffed animals and animal skins as well as making these products and procuring unprocessed furs. According to the store's website, the Krasnoyarsk City and Territorial Administrations and the Administration of the President of the Russian Federation were among its clients.

During the monitoring period, this website carried ads selling skins, stuffed animals and rugs made of lynx, wolf, musk deer, brown bear, lion and even the skins of polar bear (3 ads) and tiger (6 ads). One of the ads offered an Amur tiger head.

The online store **skins.org.ua** represents a Ukraine-based company, Shkurny Vopros, that sells and ships decorative natural skins, including to Russia. Its Russian-language ads included one ad selling a polar bear skin and one ad selling a tiger skin.

The online store **expedition-zelenograd.ru** specializing in sporting, fishing and hunting goods carried an ad selling a polar bear skin.

¹¹³ Test purchases of goods from online stores were made during a 14-day period, with the intervals of 1, 3, 7 and 14 days, during which order numbers were compared. Thus, the difference between the order numbers, taking into account the proportion of desired products from the total range, was the basis for calculating the average number of sales per day.





Legality-of-origin documents

Only four of the analyzed online stores carried information about potential availability of the documentation confirming the legal origin of animals and derivatives. Three of them were the stores specializing in live animals. One of the stores indicated that such documentation was only available on demand, while another offered a possibility "to officially import exotic animals from various countries." The only store among these four that sells derivatives, expedition-zelenograd.ru, conveyed the availability of documentation for the polar bear skin. The websites of only 6 stores indicated that they could inform the buyer about the animal source (wild or captive-bred). Five stores

informed that they breed the animals they sell. One of the stores offering captive-bred orangutans operated a petting zoo at its breeding station. Only one online store mentioned a possibility to obtain a CITES certificate.

Therefore, informing clients about the availability of the legality-of-origin documentation is not a common practice among online stores.

5.3. SOCIAL NETWORKS AND FORUMS

The study analyzed social networks **VK**, **Instagram**, **Facebook**, **Twitter** as to the existence of posts referencing the buying or selling of wildlife.

The bulk of such posts, about 88 percent, falls on **VK** (56%) and **Facebook** (32%). Most of Facebook posts (85%) are in English and offer delivery to Russia. Trading mechanisms on these platforms are virtually identical: users create many thematic groups that sell wildlife of specific categories (live animals or parts, derivatives) and species. The following four types of such user groups are most widely spread reptiles and spiders, cats, parrots, animal parts and derivatives.

The group administrator or a group member puts up a post with the information about an animal for sale: photo, location, price and delivery mode. Alongside with groups, there are also individual accounts that carry out similar trade on social media platforms. Some of the social media groups selling animals and wildlife products in other countries are also ready to ship to Russia.

The remaining **12 percent** of such posts appeared on **Instagram** (11%) and **Twitter** (<1%). These platforms have some individual accounts offering to sell 'exotic' animals, however, the bulk of posts come from online store accounts. Such posts usually include an animal photo and a link to an online store ad. For example, virtually all Twitter posts duplicate ads in other networks.





VK.com (formerly VKontakte)

Total number of ads featuring CITES-listed species: 1,182

Ads selling mammoth bone: 55

The network actively trades in pythons and boas (193 posts), tarantulas (179 posts), primates (mostly lorisids, marmosets, mangabeys, Geoffroy's marmosets), parrots including grey parrots (18 posts), live tigers (8 posts); occasional ads offer stuffed bears, bear skins, live owls.

Some of the posts identified on VK.com by the monitoring study offered selling high value species, e.g., 4 ads selling saiga horns and 2 ads selling golden eagle (live and stuffed bird), which constitutes a criminal offense.

Facebook

The total number of ads selling CITES-listed species: 847 (most of which are English-language with shipment to Russia).

The network users offer to sell a wide range of animals and wildlife products, but most of the ads concerning the CITES-listed species feature parrots (103 ads for grey parrots alone), pythons (356 ads) and boas (49 ads); two ads offered tigers.

Social media policy on wildlife trade

The rules of VK.com do not regulate animal trade, thereby leaving the users unaware of the existing restrictions and prohibitions.

According to the Facebook rules, selling and gifting of animals (live animals, parts and derivatives) is prohibited in Marketplace and trade groups. At the same time, the rules permit the creation of posts or announcements for the sale of animals in the News Feed. Such posts predominantly appear in thematic groups.

Legality-of-origin documents

Most of the ads selling animals in the above social networks do not include any information on the availability of the documented proof of legal origin of animals.

None of the social networks informs its users of the prohibition on trade in high value species.

6. PARTICULAR ISSUES

6.1. ADS NUMBER DYNAMICS IN THE SOCIAL NETWORKS AND BULLETIN BOARDS

Figure 29 demonstrates ads number dynamics during the study period of January 1, 2016 to June 1, 2018. They are based on the statistics of wildlife ads in the social networks and bulletin boards.



Figure 29. Ads number dynamics in 2016–2018

The figures show that sellers are more active in promoting their products and place more ads during the pre-holiday periods reflecting the users' gifting preferences.

A conspicuous mid-summer decline in the number of ads most likely reflects the peak of the vacation season of potential buyers and generally follows the business dynamics.

6.2. CONTROL OF ADS FOR WILDLIFE SALES

In most bulletin boards and social networks, the site rules, initial moderation and user complaints are the primary control mechanisms against suspicious ads. Most bulletin boards have an 'initial moderation' procedure, whereas a post can be published only upon a successful screening by a moderator. Any post violating the site rules will be blocked, and the account from which such post originated can be blocked as well.

Initial moderation algorithms typically use certain stop-words, however, only two of the major bulletin boards, Avito and Youla, employ specialized stop-words for animals, parts and derivatives.

A **complaint** (in social networks, bulletin boards and forums) is an online form, in which a user can explain why a certain post must be deleted. This tool is available to active users who detected a suspicious ad selling or buying species of animals the trade in which is restricted or prohibited. Once a complaint is submitted, the subject post is reviewed to eliminate human error that may have led to its initial placement and correct the fault of initial moderation.

User reports to the competent authorities regarding the placement of suspicious ads and the need to block them proves to be a more effective mechanism. While the environmental authorities and the federal communications regulator Roscomnadzor (Federal Service for Supervision of Communications, Information Technology and Mass Media) are proactive in responding to such complaints and blocking illegal posts, social media users keep posting illegal ads because of the lack of regular control.

Therefore, while the user complaint tool is sufficient for blocking a particular post or resource, it is not able to tackle the problem more systemically.

The staff of web platforms that host wildlife trade activities do not regularly monitor user posts after their initial moderation.

The absence of any policy on the verification of the legality-of-origin documents at the stage of initial moderation of wildlife-related content as well as the lack of systematic and regular monitoring of posts after their initial moderation creates conditions for illegal wildlife trade on the Internet.

6.3. DELIVERY AND PAYMENT

Payment

Goods can be paid for both with 'cash on delivery' and online. Some online resources (such as Avito) offer personal wallets as a payment tool. Such transactions typically charge an extra fee. Sellers often do not quote a specific price for a posted animal or wildlife product and instead post a "Call for Price" notation. This is due to the sellers' inability to standardize prices that are greatly influenced by the seasonality and the specific features of each product. Cryptocurrencies have not yet been used in payments for wildlife products given the open character of the market. Sellers offered the following payment methods:

	Yandex.Money	online payments service
	WebMoney	online payments service
6	Bank card	online payments service
SMS	SMS	payment from a mobile phone account
4	Cash	cash on delivery
盦	Bank transfer	bank account transfer
$\left[\mathbf{Q} \right]$	QIWI wallet	online payments service

Delivery

Delivery is the final stage of a wildlife trade transaction. It can be further divided into two categories: domestic delivery and shipment to Russia from abroad. They can also be combined, e.g. when a vendor delivers the goods to the Russian border while a courier service carries the shipment to its final destination within Russia.

Delivery methods:

	Third-party courier
Ĩ.	Own delivery ¹¹⁴
1	Russian Post

6.4. AFFILIATION OF ONLINE RESOURCES

The study also analyzed the affiliation of online resources to account for a possible duplication of ads selling the same item via several platforms. The analysis centered on determining the affiliate ratio¹¹⁴ that was needed for subsequent calculations of the numbers of unique ads. The analysis reviewed over 100 online stores and detected 23 affiliates among them.

¹¹⁴ Some online vendors offer their own delivery services.

zoo-ekzo.ru

- zoo-collection.ru
- croc-bag.ru
 - allcroc.com
 - кошелек24.рф
- zoo-oasis.ru
 - zooparadis.ru
- skins.org.ua
 - goldentimenn.ru
 - goldenmex.ru
- amikovry.ru
 - homeconcept.ru

- kavkazsuvenir.ru
 - kubachi-silver.ru
 - kavkaz-suvenir.ru
- shkuramedvedya.ru
 - dom-meha.ru
 - kavkaz-etno.ru
 - www.dukani.ru
 - www.iriston.ru
 - sova.shop
 - etno-shop.ru
 - petsfunny.ru
 - coredo.ru

- terraria.ru
 - aqualogo.ru
 - tetrafish.ru
- emoiseeva.ru
- awareness-way.ru
- abcestate.ru
- ist-nova.ru
 - voreckozhi.ru
- planetexotic.rusimplezoo.ru
- zverivdom.com
- zverivuom.com
 - market-igr.com
 - delai-remont.com

For example, terraria.ru and several other sites (aqualogo.ru, tetrafish.ru, emoiseeva.ru, awareness-way.ru, abcestate.ru, prog1753.ru) have the same email address: myla@mail.ru.¹¹⁵ Some affiliate sites operate

Some affiliate sites operate in adjacent areas: **zoo-ekzo.ru** and **zoo-collection.ru** registered by the same individual are selling, respectively, animals and their derivatives.

However, many owners do not limit themselves to selling animals, parts and their derivatives and operate in other segments unrelated to wildlife as well (e.g., toys). The presence of affiliate ads in social networks and bulletin boards was also considered.

Affiliate ratio¹¹⁶ (ratio of affiliate sites to the total number of sites): **0.23**



¹¹⁵ The ratio determines affiliation between online resources using their technical and contact data.

¹¹⁶ The ratio characterizes the wildlife market from the standpoint of multiple sellers: 23 percent of the reviewed resources were affiliated with each other.

6.5. ADVERTISING

Present capabilities of online services such as **Yandex.Direct** or **Google AdWords** allow placing almost any advertisement in search results for targeted requests, which is actively used by various websites promoting their products or services. Online stores selling wildlife specimens are not an exception and use the same tools.

Thanks to targeted advertising, a user entering the name of an animal in the search box will regularly see ads with offers to sell it.

The services for placing contextual advertising do not analyze the advertised goods, do not carry out moderation and are not liable for placing the ads that offer to sell animals protected by the Russian law and international treaties.

The following types of advertising are used for selling wildlife:

Paid Search - text advertising in search engines upon user request, including their advertising networks. Sale of advertising is carried out by clicks.

Marketplaces — sites or individual pages that host advertisers' offers with the ability to quickly order (offers).

Target – an advertising tool that shows the ad only to the part of the existing audience that meets the specified criteria (target audience).

7. DARKNET

The study undertook an initial analysis of **DarkNet** resources in respect to the presence of ads selling or buying animals and wildlife products. The analysis did not reveal any sites that engaged in these activities in **2016–2018**. This is primarily due to the specifics of the target audience who rare use shadow forums or not use them at all.

Given the ample opportunities for open trade, low user awareness of wildlife trade restrictions and ineffective controls on the part of major online platforms, there is really no need to revert to shadow platforms.

Nevertheless, singular ads selling large derivatives such as tiger skins, mammoth tusks, horns and stuffed bodies of various wild animals have been spotted on the DarkNet outside of the study period. It is advisable to further continue DarkNet monitoring.

8. CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The study showed that online platforms are being actively used for trading in wildlife. The monitoring detected 7,000 unique ads. While most of the ads dealt with exotic animals, primarily CITES-listed birds, reptiles and primates (Appendices I and II), ads selling native high value species could be also found in the open market.

The surface (publicly accessible) layer of the Internet is the primary platform for selling wildlife including the species the illegal trade in which is a criminal offense, while the Dark Net is effectively unused in wildlife trade. Public trade in wildlife on the surface Internet is not regulated by any special rules except for its certain aspects. It is probably due to the absence of special regulations in online wildlife trade and systemic controls over such trade, as well as poor user awareness of the applicable restrictions and prohibitions, that the sellers tend to prefer the surface Internet.

Even though bulletin boards and online stores take a large market share, new online trading platforms keep being set up on the surface Internet, including in the social networks, which manifests further expansion of the online market. In the absence of special policies on trade in wildlife, such market expansion feeds new opportunities for both legal and illegal trade. In this context, the policies of online platforms hosting wildlife trade become of utmost importance for preventing illegal trade transactions.

Online platforms that regularly advertise the sales of wildlife can raise their users' awareness of the existing restrictions and prohibitions applicable to wildlife trade by posting exhaustive rules and developing procedures that would exclude the publication of ads about animals whose trade is prohibited or requires special permits.

The continued absence of such rules and preventive procedures and the systemic and regular controls over wildlife trade keeps creating favorable conditions for illegal trade.

Recommendations

To prevent illegal wildlife trade:

- 1. Online resources that host wildlife trade need to:
 - Develop and execute an information policy regarding trade wildlife, including by updating the advertisement placement rules, to increase the user awareness of the current restrictions on trade in protected animal species.

The advertisement placement rules need to include a special section on "animals, their parts and derivatives" as a subject of regulation, with the information on the current restrictions regarding the CITES-listed species and the trade prohibitions for the species included in the Red Data Book of the Russian Federation and the list of high value species.

The rules need to include references to Article 258.1 of the Criminal Code of the Russian Federation (for high value species), to the "Rules of sales of certain types of goods" (for CITES specimens), to the lists of species of animals the trade in which is prohibited or restricted, as well as the requirement of documentary proof of legal origin of species protected by the CITES.

- Develop procedures, as applicable, for the verification of documents on animals and wildlife products being offered for sale.
- Join the Global Coalition to End Wildlife Trafficking Online.
- 2. The interested parties (including the competent authorities Ministry of Internal Affairs, Roscomnadzor, Ministry of Natural Resources and Environment, nonprofit organizations, academic community, online resources, cybersecurity experts, etc.) need to develop a set of measures towards raising public awareness of the restrictions and prohibitions related to the trade in species protected by the CITES and included in the Red Data Book of the Russian Federation and the list of high value species, ensuring regular control over the online wildlife trade, as well as consider systemic steps to exclude the publication of advertisements that illegally sell animals the trade in which is prohibited or requires special permits.

PART IV WILDLIFE TRADE DYNAMICS In Certain Regions Of Russia

1. WILDLIFE TRADE IN THE RUSSIAN FAR EAST IN 2012-2018

S.N. Lyapustin, P.V. Fomenko

Continuous demand from China¹¹⁷ and Southeast Asia in the goods of animal origin from Russia creates conditions for active commercial trade in animals, their parts and derivatives, including their trafficking across the Russia–China border. The existence of a very long common border between Russia and China¹¹⁸ enables illegal transportation of wildlife in the near-border areas.

China-Russia migration flows in the 1990's-2000's, combined with the presence of Vietnamese and North Korean migrant laborers in Russia, galvanized hunting trade, including the illegal one, and the subsequent export of wild animals, their parts and derivatives.

The Russian customs statistics are recording continuous attempts of smuggling from Russia to China furs (sable, marten, otter, squirrel, muskrat), animal parts and derivatives for use in traditional medicine. The growth of entertainment industry in China has pushed up the demand for wild animals including marine mammals whose official export is regularly recorded.

¹¹⁷ The resource-rich territories of East Siberia and the Far East have historically attracted the attention of the Chinese side. Furs and pelts (river beaver, wolf, squirrel, stoat, Siberian weasel, sea otter, northern fur seal, Pallas's cat, fox, Arctic fox, wolverine, lynx, sable), medicinal products from wild animals or plants (ginseng, musk deer gland, antlers of Manchurian wapiti, sika deer, reindeer, moose), other hunting and fishing products have been a major part of the Russian exports.

¹¹⁸ The eastern segment of the Russia-China border (in the zone of responsibility of the Far Eastern Customs Branch) is 4,149.3 km long. Over 90 million people live in the adjacent Chinese provinces of Heilongjiang and Jilin and Inner Mongolia Autonomous Region.

PART IV WILDLIFE TRADE DYNAMICS IN CERTAIN REGIONS OF RUSSIA



MAIN TRAFFICKING FLOWS OF WILDLIFE

FROM THE RUSSIAN FAR EAST

Key findings

1. **Most heavily illegally traded wild animals** – Amur tiger (*Panthera tigris altaica*), brown bear (*Ursus arctos*), Asiatic black bear (*Ursus thibetanus*), Manchurian wapiti (*Cervus elaphus*), sika deer (*Cervus nippon hortulorum*), Siberian musk deer (*Moschus moschiferus*).

Species	CITES Appendix	Traded specimens	Purposes of trade				
Amur tiger	I	Bones, claws, teeth, skin, kneecaps, minced meat	Traditional medicine, production of tinctures, interior decoration, status and prestige items				
Brown bear	II	Paws, fangs,	Traditional medicine, food (paws), talismans and				
Asiatic black bear	I	claws, kneecaps, gallbladders	souvenirs (fangs, claws)				
Fur animals:	_	Pelts	Raw materials and semi-finished products for the				
Mink	NC		fur industry				
Marten	NC						
Otter	II						
Muskrat	NC						
Squirrel	NC						
Musk deer	II	Musk gland	Traditional medicine				
Manchurian wapiti	NC	Horns, antlers, tails, penises	Traditional medicine				
Sika deer	NC	Horns, antlers, tails, penises	Traditional medicine				
Saiga	II	Horns	Traditional medicine				
Beluga whale	II	Live animals	Replenishment of oceanariums, other entertainment facilities				

Table 40. Primary traded species and wildlife products

2. Wild animal species newly involved in illegal trade – white rhinoceros (*Ceratotherium simum*), white whale (*Delphinapterus leucas*).

Wildlife trade in the Russian Far East is dominated by exports, with China, PDR Korea and Republic of Korea being its primary destinations both in legal exports and smuggling. Wildlife export to Vietnam, Japan and other countries is rare and incidental. Wildlife is sourced into trade from legal and illegal hunting (trapping) both inside the Russian Far East and in other Russian regions as well as in other countries.

- 3. Primary destinations of wildlife legal exports
- Marine mammals to China;
- Hunting trophies to the US and EU;
- Animal-based medicinal products to China and Southeast Asia countries.

4. Predominant species composition by smuggling destination

- Amur tiger parts and derivatives, parts of brown bear and Asiatic black bear (paws, bile), musk deer gland, parts of Manchurian wapiti and sika deer (antlers, tails, penises), pelts of fur animals, sperm whale teeth, as well as live beluga whales – to China.
- Musk deer gland and bear bile to Korea.

The customs regional branches in Khasan, Ussuriysk, Birobidzhan and Blagoveshchensk recorded the highest numbers of detected crimes and administrative offenses in Russia–China shipments (less so in Russia– North Korea shipments). The Russian customs detected and interrupted wildlife smuggling channels at the following border crossings: Zabaykalsk – Manzhouli, Blagoveshchensk – Heihe, Ussuriysk (Turiy Rog) – Mishan, Ussuriysk (Poltavka) – Dongning. The customs line officers and operational investigation units contributed most to these smuggling detections. The nationals of China and Russia were the most frequent offenders. The most common categories of individual travelers attempting to smuggle wildlife included:

- Russian traffickers posing as tourists (so-called 'shuttle traders,' 'camels,' etc.);
- Chinese laborers and entrepreneurs temporarily residing in Russia;
- Russian and Chinese truck and bus drivers, crew members of sea and river vessels and international trains.

Since the 2013 tightening of criminal liability for the smuggling of high value species and their parts and derivatives, the number of criminal cases opened for these offenses increased accordingly. Smuggling of wildlife through the customs border of the Eurasian Customs Union was typically associated with non-declaration and concealment of the trafficked specimens in the vehicle's constructive cavities and specially equipped 'caches.' Some wildlife smuggling took place through the Russian international border circumventing customs posts.

The number of administrative offense cases on illegal wildlife exports also increased. Such offenses were typically associated with violations of non-tariff regulations such as export bans and restrictions established by international treaties of the Eurasian Customs Union member-states, decisions of the Eurasian Economic Commission, regulations of the Russian Federation. Chinese nationals were involved in the bulk of such administrative offenses.

Key changes in legal and illegal wildlife trade:

- the network of mobile (mainly Chinese) buyers of hunting and other natural products has expanded;
- trading has been shifting from street markets and pet stores to online platforms and well-established distributions channels;
- the proportion of Chinese groups and individuals involved in wildlife trade has increased;
- the number of Chinese nationals visiting Russia who can afford to pay for their purchases has increased, while the livelihoods of near-border rural communities in Russia remained low;
- the market continued to institutionalize, with the growth of the number of companies focused on processing and exporting various products obtained from the forests of the Russian Far East.

1.1. GENERAL FEATURES OF THE WILDLIFE MARKET IN THE RUSSIAN FAR EAST AND ITS KEY CHANGES IN 2012–2018

Wildlife trade in the Russian Far East is dominated by exports, with China, PDR Korea and Republic of Korea being its primary destinations both in legal exports and smuggling. Wildlife export to Vietnam, Japan and other countries is rare and incidental.

The studies have shown that, as before, near-border communities continue to play a special role in the region's wildlife trade as they actively engage in the trapping and subsequent sales of wild animals.

Harvesting wild medicinal plants, hunting and fishing play a significant role in the economic activities of near-border communities. The collected plant products¹¹⁹ and wild animal parts are subsequently sold, primarily to Chinese nationals, as well as to buyers from Vladivostok and Ussuriysk. Buyers of animal parts are very active in Khabarovsk, Blagoveshchensk,

¹¹⁹ This review is focused on wild animals and excludes the analysis of trade in wild plants.

Lesozavodsk, Dalnerechensk and Kavalerovo. The buying is also prominent in Irkutsk, Novosibirsk and other Siberian cities for further transit to the Far East. Studies have shown that illegal hunting of both game and non-game wild animals, as well as species listed in the Red Data Books and the CITES Appendices, takes place in all regions of Siberia and the Far East.

Various towns and settlements in Primorsky and Khabarovsk Territories and other Far Eastern regions exhibit ads offering to buy deer antlers, bear bile, musk deer gland, with the buyers' phone numbers. In April 2018, numerous posted ads in Novosibirsk sought to buy the same animal parts as well as saiga horns. Residents of all near-border communities in Primorsky Territory reported active buying of deer antlers, tails and penises, bear bile, badger fat and other animal and plant products by the nationals of China. These individuals regularly drive by the near-border and forest communities to buy wild medicinal plants and game products. In spring, they actively buy Far-Eastern frogs involving local kids in these activities. Ads for buying and selling musk deer gland and bear bile are now increasingly placed in newspapers and at internet sites.

Both legally obtained game resources (those hunted with a permit) and illegally trapped animals enter trade. The objective of hunting is to procure wild meat products for personal consumption and wild animal parts used in traditional medicine for subsequent sale to Chinese and Russian buyers. Local residents named roe deer, Manchurian wapiti, badger, wild boar, hare, pheasant, ducks as the main game species. No-one reported any hunt for Amur tiger or Far Eastern leopard. Everyone is aware of the criminal liability for the poaching of these two species. No bear hunts were reported either, but some near-border residents claimed that they "could procure bear fat and bile if necessary."

The following groups are known to be directly engaged in poaching in Primorsky Territory: rural residents owning firearms; amateur hunters with all-terrain vehicles; military servicemen and border guards with access to hunting or service guns who serve at border posts or in remote garrisons; nationals of China and PDR Korea temporarily residing in Russia.

Direct poaching by Chinese nationals and the activities of Chinese buyers that stimulate poaching by the Russians are of greatest concern to the law enforcement and environmental authorities. They operate in every district of Primorsky Territory.

A survey of trading areas and markets in September 2018 in Vladivostok and Ussuriysk has detected sales of various products from wild plants and wild

animal parts and derivatives. Among them were antlers of Manchurian wapiti and sika deer, bear bile, bear and badger fat, castoreum, wapiti and roe deer meat, various food supplements and so called 'potency drinks' containing extracts of musk gland, deer antlers, bear bile, sea cucumber, castoreum, glands of frogs and toads, saiga horns and even cordyceps (either falsified or smuggled in from China). These products are of utmost interest to the nationals of China, Korea and Vietnam who buy them for subsequent export.

The study revealed active buying by Chinese nationals of the parts and products of elephant and mammoth ivory, sperm whale teeth, saiga horns and deer antlers for subsequent export to China. Previously strong demand for walrus fangs has plummeted. Ads for buying these animal parts are posted not only in crowded places but online. At the same time, sellers reported that following the interdiction by Russian customs of several buyers of ivory and mammoth products and sperm whale teeth, Chinese buyers became more cautious.

Online information exchange on supply and demand, buying and selling of wildlife products has vastly increased in the recent years. Such online ads have become a commonplace phenomenon. E-commerce platforms such as Avito.ru, Youla.ru, FarPost.ru, Meshok.net and many others are flooded with buying and selling ads for wildlife products.

A study of the Chinese market in 2016 has shown that it is saturated with farmed wild animal products that are popular with Chinese consumers. These include bear and musk deer farms, red deer and wapiti farms, frog farms, wild ginseng and mushroom (e.g., matsutake) plantations, as well as sturgeon farms. At the same time, store owners in the near-border towns of China expressed high interest in procuring wild animal products (bear bile, musk gland, deer antlers, etc.) from Russia. Chinese and Russian customs data record steady flows of such products into China. Every year, customs officers interdict dozens and hundreds of bear paws attempted to be illegally exported to China. Since 2014 to 2018 Chinese and Russian customs officers seized 2,000 paws of brown and black bears that were attempted to be exported from Russia to China.

All products offered in official pharmacies are made of legally purchased wild animal parts. Private pharmacies and stores specializing in plant- and animal-based medicinal products were selling pangolin scales, saiga horn dust, powder and pieces, products made of musk gland, bear bile, deer antlers, penises of various animals, etc. Seller reports indicate that, since recently, the Chinese market is being filled with counterfeit and imitation products. This primarily relates to pharma products made of musk gland, bear bile, deer penises, etc. Tightening of controls of trade in CITES specimens and other rare species of wild animals and plants both in Russia and China has undoubtedly contributed to the emergence of such counterfeits and imitations. High demand on animal- and plant-based medicines and the surge of purchasing power in China have triggered the activization of unscrupulous manufacturers flooding the domestic Chinese market with imitation products. Russian suppliers are keeping up. Sellers reported more frequent instances of exporting faked bear bile and musk gland from Russia. Pig bile was often posed as bear bile, while sellers found musk glands filled with a foreign substance only in appearance reminiscent of musk.

Increased instances of smuggling from Russia into China of fake medicinal products under the guise of wild animal products (bear bile and musk gland) stimulate further search for genuine wild products from Russia and boost the demand.

1.2. WILDLIFE TRAFFICKING

In 2012–2018, the Far Eastern regional customs have detected and interdicted 302 offenses of wildlife trafficking across the Eurasian Customs Union borders.

In addition to criminal cases, the Russian Far East regional customs opened 270 administrative offense cases against violators of the established wild fauna export procedures during the same period. Figure 30 shows the number of such administrative cases opened in 2012–2018.

Table 41. Criminal and administrative offenses related to wildlife trafficking across the customs border of the EACU, as detected by the Russian Far East regional customs in 2012–2018

Detected crimes and administrative offenses	Year							
of wildlife trafficking	2012	2013	2014	2015	2016	2017	2018, S1	
Smuggling (Article 226.1 of the Criminal Code of Russia)	0	1	0	5	8	10	8	32
Administrative offenses (Articles 16.1,16.2, 16.3 of the Code of Administrative Offenses of Russia)	44	24	34	40	68	50	10	270
Total	44	25	34	45	76	60	18	302



Figure 30. Number of administrative cases opened in 2012–2018 against the infractions of the existing customs procedures for wild fauna exports

According to the provided data, Chinese nationals account for the bulk of administrative offenses related to wildlife exports from Russia. The offense specimens included wild animal parts and derivatives used in traditional medicine, fur animal skins, wild animal parts (teeth, fangs, claws) used in souvenirs. Overall, the customs interdictions of administrative offenses from 2012 through June 2018 comprised: 130 g of Amur tiger bones and fragments, 3 tiger paws, 801 bear paws, 107 pieces of bear bile, 130 pieces of musk dear gland, 480 skins of fur animals, 8 saiga horns, 16.48 kg of Far Eastern frog parts, etc. Table 42 provides further details.

Interdicted wildlife	Year							
apeennena	2012	2013	2014	2015	2016	2017	2018, S1	
Amur tiger parts (bones and their fragments, etc.)	-	_	_	130 g	-	_	-	130 g
Tiger paws	3 pc.	-	-	_	-	-	-	3 pc.
Bear bile	18 pc.	1 pc.	12 pc.	8 pc.	63 pc.	-	5 pc.	107 pc.
Bear paws	67 pc.	6 pc.	16 pc.	11 pc.	693 pc.	17 pc.	2 pc.	812 pc.
Bear fangs	-	-	2 pc.	24 pc.	50 pc.	38 pc.	46 pc.	160 pc.
Bear claws	-	-	1 pc.	42 pc.	94 pc.	97 pc.	-	234 рс.

Table 42. Wildlife specimens interdicted by customs in administrative offensecases in 2012-2018

Table 42 Continued (1).

Interdicted wildlife	Year								
opcontento	2012	2013	2014	2015	2016	2017	2018, S1		
Bear jaws	-	-	_	1 pc.	-	-	-	1 pc.	
Bear bones and foot joints	_	_	_	0.4 kg	-	-	0.5 kg	0.9 kg	
Souvenirs of bear claws and teeth	_	_	_	34 pc.	-	_	-	34 pc.	
Wolf claws and teeth	_	_	_	-	-	307 pc.	-	307 pc.	
Wolf face top with nose	-	_	_	_	_	1 pc.	-	1 pc.	
Velvet antlers of sika deer and wapiti	14 pc.	86 pc.	2 pc.	2.54 kg	84 pc.	6 pc.	-	> 200 pc.	
Deer antlers	17 pc.	1 pc.	4 pc.	18 pc.	3 pc.	9 pc.	-	52 pc.	
Deer tails	1 pc.	_	2 pc.	-	78 pc.	_	-	81 pc.	
Deer penises	133 pc.	17 pc.	25 pc	8 pc.	38 pc.	26 pc.	-	247 pc.	
Dried deer blood	-	_	_	_	0.056 kg	-	-	0.056 kg	
Musk deer gland	49 pc.	26 pc.	3 pc.	11 pc.	14 pc.	27 pc.	-	130 pc.	
Squirrel skins	399 pc	_	_	-	_	_	-	399 pc	
Muskrat skins	43 pc.	24 pc.	_	-	_	-	-	67 pc.	
Otter skins	-	1 pc.	-	-	-	-	-	1 pc.	
Hare skins	-	1 pc.	_	-	_	_	-	1 pc.	
Skins of fur animals	-	72 pc.	_	-	_	_	-	72 pc.	
Far Eastern frogs ('fat' and parts)	2.85 kg	_	_	_	8.29 kg.	2.34 kg	3 kg	16.48 kg	
Wild boar fangs	_	_	_	_	_	6 pc.	-	6 pc.	
Parrots	4 pc.	_	_	_	_	_	-	4 pc.	
Tortoise shells, bones, skulls	_	_	1 pc.	_	-	-	-	1 pc.	
Saiga horns	-	-	_	-	7 pc.	-	1 pc.	8 pc.	

Figure 31 illustrates the number of detected administrative offenses related to procedural infractions in the export of wild animal specimens enjoying highest demand in East and Southeast Asia countries.

The graph reveals an incessant interest from abroad in wild animal parts and derivatives that are used in traditional medicine, mostly parts and derivatives of musk deer, sika deer and red deer, Asiatic black bear and brown bear, Amur tiger, Far Eastern frogs. The increase in detected administrative offenses is caused both by the growing demand and by the emergence of local retail facilities offering these products to individuals. It is also definitely linked to the growing efficiency of the Far Eastern Customs K-9 department that trains sniffer dogs to detect wildlife specimens.

In 2017–2018, the customs started facing the issues with legal prosecution of offenders who violate the established export procedures for species listed in the regional Red Data Books. The Eurasian Customs Union legislation sets nontariff regulations for the species listed in the Red Data Books of the member-states. Regulation and administrative enforcement of wildlife trade in species listed in the regional Red Data Books is the mandate of



Figure 31. Number of detected administrative offenses in the export of certain wild animal specimens in 2012–2018

regional authorities, whereas customs fall under the federal jurisdiction. Certain species of reptiles and amphibians that are illegally hunted for medicinal products by Chinese nationals temporarily residing in Russia – e.g., Amur rat snake (*Elaphe schrenckii*), tiger keelback (*Rhabdophis tigrinus*), Sakhalin adder (*Vipera berus sachalinensis*), oriental firebellied toad (*Bombina orientalis*), Mongolian toad (*Strauchbufo raddei*) – are listed in the Red Data Books of Amur Region, Khabarovsk and Primorsky Territories and Jewish Autonomous Region. This legal gap (inability of customs to require the legality-of-origin documentation) prevents the customs from interfering with the export of specimens listed in the regional Red Data Books that were illegally hunted but duly declared for a customs inspection.

In 2012–2018, 32 criminal cases were opened in the Russian Far East for the smuggling of specimens of wild fauna¹²⁰ classified as strategic goods and resources or high value species. Of these animal smuggling crimes, 22 cases involved destinations in China and 10 in Korea.

An attempt in January 2018 to smuggle parts and derivatives of Amur tigers, brown and black bears worth more than 50 million rubles (US\$ 781,250) by an international criminal group became one of the highest profile cases of attempted wildlife trafficking across the international border in the Russian Far East. Illegally traded specimens were moved in the same shipment with amber, firearms and ammunition over the ice of Lake Khanka, bypassing customs and border checkpoints. As a result, three Chinese nationals were sentenced to 4 years and 10 months in a maximum security penal colony, and a woman from Primorsky Territory - to 3 years and 6 months of imprisonment in a penal colony with a fine of 1.3 million rubles (US \$ 20,312) and a six-month prison sentence.

This time series tells a clear story of regulatory changes in Russia. The law of 2011 amended the Criminal Code of the Russian Federation whereby the article covering smuggling liabilities was revoked and a new article was introduced. However, the implementing regulations for the new article were only put in place later in 2013. Hence, zero cases in 2012 and only three in 2013. In 2014-2016, there has been a significant growth in detections and interdictions of wildlife smuggling – thus attesting to the increased efficiency of customs operations related to wildlife.

¹²⁰ Excluding aquatic and tree bioresources.



Criminal cases against the smuggling of wild fauna

Figure 32. Criminal cases opened against wild animal smuggling, 2012–2018

Criminal cases opened against wild animal smuggling in the said period referred to the smuggling of the following specimens: Amur tiger parts – 4 cases, musk deer parts (musk gland) – 15 cases, brown and black bear parts – 6 cases, live beluga whales – 4 cases, fur animal pelts – 4 cases, saiga horns – 1 case, white rhino parts – 1 case. About 70 percent of the interdicted cases of animal smuggling involved animal-based medicinal products that are used in traditional medicine (Amur tiger parts and bones, bear bile and paws, musk deer gland, rhino horn).



Figure 33. Number of interdicted cases of wild fauna smuggling

Table 43. Interdiction of wild animal parts and derivatives smugglingin 2012–2018

Species	Parts and	Year						Total	
	derivatives	2012	2013	2014	2015	2016	2017	2018, S1	
Amur tiger	Bones	_	-	-	1.3 kg	0.07 kg	-	25.95 kg (5 individuals)	27.32 kg
	Claws	_	-	-	-	_	-	18 pc.	18 pc.
	Teeth	-	-	-	-	_	-	-	-
	Skins	-	-	-	-	_	-	1 pc.	1 pc.
	Kneecaps	-	-	-	-	_	_	4 pc.	4 pc.
	Minced meat	_	-	-	1.2 kg	-	-	-	1.2 kg
Brown	Paws	-	-	-	-	525 pc.	-	867 pc.	1 392 pc.
and black	Fangs	-	-	-	-	_	4 pc.	-	4 pc.
bear	Claws	-	-	-	-	_	-	306 pc.	306 pc.
	Kneecaps	-	-	-	-	_	_	6 pc.	6 pc.
	Gallbladders	_	-	-	-	18 pc., 700 g	14 pc., 316 g	3 рс.	> 35 pc.
Fur	Mink pelts	-	-	-	734 pc.	_	-	-	734 pc.
animals	Marten pelts	-	-	-	2,155 pc.	_	_	-	2,155 pc.
	Otter pelts	-	-	-	49 pc.	_	_	-	49 pc.
	Muskrat pelts	_	680 pc.	-	-	-	-	-	680 pc.
	Squirrel pelts	-	-	-	100 pc.	-	-	-	100 pc.
Musk deer	Musk gland	-	-	-	-	275 pc.	851 pc.	203 pc.	1329 pc.
Saiga	Horns	-	-	-	-	-	-	25 pc.	25 pc.
White rhino	Horns and fragments	-	-	-	-	8.484 kg	-	-	8.484 kg
Beluga whales	Live animals	_	-	-	-	8 pc.	3 рс.	-	11 pc.

Attempted smuggling from Russia to Korea typically included musk deer gland and bear bile for use in traditional medicine. Smuggling cases to China featured Amur tiger parts and derivatives, live beluga whales, rhino parts, brown and black bear parts, fur animal skins, as well as musk deer gland and bear bile for use in traditional medicine, etc. Total volumes of interdicted wild animal smuggling are shown in Table 43. No criminal cases were opened for wild animal smuggling in 2012 and 2014. Where applicable according to the Code of Criminal Procedure of the Russian Federation, the customs authorities transferred criminal cases of wild animal smuggling for further investigation to the line or territorial departments of the Ministry of Internal Affairs of Russia.

The scope of poaching in Primorsky Territory can be evidenced by the data published by the press services of the region's police and wildlife departments. The police department's press service has reported over 50 poaching cases that were detected in Primorsky Territory in 2012–2018, both directly by the department and in coordination with other law enforcement and environmental authorities. Poaching cases were detected both directly on hunting sites and during vehicle inspection raids by traffic police. Illegal hunting and trade targets primarily included birds of prey (14 gyrfalcons), brown and black bears (156 paws, 36 bile specimens and other parts), Amur tiger (over 17 skins and other parts), ungulates (musk deer, roe deer, red deer, elk).

Territorial branches of the Federal Security Service (FSS) and its Border Service make a substantial contribution to the prevention, detection and suppression of wildlife smuggling. The analysis of available data shows how the geographic range of certain species influences the focus of operations of the FSS officials. For example, detection and suppression of gyrfalcon and brown bear smuggling is prevalent in the FSS operations in Kamchatka Territory; prevention, detection and suppression of poaching and smuggling of derivatives of Amur tiger, Asiatic black bear, sika deer and Manchurian wapiti is common for the FSS and Border Service operations in Primorsky Territory; detection and suppression of poaching and smuggling of derivatives of Amur tiger, brown and black bears is prominent in the FSS and Border Service activities in Khabarovsk Territory and Jewish Autonomous Region. Noteworthy were the joint operations of the FSS Kamchatka Territory branch, Yelizovo district police and the Kamchatka Forestry and Wildlife Agency that seized 78 gyrfalcons in 2012.

Table 44 exhibits selected data on the detection and suppression of wildlife smuggling by the territorial branches of the FSS and its Border Service in the Russian Far East.

Table 44. Detection and suppression of wildlife smuggling by the territorial branches of the FSS and its Border Service in the Russian Far East from 2012 to 2018¹²¹

Date	Region	Species / part of seized animal	Quantity	Agency
23.01.2012	Primorsky Territory	Bear paws	-	Border Service
23.01.2012	Primorsky Territory	Roe deer	1 pc.	Border Service
29.10.2012	Kamchatka Territory	Gyrfalcons	14 individuals	FSS, Police, Forestry and Wildlife Agency
31.10.2012	Kamchatka Territory	Gyrfalcons	14 pc.	FSS, Police, Forestry and Wildlife Agency
07.11.2012	Kamchatka	Gyrfalcons	58 individuals	FSS, Police
	I erritory	Peregrine falcons	2 individuals	
		Snow sheep	Derivatives	
		Reindeer	Derivatives	
20.06.2012	Primorsky	Amur tiger skins	2 pc.	Police, FSS
	Territory	Amur tiger tails	5 pc.	
		Black bear skins	2 pc.	
		Brown bear skins	3 рс.	
		Bear paws	148 pc.	
		Steller's sea eagles	5 bodies	
		Sika deer parts	7 pc.	
		Black vulture	1 individual	
		Mandarin duck	1 individual	
		Amur leopard cat	1 individual	
		Wild boar	1 individual	
		Manchurian wapiti	1 individual	
15.01.2014	Kamchatka Territory	Gyrfalcons	8 individuals	FSS, Police
04.03.2013	Kamchatka Territory	Gyrfalcon	1 individual	FSS, Police, wildlife experts
25.12.2013	Kamchatka Territory	Gyrfalcons	13 individuals	FSS, Police

¹²¹ Compiled from the information of the press services of the Federal Security Service of Russia and its Border Service // http://ps.fsb.ru/smi.htm.

1. WILDLIFE TRADE IN THE RUSSIAN FAR EAST IN 2012-2018

Table 44 Continued (1).

Date	Region	Species / part of seized animal	Quantity	Agency
20.07.2014	Khabarovsk	Amur tiger skins	2 pc.	FSS, Police
	lerritory	Bones of bears, wolves and deer		
02.11.2014	Kamchatka Territory	Gyrfalcons	33 individuals	Border Service
25.12.2014	Kamchatka Territory	Gyrfalcons	13 individuals	FSS, Police
20.11.2015	Kamchatka Territory	Gyrfalcons	2 individuals	FSS, Police
20.11.2015	Kamchatka Territory	Gyrfalcons	9 individuals	FSS, Police
21.12.2015	Kamchatka Territory	Gyrfalcons	1 individual	FSS, Police
14.01.2016	Kamchatka Territory	Gyrfalcons	8 individuals	FSS, Police
06.02.2017	Primorsky Territory	Bones of two Amur tigers and two Sika deer	27 pc.	Border Service
03.10.2016	Kamchatka Territory	Gyrfalcons	46 individuals	Border Service
07.09.2016	Primorsky Territory	Tiger cub carcass, 3-5 months	1 pc.	Border Service
10.06.2016	Primorsky Territory	Bracelet from fragments of phalanges of Amur tiger's fingers	1 pc.	Border Service
		Claw phalanx of Amur tiger	1 pc.	
21.11.2016	Kamchatka	Gyrfalcons	7 individuals	FSS, Police
	Territory	Bear paws	93 pc.	
16.11.2016	Kamchatka Territory	Gyrfalcons	17 individuals	FSS, Police
16.12.2016	Primorsky Territory	Amur tiger skin	1	Border Service, Police

Table 44 Continued (2).

Date	Region	Species / part of Quantity seized animal		Agency	
December	Primorsky	Dried sea cucumbers	750 kg	Border Service	
2016	Territory	Saiga horns	1,000 pc.		
		Walrus fangs	240 pc.		
		Bear fangs	300 pc.		
		Bear claws	100 pc.		
		Bear bile	40 pc.		
		Deer antlers	> 1 kg		
25.01.2017	Primorsky Territory	Argali horns	72 pc.	Border Service	
20.01.2017	Kamchatka Territory	Gyrfalcon	1 individual	FSS	
13.02.2017	Zabaykalsky Territory	Bear paws	40 pc.	Border Service	
11.09.2017 Primorsky Territory		Amur tiger's upper and lower jaws, knee joint parts, skeleton bones	1 individual	Border Service	
		Parts of other wild animals (limbs, internal organs)	400 fragments		
27.09.2017	Primorsky	Dried sea cucumbers	> 250 kg	Border Service	
	lerritory	Mammoth tusks	8 pc. 150 kg		
		Walrus fangs	6 pc.		
		Chaga fungus	1 bag		
25.10.2017	Kamchatka Territory	Gyrfalcons	4 individuals	FSS, Forestry Agency experts	
9.10.2018	Khabarovsk Territory	Amur tiger skeleton fragments		Border Service	
07.09.2018	Primorsky Territory	Amur tiger bones (skull, bones)	19 pc.	Border Service	
		Brown bear paws	100 pc.		
		Brown bear bile	40 pc.		
		Sable pelts, Manchurian wapiti skins	70 pc.		

The Chinese customs are also active in detecting smuggling offenses on the Russia–China border. In 2012–2017, Chinese media reported 27 cases of wildlife smuggling interdicted by the Chinese customs on the Russia–China border.



Figure 34. Comparative data on instances of wildlife smuggling from Russia to China interdicted by Russian and Chinese customs

The above figure shows that the strong growth in the activity and efficiency of the Russian customs in 2015–2017 was mirrored by a corresponding decline in the number of wildlife smuggling interdictions by the Chinese customs.

The available data show that the Chinese customs interdicted 27 attempts of wild animal smuggling from Russia in 2012–2017. The amounts of Chinese interdictions are detailed in Table 45.

The reviewed data confirms the increase in the number of criminal and administrative cases opened against wildlife smuggling and infractions of applicable nontariff regulations. Both the never-ending attempts at wildlife smuggling from Russia to China and the growing efficiency of the related customs enforcement have been contributing to this trend.

Utilization of various forms of control within the overall risk management system of the Federal Customs Service, combined with its K-9 service capabilities and deployment of operational investigation units, significantly enhances the efficiency of detection and interdiction of wildlife smuggling.
Table 45. Amounts of animal specimens interdicted by Chinese customs in 2012–2017

Wildlife products	Year						Total	
	2012	2013	2014	2015	2016	2017		
Tiger bones	68 pc.	-	8.39 kg	-			68 pc. + 8.39 kg	
Tiger skins	_	1 pc.	_	_	-	-	1 pc.	
Bear paws	117 pc.	382 pc.	30 pc.	7 pc.	-	-	536 pc.	
Bear bile	11 pc.	-	_	_	3.0 kg	10 pc.	21 pc. + 3 kg	
Bear fangs	-	-	_	65 pc.	3 pc.	-	68 pc.	
Bear claws	-	-	_	8 pc.	8 pc.	-	16 pc.	
Musk deer gland	62 pc.	110.1 kg	55 pc.	255 pc.	_	_	372 pc + 110.1 kg	
Lynx paws	_	_	-	1 pc.	-	-	1 pc.	
Wolf pelts	_	-	_	1 pc.	1 pc.	-	2 pc.	
Wolf fangs	_	_	-	10 pc.	-	-	10 pc.	
Deer tails	2 pc.	-	_	_	-	-	2 pc.	
Deer penises	_	22 pc.	_	_	-	-	22 pc.	
Velvet antlers	_	66 kg	_	_	-	-	66 kg	
Deer antlers	-	-	_	8.3 kg	-	-	8.3 kg	
Marten pelts	_	36 pc.	_	_	-	-	36 pc.	
Otter pelts	_	8 pc.	_	5 pc.	-	-	13 pc.	
Hare pelts	_	56 pc.	_	_	-	-	56 pc.	
Fox pelts	-	15 pc.	_	-	-	-	15 pc.	
Mink pelts	_	61 pc.	_	_	-	-	61 pc.	
Muskrat pelts	_	7,976 pc.	_	_	-	-	7,976 pc.	
Pelts of other fur animals	4,000 pc.	-	_	-	-	-	4,000 pc.	
Pheasants	_	-	_	40 pc.	-	-	40 pc.	
Manchurian hare	-	-	_	10 pc.	-	-	10 pc.	
Amur goral blood	-	-	-	-	448.1 g	_	448.1 g	
Rhino horn fragments	_	_	-	-	-	37 pc.	37 pc.	

1.3. LEGAL EXPORTS OF FAUNA (MAMMALS AND BIRDS) IN THE RUSSIAN FAR EAST IN 2012–2017

The analysis of export–import operations in the Russian Far East in 2012–2017 shows that legal wildlife trade is significantly focused on exports of wild animals, their parts and derivatives to East and Southeast Asia countries.

As stated by the traders, wild animals and their parts and derivatives were exported from Russia with the following objectives:

- reintroduction a female of Asiatic black bear (*Ursus thibetanus*) to the Republic of Korea;
- research skin biopsy samples of grey whale (*Eschrichtius robustus*) for lab studies, blood samples of Amur leopard cat (*Prionailurus bengalensis euptilurus*), skin and muscle samples of brown bear (*Ursus arctos*);
- education and entertainment beluga whales (*Delphinapterus leucas*), killer whales (*Orcinus orca*), Pacific walruses (*Odobenus rosmarus divergens*) to replenish dolphinariums and oceanariums;
- hunting trophies skulls, skins, paws and other parts of brown bear (Ursus arctos);
- commercial pharmaceutical production musk deer gland (*Moschus moschiferus*), dried gallbladder of brown bear (*Ursus arctos*);
- zoo exchanges and species composition expansion programs lynx (*Lynx lynx*), wolf (*Canis lupus*), Asiatic black bear (*Selenarctos thibetanus*).



Figure 35. Number of wild animals, by species, legally exported in 2012-2017

PART IV WILDLIFE TRADE DYNAMICS IN CERTAIN REGIONS OF RUSSIA

The analysis of the export of live wild animals, their parts and derivatives ('goods of animal origin')¹²² in 2012–2017 indicated that the number of export operations has been dropping every year after its sharp increase in 2013 (*Figure 36*). Stale demand on certain species, bans and restrictions on the removal of rare species, complexities in obtaining export permits for CITES-regulated species – all of this has contributed to a decline in the export of live animals.



Figure 36. Number of export operations declaring live wild animals, their parts and derivatives (2012–2017)



Figure 37. Number of beluga whales exported from Russia in 2012–2017

 ¹²² Based on the number of submitted declarations for the export of goods of animal origin (Eurasian Customs Union's commodity codes 106120090, 106120010, 4103909000, 4301807099, 510000000, 506900000, 511991000, 511998599).

Marine mammals accounted for the bulk of live animal exports. Targeting the replenishment of dolphinariums and oceanariums, an initial major growth of this export was apparently driven by the new demand in marine mammals, but the export subsequently subsided (*see Figure 37*).

The high value of marine mammals and their market demand clearly drive the significant volume of exports of these animals. The declared statistical value of these animals, depending on their sex and training, can vary from \$648,203 to \$1,000,000 for killer whales, from \$25,000 to \$50,000 for beluga whales, and from \$12,000 to \$40,000 for Pacific walruses.



Figure 38. Number of export declarations of hunting trophies (2012–2017)

The growth of hunting tourism industry in the Russian Far East triggered an increase in the exports of wild animal derivatives in 2013 - 2014. Utgard LLC has been the sole exporter of hunting trophies¹²³ and the exports dropped after the company stopped its operations (*Figure 39*).

Hunting tourism in Kamchatka accounted for most of the 13 instances of the export of brown bear skins (18) and skulls (25) as hunting trophies (*Figure 39*).

Legal exports of animal-based products actively used in the traditional medicine (musk deer gland, bear bile) took off in earnest since 2015 (*Figure 40*). The growth of legal exports was evidently influenced by the

¹²³ Brown bear parts (skins and skulls).

effective anti-smuggling efforts and the increased occurrences of fake musk gland and bear bile posing as wild-sourced medicinal products smuggled from Russia to the Chinese market [Lyapustin, Pervushina, 2016].

Overall, the Far Eastern Regional Customs Department recorded the export of 157.14 kg of musk deer gland and 5.2 kg of brown bear bile in 2012–2017. Hunting services companies registered in Amur Region, Primorsky and Khabarovsk Territories originated these exports. Assuming an average



Figure 39. Export of hunting trophies (skins and skulls of brown bear) (2012–2017)



Figure 40. Growth of export of animal- and plant-based medicinal products (2012–2017)

weight of a dried musk gland to be about 20 grams, it would take hunting down 7,857 musk deer males to export this amount of musk gland. With an average bear bile weight of 50 grams, 104 brown bears would need to be hunted to export this amount of bear bile.

Therefore, the main legal exports of wild fauna from the Russian Far East in 2012–2017 comprised marine mammals, brown bear trophies and animalbased medicinal products (musk deer gland and bear bile). China and other Asia–Pacific countries were the primary destinations for the exported marine mammals and wild animal parts and derivatives. Hunting trophies were mainly shipped to the US and EU countries.

2. WILDLIFE TRADE IN THE ALTAY-SAYAN ECOREGION IN 2005–2016

E.G. Nikolenko, I.E. Smelyansky

Trade in some species of the Altay-Sayan Ecoregion (ASER) is a major factor affecting their current and future populations in the wild. In this region, such species include the saker falcon and musk deer.

To assess the trade in the species supplied from the Russian Altay-Sayan Ecoregion, the Siberian Environmental Centre (*Sibecocenter*) was commissioned by WWF Russia to monitor this market drawing on publicly accessible information sources in 2006, 2008 and 2016 and did it. The resultant data provided a basis for estimating illegal trade volumes of selected species and to compare the situation of 2014–2015 with the results of the reviews of data for 2005–2008.

The study was mostly focused on the regional market of local species, including both live animals and their derivatives. To a lesser degree, it highlights the extension of this market outside the Altay-Sayan Ecoregion in Russia, and marginally, it touches upon the international market of wildlife from the Altay-Sayan Ecoregion. It covers only the trade in native species. This review does not contain information about the trade in birds of prey as it is provided in a separate section.





2.1. METHODOLOGY¹²⁴

The most relevant local source of data is private buy-and-sell advertisements of animals or their parts and derivatives in local (regional) newspapers. Other sources include private advertisements at regional websites, web-resources outside the region and websites of companies engaged in trading in the reviewed items and providing hunting tourism services. In addition, important information was drawn from interviews with regional wildlife management experts and a questionnaire-based survey of providers of hunting services conducted in 2006 as well as responses of the respective public authorities to our questions. In some cities and highways of the regions, repeated point-ofpurchase surveys were undertaken to get an insight into street trading.

The authors perused advertising papers, online advertising boards (including those in social media), monitor street trading and websites of companies acting as marketplaces with different composition of market actors, types and scales of transactions and degrees of trade legality. The used sources reflect the situation in different marketplaces (trading platforms) and complement one another.

Illegal trade in the rarest, 'exclusive' species such as the snow leopard, argali, etc. is scarcely visible in publicly accessible sources. So, an understanding of this part of the market can be attained mostly through interviewing experts.

2.2. MARKET STRUCTURE AND MARKET PLAYERS

In the Altay-Sayan Ecoregion, the market of wild animals and their parts and derivatives includes two components which may be conventionally called 'commercial' and 'non-commercial'.

The commercial component consists of 'professional' market players whose business is trade in parts and derivatives. It is highly institutionalized: the market is dominated by actors representing organizations (legal entities or criminal communities). There are several categories of market players defined with types of goods and transactions as well as their places in the supply chain. Some market players have highly diversified operations with an extensive geographical coverage. In this component of the market, prevailing

¹²⁴ The section uses the following currency conversion: $1 \text{ USD} \approx 24 \text{ RUB}$ as of 2007; $1 \text{ USD} \approx 38 \text{ RUB}$ as of 2014; $1 \text{ USD} \approx 63 \text{ RUB}$ as of 2015.

operations are wholesale transactions with small batches or single specimens procured only for purposes of wholesale batching at the end of supply chains. This component has a relatively small and constant range of key traded specimens as discussed in detail below.

The non-commercial component consists of the most visible and numerous players: these are, primarily, private individuals with trade in wild animals (or their parts and derivatives) being neither a job/business nor an important source of income for them. Such actors sell unnecessary household things or buy something for personal use. In such cases, trade items are highly diverse. They range from interior decoration items (stuffed animals, souvenir horns to decorate walls, bearskin rug), costume jewellery, medicinal products, surplus outputs of amateur hunting (meat, skins), etc. The number of hunted species is also indefinitely great.

In the reviewed open marketplaces, the two key market components differ in many respects which can be used to distinguish them and assess the 'commercialisation' extent of a marketplace:

- 1. The ratio of the number of institutionalized players (organizations, legal entities) to that of private individuals among market players: The 'commercial' component is characterized with a large share of institutionalized actors.
- 2. The demand/supply ratio: in the commercial component, the demandside segment is more vibrant than the supply-side segment (because the only thing which is visible in the open market is purchases of unprocessed hunting products) whereas the non-commercial component demonstrates the opposite behaviour.
- 3. Repetition of advertisements: the commercial component is characterized with frequently repeated ads (in several issues of an advertising paper, in several advertising papers and/or online advertising boards at the same time, 10–13 times on the average). In the non-commercial component, ads may be repeated but only a few times.

Functionally, these two components of the wildlife market hardly 'meet' each other at the regional level. Some supply chains of the commercial market end up with retail sales at the local market, actually intervening in the non-commercial component (thus, redesigning it and making it less non-commercial). However, such retailers' operations tend to go far beyond the geographic borders of the region. In addition, within the region, they are, as a rule, selling through specific trading platforms/marketplaces (company websites, offline shops and kiosks, etc.), whereas in key non-commercial market platforms monitored by the authors (in advertising papers and online advertising boards), they are rarely found.

Both components of the wildlife market rely on local trading platforms (advertising papers and online advertising boards), but these platforms play strikingly different roles.

The commercial component is largely avoiding open marketplaces. Perhaps, the only region-specific exception is fur auctions. But they are related to only one of numerous marketed products (furs), fur auctions are held outside the region and cannot be regarded as completely transparent processes. Lack of transparency is typical even of the legal part of the commercial wildlife market to say nothing about the illegal part. The commercial component enters open marketplaces only where institutionalized actors require contacts with an indefinite and broadest range of counteragents. In the wildlife market, such needs usually arise in the beginning and at the end of a supply chain. At the end of a supply chain, open marketplaces are necessary for retailing of end products - this is a universal market practice. A specific feature of the wildlife market is the need to go out into open marketplaces at the initial stages of supply chains as well, i.e. at the stage of buying unprocessed hunting products. Buying of derivatives is visible in advertising papers and online ad boards. Such advertisers target sellers who are legal and illegal hunters (directly removing animals from the wild) and primary buyers, who use personal contracts to collect game from hunters (these roles may rest with one person). Only this small and very specific segment of the commercial market is observable and might be evaluated by the authors.

On the contrary, the non-commercial market relies mostly on open marketplaces and does not have a 'subsurface part'.

In the Altay-Sayan Ecoregion, the mid-2000's (2005–2007) featured a clear domination of the non-commercial market in open marketplaces of big cities and regions where appropriating economy did not play a major role. It was most expressly manifested in Novosibirsk and Kemerovo, and to a lesser degree, in Krasnoyarsk and Biysk. On the opposite, the commercial component dominated in marketplaces in those parts of the region where appropriating economy remained important. In our sample, these are, primarily, the following three regions: the Republics of Altay, Tyva and Khakassia and also Shushenskoye District in Krasnoyarsk Territory. However, by 2014–2015, the trend reversed to change the situation completely. In big cities, the wildlife market started to demonstrate signs of the commercial component domination and in the Republics of Tyva and Altay, commercialization became significantly less noticeable. E.g., in newspapers of big cities, the average repetition rates of wildlife-related advertisements increased to reach the levels typical of the commercial market though in the Republics of Tyva and Altay, they dropped to quite non-commercial levels. Similarly, in these two republics, the demand/supply ratio also changed in advertisements. But, in 2014–2015, these quantitative indicators turned out to be inapplicable for Altay and Tyva because of the ten-fold reduction in the number of ads related to wildlife in their advertising papers to become insufficient for correct estimation.

So far, it is not clear how to interpret this newly emerged picture. It may be accounted for by the shift of a large part of the market to the internet in recent years (e.g., as a result of mass availability of smartphones and mobile internet access). Another point is that the number of online ads almost tripled in 2015 compared with 2008 and 2014 and increased four times versus 2005 and 2007 (*Figure 41*). But advertising papers also became largely available in the internet; and, now, they hardly differ from online advertising boards. Presumably, this has led to concentration of buyers in major advertising publications of the main centres which have become equally accessible for the regional target audiences as local regional publications, but the central publications have a broader range of potential readers.

By 2007, there was an increase in the share of the non-commercial component in the number of advertisements in the internet, but afterwards, the ratio

Figure 41. The number of ads to sell and buy wildlife products related to the Altay-Sayan Ecoregion, online advertising boards over time





changed only slightly with the share of the commercial component remaining close to 20% in the total flow of online ads (*Figure 42*).

At the same time, the ratio between demand-side and supply-side online advertisements remains unchanged in spite of the above developments. During period of 2005–2015, each of the surveys showed that the demand/ supply ratio averaged 1:4 (with the demand-side share being from 15% up to 25% in the total number of ads).

A special advertising platform for the commercial sector is provided at companies' websites. They shed light, primarily, on the final parts of supply chains, i.e. sales to end-consumers. But some market actors also use their websites to buy unprocessed hunting products. In particular, companies based in Krasnoyarsk and Irkutsk (see below) use their websites to buy skins and unprocessed fur, including these products from the Altay-Sayan Ecoregion, in relatively big batches (relative to the regional market scale). Small artisan workshops using parts and derivatives (to manufacture stuffed animals, souvenirs, etc.) also use their own websites as important marketplaces. Market players of this category tend to shorten supply chains, incorporating the entire cycle of hunting produce processing within their own companies. Therefore, their websites reflect the first and the last parts of supply chains, i.e. purchases of unprocessed products from hunters and retail sales.

In the commercial market, the last parts of supply chains may be also observed at marketplaces in the real world: in street markets, trade centres and public spaces.

2.3. TRADED SPECIES AND SPECIMENS

About 40 species and groups of species such as waterfowl, birds of prey, etc., are harvested for sale in the Altay-Sayan Ecoregion (*Table 46*). The regional market offers primarily parts and derivatives of game species hunted on a mass scale (wolf and bear fangs and claws, wolf and fox fur), while also providing products derived from species other than game resources and even species listed in the Red Data Books (most commonly, products made of claws of birds of prey and owls). Almost one-third of all traded species are included in the CITES Appendices. Brown bear is the top seller ahead of all other species of the Altay-Sayan Ecoregion in this respect. Wild populations of saker falcon and musk deer are among those most heavily affected by wildlife trade.

The most frequently traded parts and derivatives in the ecoregion include skins (furs and taxidermy parts), finished taxidermy products (stuffed birds and mammals, skin rugs, stuffed heads on plaques, etc.), castoreum and deer musk, horns and antlers, bear bile and paws, fangs and claws.

Species (group of species)		Game resources in the Russian regions							CITES
		AL	KR	KE	RA	RK	RT		
1. Siberian wapiti		+	+	+	+	+	+	-	_
2. Moose (Alces alces)		+	+	-	+	-	+	-	-
3. Reindeer (Rangifer tarandus)		-	-	-	-	-	-	+	-
4. Roe deer (Capreolus capreolus)		+	+	+	+	+	+	-	_
5. Musk deer (Moschus moschiferus)		-	+	-	_	_	_	_	+
6. Boar (Sus scrofa)		+	+	+	+	+	+	-	-
7. lbex (Capra ibex)		-	+	_	+	_	+	-	_
8. Argali (Ovis ammon ammon)		-	-	-	-	-	-	+	+
9. Brown bear (Ursus arctos)		+	+	+	+	+	+	-	+
10. Snow leopard (Panthera uncia)		-	-	-	-	-	-	+	+
11. Lynx (Lynx lynx)		+	+	+	+	+	+	_	+
12. Pallas's cat (Otocolobus manul)		-	-	-	_	_	_	+	+
13. Wolf (Canis lupus)		+	+	+	+	+	+	_	+

Table. 46. Traded species and their legal status during the study

Abbreviations: NO – Novosibirsk Region, AL – Altay Territory, KR – Krasnoyarsk Territory, KE – Kemerovo Region, RA – Republic of Altay, RK – Republic of Khakassia, RT – Republic of Tyva, RDB – Red Data Book of the Russian Federation

PART IV						
WILDLIFE	TRADE	DYNAMICS	IN CEI	RTAIN	REGIONS	OF RUSSIA

Game resources in the Russian regions RDB Species CITES (group of species) NO AL KR KE RA RK RT 14. Fox (Vulpes vulpes) + + + + + + + _ _ 15. Badger (Meles meles) + + + + + + + _ 16. Wolverine (Gulo gulo) + + + + + + + _ _ 17. Mink (Mustela lutreola) + + + + + + + _ + + 18. Sable (Martes zibellina) + + + + + _ 19. Siberian weasel (Mustela sibirica) + + + + + + + _ 20. Ermine (stoat) (Mustela erminea) + + + + + + + _ 21. Otter (Lutra lutra) _ _ _ _ + _ _ _ _ 22. Hare* + + + + + + + _ _ 23. Marmot + + + + + + + _ _ 24. Squirrel (Sciurus vulgaris) + + + + + + + _ _ 25. Muskrat (Ondatra zibethicus) + + + + + + + _ _ 26. Beaver (Castor fiber) + + + + + + + _ 27. Waterfowl* + + + + + + + _ 28. Capercaillie (Tetrao urogallus) + + + + + + + _ _ 29. Hazel grouse (Tetrastes bonasia) + + + + + + + _ 30. Black grouse (Tetrao tetrix) + + + + + + + _ _ 31. Partridge * + + + + + + + _ _ 32. Altay snow-cock + _ _ _ _ _ _ _ (Tetraogallus altaicus) 33. Shorebirds (sandpipers) * + + + + + + + _ 34. Birds of prey: Saker and peregrine falcons + + _ Eagles*, _ + + _ _ _ _ Hawks* _ + Owl* + _ _ _ _ _ _ _ _ Eagle-owl Bubo bubo + + _ _ _ _ _ _ _

Table 46 Continued (1).

* the species is not specified.

According the providers of hunting services surveyed by the authors in 2005 (and data on Tyva from the 2004 WWF study), the 35 species and general groups of potentially huntable species (including those which are not officially recognizes as game resources) include the following most important species for hunters in the region as a whole: the roe deer, sable, squirrel, Siberian wapiti and musk deer as well as through to a lesser degree, waterfowl, fox, moose, wild boar, bear, lynx, badger and hare. Other species are significantly less important.

The list of species of the greatest importance for hunters almost coincides with the list of species prevailing at open trade platforms.

In the local market (in newspaper advertisements), the most frequently mentioned (offered and demanded) species is the brown bear, and among the general groups of species, it is the deer (Siberian wapiti, Manchurian wapiti, and in some cases, maybe, the reindeer when it is impossible to distinguish concrete species proceeding from advertisement texts). In both printed advertising papers and online advertising boards, these two species exceed the ceiling of 10% in the total number of ads. Other frequently mentioned species are the sable, fox, badger, moose, beaver, wolf and roe deer. The musk deer is often mentioned on online advertising boards and is quite often found in demand-side newspaper advertisements (7%), but the supply-side rarely mentions it in newspaper advertisements (below 1% in the total number of ads). This is accounted for by the market specifics of this species which is traded practically completely through the commercial component of the market.

In a nutshell, the above-listed ten species comprise a quantitative foundation of the regional wildlife market judging by their mentions in advertising papers and internet advertising boards, with the bear, deer and musk deer being in the lead at all platforms.

Over the decade, no drastic changes occurred in the trade in wildlife at the ecoregion level, but the relative importance of certain species did change. The changes relate mainly to the squirrel: it was abundant in the market in 2005–2007, and its share in newspaper advertisements was a little below the shares of the sable and badger and twice as large as those of the beaver and wolf. In 2015–2016, the mention rate of the squirrel got reduced by half and it was no longer found in the list of the most important species (though the demand for it remained rather high in some districts, see below). Badger and beaver trade noticeably increased.

PART IV WILDLIFE TRADE DYNAMICS IN CERTAIN REGIONS OF RUSSIA

An analysis of newspaper advertisements of 2014–2015 was undertaken in several neighbouring districts of Khakassia and southern areas of Krasnoyarsk Territory and revealed the commercial market's demand for various species. Those ads mentioned a total of 15 animal species with 8 of them mentioned only in ads of buying skins (furs). The bear, sable, musk deer, Siberian wapiti and squirrel were in the highest demand (purchased by the greatest number market actors) (*Figure 43*).

The regional wildlife market offers/seeks both live animals removed from the wild and various parts and derivatives. Judging by the frequency of their mentioning in the supply-side segment ads, the ecoregion's most important trade specimens are skins (including furs and inputs for taxidermy), finished taxidermy products (stuffed animals, animal skin rugs, stuffed animal heads on plaques, etc.), castoreum and deer musk, horns and antlers. In the demand-side segment, leading positions are held by the same range of products complemented with bile and paws (of the bear), fangs and claws.

At the local level (a district or several neighbouring districts), the range of marketed products is practically the same. This may be demonstrated using the abovementioned sample of demand-side advertisements from the commercial market in newspapers of several districts in Khakassia and southern areas of Krasnoyarsk Territory (*Figure 44*). The advertisements mention 13 various products. Some of them are species-specific such as bear bile, Siberian wapiti tails and penises while other products may be derived from various animal species, e.g., fangs, claws and especially skins (12 kinds). A special category consists of parts and derivatives from a limited number of definite species, these include deer musk, castoreum, bear and badger fat (in other cases, the market also includes marmot fat).



Figure 43. Species, most frequently mentioned in online ads in 2014–2015 and their shares in the total number of ads in the sample: A - the supply-side segment, n=895 (the listed species account for, at least, 1% of the sample), B - the supply-side segment, n=274 (the listed species account for, at least, 2% of the sample)



Figure 44. Species and traded parts and derivatives featuring in demand-side advertisements of 14 key buyers, published in newspapers in several districts of Khakassia and southern areas of Krasnoyarsk Territory in 2014–2015. A: all parts and derivatives, B: only pelts/skins

Species under trade bans or restrictions

In the market of wildlife of the Altay-Sayan Ecoregion, there are only two local mammal species for which trade is officially recognized as completely illegal and entails criminal liability: they are the snow leopard (*Panthera uncia*) and argali (*Ovis ammon ammon*). Saiga trade is also forbidden and is a criminal offence, but the saiga does not occur in the Russian part of the region. In addition, in some areas of the region, musk deer hunting is forbidden, and respectively, musk deer trade is restricted.

Snow leopard (Panthera uncia)

Traditionally, the trade was focused on skins which were valued high. Currently, other derivatives of this species can be marketed (various bones, skulls, claws and fangs) as it is observed in other countries.

In the late 1990's and till 2004–2005, the demand for and supply of snow leopard skins was rarely seen in open marketplace advertisements. In the recent 10–15 years, such ads are practically non-existent. Probably, the trade has not ceased, but has become less open. However, the respondents also report that cases of selling skins and hunting this species are very rare in recent years. Only two cases of selling its skins are known: in 2011–2012, in the Republic of Altay, 5 skins, brought from Mongolia, were interdicted; and in 2013–2014, an attempt to sell a snow leopard skin was prevented in Barnaul. Both cases do not seem to be part of a systematic trading process.

It appears that there is no purposeful hunting the snow leopard for sale, in the Russian part of the ecoregion. At the same time, there are occasional captures in snares and traps, meant for musk deer and wolf hunting¹²⁵. Most respondents did not know about any snow leopard hunting after 2000.

Argali (Ovis amon amon)

Local experts and respondents report about unceasing poaching pressure on argali throughout its range in the ecoregion. Local people hunt argali for meat, whereas trophy hunters seek its horns. However, the trade in argali is driven mostly by trophy hunting. Derivatives (horns and horned heads) can be rarely found at open marketplaces (once a year on the average) and are evidently incidental: as a rule, argali horns are sold as personal assets of

¹²⁵ One respondent reported two cases in 2014–2016 (four animals were killed), and another one said that he encountered a case of snow leopard hunting (one animal perished in a snare in Argut) in 2011–2012.

unknown origin and even the species identity of such derivatives cannot be confirmed for sure.

Argali is illegally hunted for trophies in the Republic of Altay (we know little about the situation in the Republic of Tyva). Legal entities do not organize such hunting processes (because legal hunting is impossible), this business rests with private outfitters. Participating in trophy hunting with resultant receipt of a trophy is a market product *per se*. It is a common practice to conceal illegal argali hunting under the guise of legal ibex hunting (with a license for the ibex) or wolf hunting.

Saiga (Saiga tatarica)

The trade is focused on saiga meat and horns¹²⁶. Meat is sold practically only in local markets near the saiga habitat areas. Horns are a specimens of transboundary trafficking, with the main markets located in China and countries of Southeast Asia and with very high consumer prices.

Within the ecoregion, saiga occurs in the Mongolian Altay, but we do not know about any cases of selling its derivatives from Mongolia in the Russian market. In the reviewed ads, saiga was encountered occasionally only in 2004–2005. However, approximately since 2013, abundant street ads seeking to buy saiga horns have been placed on a regular basis (once or twice a year) in many cities of the ecoregion (in recent years, saiga horns are usually sought together with deer and moose horns). These ads come from private individuals. No doubt, this is a planned step under a buy campaign covering dozens if not hundreds of cities throughout the country and in Kazakhstan. There is obviously no specific association with the Altay-Sayan Ecoregion. The authors have not investigated this campaign.

Musk deer (Moschus moschiferus)

The main traded product is the male musk gland secretion ('deer musk', 'musk glands'), usually in the form of a dried musk gland. Traditionally, its main markets are China and countries of Southeast Asia. Other sold and bought parts and derivatives include fangs (males have fangs), taxidermy items (stuffed animals, stuffed heads or skulls placed on plaques – usually those of males), frozen male genitals. But the market of such parts and derivatives is dozens of times smaller (both in volume and value terms) than the market of musk and does not go far beyond the region's borders.

¹²⁶ Only males have horns.

In Russia, musk deer is classified as a game species, but in the recent decade, most Russian regions within the Altay-Sayan Ecoregion banned its hunting. Some Russian regions listed it in their regional Red Data Books, which means not only hunting bans but also legislative restrictions on trade in its parts and derivatives. Before and in 2009, export quotas were annually established for deer musk glands under the CITES (for Russia, it was 2,805 pieces in 2009; 3,164 pieces, including 1,629 newly procured glands and 1,535 pieces from old stocks of not exported glands, in 2008; while before and in 2007, the quota was established in kilograms: 68.3 kg for 2007).

Using literature sources and official data for 2007–2008, the authors estimate the deer musk overall regional output at 100–130 kg. With the average weight of one gland being 20 gr, this output is equivalent to about 5,000–6,500 mature males [Smelyansky, Nikolenko, 2010]. With snares being the prevailing hunting method, the total removal from the population is estimated at 15,000–20,000 animals at a minimum (2 to 4 females and young animals per one captured male). The quota is 600-690 animals; hence, the actual hunting output exceeds the allowable level 25-29 times. And in this situation, the officially established limit was not fully utilized: the actual bag of game amounted to 80% of the limit in 2007, and 98% in 2008. Basing on animal counts, the Centre for Game Management and Wildlife and Habitat Monitoring and Analysis estimated the musk deer population of the Altay-Sayan Ecoregion at about 30,000 animals. This figure is deemed strongly underestimated due to inadequacy of the counting methods. But even if the most cautious assumptions are used, one can suggest that at least one third of the population is removed from the wild in the region as a whole with 95% of the removal being illegal.

Currently, musk deer is less available in the market than in 2007–2008 and in 2004–2005. In those years, it was mentioned in 4.6–12.9% of all online ads from the supply-side and in 7.3–27.6% of demand-side ads. Ten years later, musk deer is mentioned only in 3% of online ads from the supply-side and 5% of demand-side ads. Newspaper ads mentioned it proportionally less frequently: 9.7% of all supply-side ads and 2.8% demand-side ads, and now, these rates are, respectively: 0.62% and 6.76%.

The commercialization degree of musk deer derivatives always remains low both in the reviewed newspapers and at online platforms.

In 2004–2008, deer musk was bought from hunters and then resold (at least, once, but usually several times), and finally concentrated in export batches and was shipped to China and Southeast Asia. The border was usually crossed

illegally. This scheme remains operational now, but part of the goods goes the entire way to become a consumer product within the domestic market where it is sold to consumers in the form of traditional medicine products. Earlier, these products were not popular in Russia, but now, the demand for them exists and is growing.

In the initial parts of the supply chain (buying from hunters), musk deer gland prices rose from RUB 230–250 (US \$10) per gram in 2007 to RUB 800–950 per gram in 2014–2015. The price growth was not closely traced on its way along the supply chain, but in 2015, the most prevalent deer musk retail price was RUB 1,400 per gram in Russia (with the minimum and maximum prices being RUB 1,100 per gram and RUB 3,600 per gram, respectively). The product is likely to be exported for approximately the same prices. This provides grounds for estimating the market value in the final parts of the supply chain at RUB 140–182 million per year.

Geographically, there are two key destinations of musk deer gland from the ecoregion: it is shipped either to Krasnoyarsk, Irkutsk, Nizhnevartovsk, Chita, Vladivostok, and Seoul or to European Russia – Tambov, Pskov, Moscow, also in large batches.

Selected game species

Some examples of trade in species officially classified as game resources are provided below.

Brown bear (Ursus arctos)

Among all species in the Altay-Sayan Ecoregion, brown bear is the absolute leader in the market and it largely kept its top rank during the entire period of 2004–2015.

In particular, in 2014–2015, bear was the most frequently mentioned species both in the demand-side segment and (especially) in the supply-side segment in online ads and in the demand-side segment of newspapers ads, whereas it was ranked third (after Siberian wapiti and badger) in terms of frequency of its mentioning in the demand-side segment of newspaper ads. At the same time, judging by our sample of online ads, the Altay-Sayan Ecoregion accounts for about one fourth of the Russian nation-wide market of bear products.

Bear is a leader among traded species of the Altay-Sayan Ecoregion in terms of its record-breaking variety of traded specimens: the market offers nine

derivatives of this species including skins and parts for taxidermy, bile, fat, paws, fangs (teeth), claws, skulls, taxidermy items (stuffed animals, heads on plaques, skin rugs), meat as well as live animals. Skins, fat, bile, fangs and claws hold the most noticeable place in the market.

In the recent decade, the most substantial development was the emergence of a consumer market of bear fat and bile in Russia (and in the region, especially, in big cities). It has emerged practically from scratch: as recently as in 2007, bear bile was produced only to be exported abroad. As of today, out of the whole array of bear parts and derivatives, only bear paws are meant exclusively for export. Trade in bear skins tends to decline, and the demand for small parts such as fangs, claws, bones and skulls is growing (they are used to manufacture souvenir products for the domestic market). These trends are noticeable both in the nation-wide market and within the ecoregion.

There are almost no changes in the price variance between different parts of the supply chain compared with 2005–2007. In 2014–2015, the lowest buying price from hunters was RUB 8,000–10,000 (versus RUB 15,000 in 2007). Finished bearskin rugs are offered for RUB 50,000 in Siberian online shops and for RUB 120,000–300,000 in Moscow.

During the decade, the average price for bile in roubles increased about 1.5 times in 2015 whereas its dollar price decreased almost by half. The maximum dollar price for bile dropped from US\$125–200 per gram in 2005 to US\$25 per gram in 2008, and in 2015, it did not exceed US\$8 per gram. The domestic market of bear bile was developing in the background of such falling prices.

Bear paws may be found in open marketplaces within the ecoregion only in the demand-side segment. In 2015, buyers' price was RUB 800–1,000 per kg (in online ads, it was up to RUB 1,200 per kg). The weight of one paw is about 1 kg. Paws are meant exclusively for export to China where they are used for cooking and traditional medicine. In Russia, there is practically no consumer market of bear paws, but occasionally, they are offered to end-consumers as a fancy meat specialty. In a Moscow online shop, the retail price is RUB 2,200 per kg.

Another way to market bear is trophy hunting. For example, a 9-day tour to hunt a bear in the Republic of Altay was offered in 2017 for EUR2,500 per hunter plus a trophy worth of EUR2,500 plus additional services – totalling about RUB 325,000–350,000. A 'cheap' option was offered by a private outfitter: a 5-day tour worth of RUB 20,000 plus a trophy worth for RUB 50,000 plus a licence fee altogether amounting to about RUB 70,000–100,000. According to respondents from the Republic of Altay, bear hunting is not commercially attractive now and the quotas for this year are not fully utilized. In the region, explicit demand was only for skins and bile while the market of other parts and derivatives was slacking. But in the recent 5 years (surveys of 2016), there is no demand for these goods either, prices are low and buyers would not take them.

In 2012–2013, the Centre for Game Management and Wildlife and Habitat Monitoring and Analysis estimated the bear population of the Altay-Sayan Ecoregion at 19,000–20,000 animals. The 2011–2012 quota for its removal from the wild was set for the ecoregion at about 1,100 animals, and the actual removal amounted to about 360 (32.7% of the quota).

Siberian wapiti

As noted above, in many cases, Siberian wapiti, red deer and Manchurian deer are advertised together in the market¹²⁷.

Siberian wapiti is used to provide a broad range of traded products. In ecoregion, it is only surpassed by bear in the variety of products (6-7 derivatives and live animals). Horns and tails are now the two most actively traded parts of Siberian wapiti. Other specimens that also hold relatively strong positions in the market include: antlers, skins, taxidermy products (mainly, heads with horns on plaques), meat, legs and lower thigh skin ('ski skin'), blood and embryos (blood and embryos are used by Siberian wapiti farms to manufacture antler-based products) as well as live animals. Since 2004–2005, a noticeable decline has been observed in the number of demand-side ads about antlers both in newspapers and online; it may be attributed to the fact that in the ecoregion, the bulk of these products is supplied by Siberian wapiti farms rather than by hunters, so there is no need to use open platforms to buy them. At the same time, antlers are leading among the supply-side online ads: their share in supply-side ads is the same as that of horns in the Russian nation-wide market; and in the Altay-Sayan Ecoregion, it even surpasses the share of horns.

The market of horns is divided into two purpose-specific parts that are weakly interrelated: (1) horns as an input in the manufacturing of traditional medicines: they are mostly traded through the commercial market segment typically in big batches (dozens – up to 50 tons and over), often together with

¹²⁷ The authors call this deer species group 'Siberian wapiti' because in the Altay-Sayan Ecoregion, Siberian wapiti dominates in the market (which is only natural), but actually, it refers to the sodenominated collective species.

horns of other deer species (reindeer and, less frequently, moose and roe deer); both whole horns and their pieces are traded. Siberian wapiti farms supply a rather big share of unprocessed products. This part of the horn market is seen at open platforms, first of all, in the demand-side segment seeking to buy dry horns (they are bought for RUB 100–500 per kg in the ecoregion); and (2) horns as an input in the manufacturing of taxidermy products, souvenirs and art items: this part is not much commercialized, a large share of actors comprise private individuals, horns are quite often sold as single items, and the share of second-hand goods is large. Therefore, the supply-side segment is much more vibrant than the demand-side segment. The most frequently offered goods are souvenir horns for RUB 2,000–3,000 per item.

Siberian wapiti tails are also used as inputs in the manufacturing of traditional medicines using the exocrine gland that occupies a large part of the tail. Frozen tails and genitals with tails are bought for RUB 1,500 per piece. The recent decade saw the emergence of a domestic market of this parts and derivative and, especially, antlers.

During the 10 years, in the supply-side segment of the online advertisement sample, the share of Siberian wapiti increased from 3.8% in 2007–2008 to 10% in 2015–2016, and in the demand-side segment, it decreased a bit: from 18.4% in 2007–2008 to 14% in 2015–2016. The Altay-Sayan Ecoregion accounts for almost one-third of all online ads mentioning Siberian wapiti (31.4%). The share of this species in the regional sample is 17.19% of the supply-side ads and 24.14% of demand-side ads.

Lynx (Lynx lynx)

Skin is the main traded part of lynx. Other traded specimens include taxidermy products (stuffed animals), fangs, claws and skulls.

In 2007, lynx was one of the most frequently mentioned and highly commercialized species. In advertising papers, it ranked fifth in terms of both its share in the total number of ads and the repeat rate of unique ads. This is indicative of predominance of ads from the commercial component of the market (on the average, 7 repetitions per unique ad).

In advertising papers of 2014–2015, lynx almost ceased to be mentioned by the supply-side segment (there was only one unique ad that was posted 6 times) whereas in the demand-side segment, this species remains noticeable to the same degree as ten years ago (*Figure 45*). All demand is now met through buying derivatives in Khakassia and the southern parts of Krasnoyarsk Territory.

Within the ecoregion, the average annual output of legal lynx hunting amounted to about 25-35 animals (e.g., it ranged from 27 to 34 animals in 2010, with such a variance attributed to the failure to specify the hunting locations for 7 lynxes removed in Krasnovarsk Territory). The lower part of the supply chain is typical of furs and skins of all species hunted in the ecoregion and includes the buying of skins from hunters by buying companies and private buyers. In the case of lynx, skins appear to be primarily purchased in the Republics of Altay and Khakassia and in the southern parts of Krasnovarsk Territory. Further routes of the skins cannot be traced with the data available to the authors, but it is obvious that some of them reach taxidermy facilities and fur workshops in big cities within the ecoregion and its surrounding regions (Novosibirsk, Irkutsk) with their products entering the Russian consumer market (a substantial part within the region) directly or through shops (online shops). Some part of skins is likely to be sold through fur auctions, and, in this way, enters foreign export flows. For example, at the St. Petersburg International Fur Auction, lynx skins have been offered only since 2013, and during these four years (through 2016), 431 skins were offered, and 298 skins were sold. It is unknown how many of them came from the Altay-Sayan Ecoregion.

Up until 2007, Russia established annual quotas for lynx skin exports under the CITES; the quotas ranged from 2,500 to 1,000 pieces per year. In the recent 10 years, no quotas were established.



Figure 45. Visibility of lynx derivatives in newspaper ads and lynx population in the ecoregion, over time

In 2015, buyers purchased lynx skins from hunters for RUB 15,000. Within the region, a processed skin was offered to end-consumers on average for RUB 40,000 in 2014 and for RUB 60,000 in 2015. In the same years, at the St. Petersburg fur auctions, average wholesale price for unprocessed skins was US\$639 per piece in 2014 and US\$372 per piece in 2015, but later (in 2016) average prices lowered to US\$200 per piece.

Lynx claws and fangs are used to manufacture costume jewellery. In 2014–2015, they were bought by souvenir workshops and all-round buyers. In 2014, lynx fangs and claws were offered (by sellers) for RUB 2,000 per piece, and RUB 1,000 per piece, respectively. In 2015, skulls were sold for RUB 1,500–3,500 per piece.

Badger (Meles meles)

Fat is the only badger derivative available in the market. In 2007, the market also offered small quantities of badger skins, and in 2014, there was a stuffed animal, and in 2015, live animals were available (probably, for training hunting centres).

In advertising papers, badger fat is mentioned in 15.3% of supply-side unique ads, and 3.7% in the demand-side segment. In 2007, such a disproportion was not observed: these shares amounted to 10% and 8.9%, respectively. In online ads related to the Altay-Sayan Ecoregion, there is no disproportion now either: the badger share of the supply-segment ads is 7.8% and it is 6.9% in the demand-side segment.

In 2014–2015, badger fat was among the most visible goods in local wildlife markets in Shushenskoye, Abaz and Biysk where it accounted for 20%-25% of all unique ads in the supply-side segment of newspaper advertisements. At the same time, the product was completely absent from ads in Novokuznetsk and Shira.

Badger fat is used as a folk remedy and is traded mostly in the domestic market. Judging by available data, this derivative is characterized by short supply chains with most of them staying within the ecoregion and its surroundings.

In 2014–2015, buyers paid RUB 1,200–2,000 per litre of badger fat. But in 2007, the price of badger fat was about RUB 300 per litre. In the top parts of supply chains, retail prices of badger fat (for consumers) reach RUB 5,000–6,000 per litre in big cities (as derived from the prices for small packages).

Beaver (Castor fiber)

Five beaver parts and derivatives are available in the market. These are castoreum, pelts, fat, skulls and taxidermy products.

The beaver's share of the market is comparable to those of roe deer, musk deer and badger: it is mentioned in online and newspaper ads related to the Altay-Sayan Ecoregion approximately with the same frequency. In the supply-side segment, its share is 12.5% of online ads and 9.0% of printed ads, and in the demand-side segment, these shares are 3.5 and 2.8%, respectively. Currently, castoreum is of the greatest market importance among all beaver derivatives. It accounts for 74% of all supply-side online ads about beaver derivatives and 81% of the entire demand. In the sample of supply-side ads relating to the Altay-Sayan Ecoregion, the share of castoreum is even larger (87.5%).

Castoreum is available in the market primarily in the form of two products: dry castoreum (a dry-cured gland weighting 80–350 grams) and alcohol castoreum tincture (there are also other castoreum-based pharmaceuticals such as suppositories, capsules, etc.). Dry castoreum is traded mostly in the commercial market segment and is visible in open marketplaces as an item of buying from hunters. The other product is a finished or semi-finished consumer product; it is found in retail trade as well as in the non-commercial market segment.

The 10 years of observations showed a substantial growth of the domestic market of castoreum. In this context, it should be noted that a price difference is seen even between 2014 and 2015: castoreum got cheaper at the initial stages of the supply chain (buyer prices) on average from RUB 26 per gram to RUB 23 per gram, but the maximum price decreased even more significantly from RUB 65 to RUB 30 per gram. Respectively, end-product (castoreum tincture) prices also went down. In 2014, its average price was RUB 4,250 per litre and in a year later, it was only RUB 2,000 per litre. However, beaver fat did not get cheaper and, perhaps, even became more expensive (it is difficult to trace price trends due to lack of data on the sales of this derivative): its average price was about RUB 2,300 per litre in 2014, and in 2015, there was only one known case of its selling and the price was RUB 4,000 per litre.

Beaver pelts were purchased by buyers for RUB 800 per piece, and in the secondary non-commercial market, they were traded at RUB 1,600–2,500 per piece (with a finished blanket made of an unknown number of sewn pelts sold for RUB 150,000).

2.4. KEY TRENDS AND CHANGES IN THE MARKET OVER THE RECENT DECADE

The structure of the regional wildlife market has been changing quite rapidly. A comparison of the current situation with the situation 10 years ago enables to see some important changes.

An important change occurred in the initial parts of supply chains (primary purchases of parts and derivatives) in the Republics of Altay and Tyva. In 2004–2005, buyers purchased from hunters the parts and derivatives of both legally and illegally purchased animals in a more-or-less free (unstructured) market. Institutional market actors of that time did not have stable relations with suppliers or, at least, did not stick to only stable suppliers; instead, they bought specimens openly guided by free competition. Their search for buyers generated the bulk of wildlife demand-side advertisements in advertising papers.

In 2014–2015, the picture remained almost unchanged in Khakassia and southern areas of Krasnoyarsk Territory, but in the Republics of Altay and Tyva, primary purchases of parts and derivatives practically disappeared from open marketplaces. In these two Russian regions, respective newspaper advertisements vanished. Now, hunting products are bought directly at hunting sites by few people who are personally acquainted with the hunters. In remote communities, there is usually one locally well-known buyer who lives in a given community or not far from it. Areas are more or less permanently distributed among buyers and hunters have well-established marketing channels. At the same time, in the regions' centres, both buying firms and individual buying agents remain operational, but each of them has its own stable network of suppliers, and all trading occurs without going out to open marketplaces. Buyer-supplier relations have developed into steady long-term cooperation and include hunters' work (assignment) which is directly commissioned by the buyers on a basis of advance payment.

Substantial changes also occurred in the final parts of supply chains, i.e. in retail sales of finished products to end-consumers. In this part of the market, the range of goods expanded; the institutionalization enhanced (i.e. some activities moved from primarily non-commercial component to the commercial component); and the distribution networks widened in the regions.

The most notable qualitative change is the redirection of some flows towards the domestic market from almost exclusively export markets (mainly in China and countries of South-East Asia). Ten years earlier, bear bile, deer and badger musk, Siberian wapiti parts and derivatives (except for antlers, horns and skins) had been goods designated almost exclusively for export abroad and had not been found in the domestic retail market. Bear, badger and marmot fat, some of Siberian wapiti antlers had been present in the domestic market, but trade in them had been limited almost exclusively to the non-commercial component of the market, i.e. these derivatives had been sold by hunters themselves, and less frequently, by small private manufacturers, buying derivatives from hunters. In 2014–2015, the situation was already different. The domestic market offered a broad range of products made of the above derivatives, and they were manufactured in commercial quantities through industrial processes, had brand packages, certificates, etc. Respective products were branded and advanced with relevant treatment practices offered, etc.

Another noteworthy change occurred in the retail trade in souvenirs made of animal parts and derivatives. The decade saw the retail trade growth and shift of its significant part from the non-commercial to commercial component of the market. From 2007–2008 to 2014–15, the number of online retailers and websites of workshops actively operating in the market practically doubled and none of them was closed during that time. But the most significant growth was observed in offline retail trade. In the region, the number of respective retail outlets increased ten times. Their geography and range of trading sites substantially broadened. Earlier existing private retail kiosks and counters were complimented with brand shops and distribution chains. This business tended to penetrate into railway stations and airports¹²⁸. Products made of animal parts are not the only goods sold by such kiosks (which also sell other souvenirs), but they account for a substantial share in the range of offered goods and occupy much space in window displays. In fact, as recently as one decade ago trade in souvenirs made of parts did not exist as a separate element of the commercial market; it emerged just during this period. No doubt, the development of the regional souvenir market is associated with the development of inbound tourism and tourist flow enhancement.

Retail trade offers primarily souvenir products made of fangs, claws and skins. Prevailing parts are those of the most widespread game species (wolf and bear fangs and claws, wolf and fox fur), but parts of less common species also may be available (musk deer fangs, fangs and claws of the wolverine and lynx, pelts of various weasels). Species which are not classified as game species and even those listed in the Red Data Books, may be also found in this market. Most of them are birds of prey: the market offers products made of claws of birds of prey and owls, including the golden eagle, eastern imperial eagle, steppe eagle and Eurasian eagle-owl, products made of owl feathers (their trade names do not necessarily coincide with the actual species identity of the derivatives). Charms and pendants made of such claws are available in many special-line kiosk and online shops.

¹²⁸ Such retail outlets operate in railways, airports and in many bus stations practically in all regional centers of the ecoregion; in some of them (e.g. in the airports of Gorno-Altaysk and Novosibirsk, there are several outlets; some distribution chains are also found outside the ecoregion, i.e. in some other airports in the country).

Currently, an important trend is declining operation of foreign actors in open marketplaces. In 2004–2005, foreign actors (including those from China) did not dominate in the market either but were noticeable. By 2016, they almost disappeared. This does not, in any way, mean that export operations have ceased to exist, but now, the trade rests chiefly with Russian companies. For example, several companies export big batches of horns of the Siberian wapiti and roe deer as well as bear and squirrel skins in small quantities from the Republic of Altay and Altay Territory to EU countries. According to the respondents, in the case of parts and derivatives, the bulk of legal exports go through the border checkpoints in Eastern Siberia and the Far East to China. Apart from legal exports, there is significant smuggling (seizure data is available at section "Wildlife trade in the Russian Far East in 2012 - 2018").

The recent decade has brought about the following developments in the Altay-Sayan Ecoregion:

- Emergence of secure and well-organized distribution channels and a network of suppliers instead of an open competitive trade.
- Permanent or long-term cooperation of buyers with suppliers, including harvesting of wildlife under direct assignments from buyers on an advance-payment basis.
- Redirection towards the domestic market of certain goods that were previously exported to China and Southeast Asia, now offering a broad range of products of bear bile, deer musk, castoreum and Siberian wapiti parts and derivatives, while such products are increasingly manufactured at an industrial scale, branded and supplied with brand packages, certificates, instructions on respective treatment practices, etc.
- Emergence of a consumer market of bear fat and bile across Russia and within the region, especially in big cities.
- Decrease in the operations of foreign actors: presently, more export operations are undertaken by Russian companies instead of foreign ones (big batches of Siberian wapiti and roe deer horns being exported to the EU by Russian exporters, as well as smaller batches of bear and squirrel skins).
- Trade in wildlife-based souvenirs as a separate component of commercial market resulting from the growth of tourism in the region.
- Broader choice of goods in the top segments of supply chains¹²⁹, growing institutionalization (shift of trade from primarily non-commercial to commercial market segments) and proliferation of brand store distribution chains in regions, development of retail trade in souvenirs made of parts and derivatives, and the doubling of online retailers and manufacturer websites.

¹²⁹ Retail sales of finished products to end-consumers.

PART V RECOMMENDATIONS

1. IMPROVE LEGAL AND REGULATORY FRAMEWORK

- 1. Develop and adopt a comprehensive normative legal act that would regulate trade in all categories of wild animals, their parts and derivatives and define procedures for the oversight of such trade in Russia and respective functions of competent authorities.
- 2. Develop a legal mechanism for bringing to justice those who attempt to export from the Russian Federation specimens of wild fauna and flora listed in the regional Red Data Books of the Russian Federation that were illegally removed from the wild, as well as their parts and derivatives.
- 3. Lower to 100,000 rubles¹³⁰ the value threshold for all strategically important resources of fauna CITES specimens and species listed in the Red Data Book of the Russian Federation for the qualification of their trafficking across the EACU customs border under Article 226.1 of the Criminal Code of the Russian Federation.
- 4. Approve (by means of respective amendments in the Hunting Law) a procedure for the oversight of trade in game products that would allow to exercise state oversight within and outside hunting grounds regarding of transportation and sale of such products, including the inspections of buyers of such products on the legality of their origin.
- 5. Establish administrative and criminal liability for trade in illegally hunted game products depending on the damage incurred.
- 6. Remove corruption risk factors in normative legal acts that can facilitate the development of illegal wildlife trade, namely:
 - normative collision in the current version of Article 19 of the Hunting Law¹³¹ that conflates commercial hunting and hunting to support traditional lifestyle and traditional economic activities by introducing in the language of the Article the responsibility to obtain free permits for traditional hunting;
 - contradictions between the current legislation on the protection of species listed in the Red Data Book of the Russian Federation that allows no commercial removals of such species and the "Rules of sale

¹³⁰ US\$ 1,560

¹³¹ Federal law "On hunting and conservation of game resources and amending certain legal acts of the Russian Federation" dated 24 July 2009 No. 209-FZ.

of certain types of goods" approved by the Decree of the Government of the Russian Federation dated 19 January 1998 No. 55 that allow commercial sale of such species;

- gaps of administrative process in the Procedures of issuance of permits for trade in species listed in the Red Data Book of the Russian Federation by establishing a list of documents that shall be submitted to verify the data furnished with the trade permit application, grounds for annulling issued permits, and a procedure for oversight by a competent wildlife authority of whether a specific trade transaction complies with the declared type of wildlife use and with the legal requirements of wildlife conservation, reproduction and use;
- corruption risk factors inherent in the Rules of use of confiscated wild animals and plants regulated by CITES – by defining the procedure of cost recovery for organizations that carry out temporary sheltering/ storage of confiscated animals, their parts and derivatives.
- 7. Amend the respective regulation to allow the release of wild animals seized from illegal trade and stored as material evidence back into the natural environment after a 30-day quarantine (provided they are physically fit for this).
- 8. Amend the Administrative procedure for granting permits for export of CITES specimens from the Russian Federation and their import into the Russian Federation that would exclude a possibility of issuing such permits for captive bred CITES specimens without a recommendation of the CITES Scientific Authority.

2. IMPROVE LEGAL IMPLEMENTATION

Registration of CITES specimens and wild animal species listed in the Red Data Book of the Russian Federation

- 1. Optimize the system of registration of CITES specimens and/or wild animal species listed in the Red Data Book of the Russian Federation, namely:
- 1.1. develop a procedure for the registration of breeding stations and individual breeders of CITES specimens, carry out their registration on the basis of this procedure and maintain a register of issued breeding permits by the CITES Management Authority in Russia;

- 1.2. organize the recording and registration of batches of CITES Appendix II specimens imported into Russia¹³² and their respective permits to ensure the legality of their trade within Russia;
- 1.3. develop and approve requirements for individual tagging (marking) and identification of live CITES specimens and/or species listed in the Red Data Book of the Russian Federation that are imported into Russia, removed from the wild, or captive bred in registered breeding stations. Use these requirements to implement individual tagging of the traded CITES specimens and/or animal species listed in the Red Data Book of the Russian Federation.

Interagency cooperation

- 1. Federal Customs Service of Russia, Ministry of Natural Resources and Environment of the Russian Federation, FederalServiceforOversightofNaturalResourceManagement of Russia: establish an interagency council with participation of government, academic and civil society organizations on the issues of trade in wild fauna and flora protected by the international and Russian legislation;
- 2. Law enforcement, customs and other control and oversight authorities: ensure regular notification of the CITES Management Authority of the detected instances of illegal trade in CITES specimens;
- **3.** Federal Service for Oversight of Natural Resource Management of Russia: set up expert groups for identification of species in the detected cases of illegal wildlife trade and to develop a system of remote consultations by experts of the competent authorities;
- 4. Federal Security Service of Russia, Ministry of Internal Affairs of Russia, Federal Customs Service of Russia: set up interagency (regional, interregional) operational teams comprising officials of the law enforcement agencies that have the mandate to combat trafficking in CITES specimens with the aim of detecting large smuggling channels, monitoring and controlling objects of mutual operational interest and providing effective responses to smuggling actions;

¹³² In line with CITES Resolution Conf. 13.7 (https://www.cites.org/eng/res/13/13-07.php) and Resolution Conf. 5.10 (https://cites.org/eng/res/05/05-10R15.php).
5. Federal Service for Oversight of Natural Resource Management of Russia, Federal Customs Service of Russia: develop and implement a system of operational information exchange on the issued CITES specimen import and export permits between the CITES Management Authority, CITES Scientific Authorities and Federal Customs Service of Russia.

International cooperation

- 1. Establish at EACU level a permanent online system of up-to-date information exchange (regarding the issued, redeemed and annulled permits for the export and import of CITES specimens, their interdictions and seizures, as well as planned illegal movements) between the interested government agencies including CITES Management Authorities and customs. Administration and operational support of the system could be delegated to a relevant unit within the Eurasian Economic Commission. Set up an intergovernmental team of experts on combating illegal trade in CITES specimens to ensure competent analysis of the information obtained through this system.
- 2. Establish a mechanism of electronic exchange of CITES certificates between the CITES Management Authorities of the EACU member-states and the CITES Management Authorities of other states in order to supervise import and export of CITES specimens as and when they are declared at customs.
- 3. Develop and approve the wildlife trade regulation (including CITES specimens) in the EACU and establish bodies at EACU level to ensure control over wildlife trade within the EACU, as well as import into the EAEU and export of wildlife from the EACU.
- 4. Conduct regular meetings of customs, law enforcement and environmental protection authorities of the neighboring countries to develop practical steps towards increasing the effectiveness of CITES implementation.
- 5. Set up an international taskforce on combating the smuggling of CITES specimens that could comprise field customs officials (staff of the divisions of especially dangerous smuggling, operational investigations, cooperation with foreign law enforcement authorities) and the CITES Management Authorities.

6. Develop and implement a reliable system of protection of export and import permits and reexport certificates issued by the CITES Management Authorities of the EACU member.

Capacity building of the Federal Customs Service of Russia

- 1. Develop and deploy software for the identification of CITES specimens and other wildlife moved across the customs border of the EACU and for carrying out the required steps upon detecting the incidents of actual or attempted illegal movement of wildlife across the EACU customs border.
- 2. Limit the number of EACU customs checkpoints cleared to process exports of wild animals, their parts and derivatives using as a reference the existing list of checkpoints cleared to process imports, while providing the necessary equipment, supplies and expertise for animal species identification as well as the conditions for temporary sheltering of the seized animals.
- 3. Develop and implement specialized additional professional programs within the system of continuing professional education of customs officials aimed at improving the effectiveness of:
 - operational investigations in detecting smuggling channels for exports of wild animals, their parts and derivatives;
 - customs operations and organization of customs control regarding wildlife moved across the EACU customs border.
- 4. Develop measures to improve the effectiveness of various customs control techniques within the risk management system, including non-formalized risk profiling whereby risk is rated by a customs officer directly on site based on a risk class and without the use of special software.
- 5. Organize the training of dog handlers for training service dogs to find wildlife in all regional directorates of the Federal Customs Service using the relevant experience of dog handlers at the Far Eastern Customs Directorate.

Sheltering of seized and confiscated live wild animals

1. Develop and approve, in accordance with the current legislation, a list of organizations that can be granted the status of shelters for seized and confiscated live wild animals. Develop a procedure of transfer of live wild animals for temporary shelter, including the issues of its funding (feeding, veterinary service, transportation, etc.).

Online trade in wildlife

- 1. Online resources are recommended to:
 - develop wildlife trade information policies to raise the awareness of users about the existing restrictions on such trade;
 - develop procedures disallowing the publication of sales ads about animal species banned from trade;
 - develop procedures, as applicable, for the verification of documents on animals and wildlife products being offered for sale;
 - join the Global Coalition to End Wildlife Trafficking Online.
- 2. Oversight and control authorities are recommended to organize continuous monitoring of online resources for the detection of sales ads about animal species banned from trade.
- 3. Competent authorities and interested parties are recommended to convene a meeting of the competent authorities, online resources and NGOs on the issues of prevention of illegal trade in wildlife on the Internet.

Judicial practice

- 1. Analyze the legal practice regarding criminal cases on illegal trade in high value species (Article 258.1 of the Criminal Code of the Russian Federation).
- 2. Raise the awareness of courts and the environmental prosecutor's office (primarily in the regions) about the extent of the problem of the illegal trade in CITES specimens, about judicial precedents for imposing adequate sentences in accordance with the nature, degree of public danger of the crimes, the circumstances of their commission and the identities of the perpetrators.
- 3. Ensure the involvement of experts and state environmental protection officials, including the officials of the Federal Service for Oversight of Natural Resource Management of Russia, in the investigations of violations concerning trade in CITES specimens.

Specific recommendations related to certain species or group of species

Reptiles

An effective mechanism is needed to ensure the return of illegally imported Central Asian tortoises to their natural habitats. This would require improving the regulatory framework and its implementation practice and strengthening cooperation with the immigration and customs authorities of Kazakhstan and Uzbekistan, as well as with the academic community.

Birds of prey

A comprehensive approach and system-wide measures are required to reduce the impact of trade in birds of prey on their populations in Russia:

- Ratify the Convention on the Conservation of Migratory Species of Wild Animals (the Bonn Convention), so that the decisions taken within its framework could apply to Russia, in particular, Global Actions Plans on rare birds of prey developed under the Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia (Raptors MoU).
- Develop a saker falcon conservation strategy and get it approved by the Ministry of Natural Resources and Environment of the Russian Federation.
- Establish a unified database of captive-bred falcons, accessible to police and customs officials, that would keep records of falcon trade transactions including immovable bands and other marks.
- Reduce mortality of the seized birds Institute a system of governmental and public oversight over the fate of the seized live birds (including the development of subnational-level procedures of response to any incidents of trade in birds of prey).

Terrestrial mammals

Wild reindeer (Taymyr population)

It is deemed necessary to enhance the monitoring of removals and the sex/ age structure of removed animal stocks and trade in wild reindeer parts and derivatives as well as enforcing the ban on antler cutting during water crossing.

Musk deer

Musk deer is one of the species that are most vulnerable to trade impact; therefore, it is deemed necessary to:

- Enhance the oversight of musk deer harvest and use of musk deer removal permits to comply with CITES requirements regarding the legal origin of CITES specimens.
- Develop regulatory interventions to counteract legalization of the products of poaching; design systems of voluntary non-involvement in trade the products of poaching to ensure transparency of supply chains (with respect to voluntarily adopted restrictions, such a system is similar to a system needed in the market of wild medicinal and aromatic herbs, and they could be designed jointly).
- Develop measures to provide alternative employment opportunities for musk deer hunters.
- Undertake an in-depth study to examine the domestic market of musk deer derivatives with a focus on musk using market intelligence tools to assess this market growth potential and analyse its structure (key actors and routes of arrival of unprocessed products in the market).
- Conduct a public awareness campaign targeting tourists in the region and those who buy oriental medicines country-wide (to prevent purchases of illegal products).
- Take measures to prevent illegal export of musk to China (it may be effective if the focus is on interruption of supply chains at the stage following concentration of export batches with an emphasis on Irkutsk and Krasnoyarsk that apparently serve as the hubs of accumulation of goods for export batches).

Marine mammals

Due to the fact that TACs of marine mammals are determined without due regard to the provisions of the legislation in the field of environment protection and fisheries and the conservation of aquatic biological resources; up-to-date information on the status of marine mammal populations is not available, violations of the rules for catching marine mammals are detected, it is recommended to implement the following recommendations:

- Update the regulatory framework of the conservation and use of marine mammals, including trade in marine mammals.
- Update the list of marine mammals.

- Harmonize the rules of use and conservation of marine mammals with the recommendations of the International Whaling Commission and IUCN.
- Prevent the trade in marine mammals removed from the wild for "control and research" or "educational and cultural-educational" purposes.
- Ensure a regular¹³³ assessment of the status of a demographic unit of marine mammals (population, stock, herd, etc.), i.e. a full population account using up-to-date techniques, assessment of health, annual growth, natural and human-induced threats.
- Initiate an NDF assessment for such international traded marine mammals as beluga whale, killer whale.
- Ensure that TAC materials are based on comprehensive assessment of biological features of marine mammals (population structures, group area boundaries, etc) and comply with the legislation in the field of environment protection and fisheries and the conservation of aquatic biological resources.

¹³³ The required regularity of assessments of the status of marine mammal demographic units needs to be determined by specialists.

Table 47. Expert assessment of exports and imports of meaningfully traded species of insects and European medicinal leech in the Russian Federation in 2011–2018

(Rele of th an	evar oroi alys	nce ugh is	Ŋ	-	-	-	ო	ę	2	2	2	-	2	2
		olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I	T
	ort	Illegal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I	I	I
	dml	olume	Prices (USD)	I	I	I	I	10-110	I	5	N/A	5	10	10	N/A
olvement		Legal trade v	Number of individuals	I	I	I	I	100-200	I	10-100	N/A	100-500	50-100	100–300	N/A
Species inv		olume	Prices (USD)	1,30	I	I	N/A	10-100	I	10	25	10	N/A	25	20
	ort	Illegal trade v	Number of individuals	3,000,000 (illegal removal from the wild and domestic trade)	I	I	N/A	200-1,000	I	50-500	100–300	50-300	N/A	150–300	300–500
	Exp	olume	Prices (USD)	2-5	5	N/A	I	I	5	I	I	I	I	I	I
		Legal trade ve	Number of individuals	500,000	300-500	N/A	I	I	200-1,000	I	I	I	I	I	I
	C App	ITES	S dix	=	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Common name,	Latin name of species,	supspecies, aroup of species		European medicinal leech (Hirudo medicinalis)	Dytiscus latissimus	Cephalota atrata	Carabus gebleri	Carabus caucasicus	Carabus tauricus	Carabus avinovi	Carabus lopatin	Carabus constricticollis	Carabus rugipennis	Carabus jankowskii	Carabus constantinovi

Table 47 Continued (1).

c	Rele of the ana	evan orou alys	ice Jgh is	٢	٢	٢	٢	-	٢	-	٢	З	٢	-	٢	1	-	-
		olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	bort	Illegal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	m	olume	Prices (USD)	I	I	I	55	I	I	55	I	5	I	I	I	I	I	I
volvement		Legal trade v	Number of individuals	I	I	I	10-100	I	I	10-100	I	10–300	I	I	I	I	I	I
Species in		olume	Prices (USD)	I	I	N/A	I	N/A	N/A	N/A	N/A	5	I	I	I	I	I	I
	ort	Illegal trade v	Number of individuals	I	I	N/A	N/A	N/A	N/A	N/A	N/A	10–300	I	I	I	I	I	I
	Exp	olume	Prices (USD)	N/A	N/A	I	I	I	I	I	I	I	N/A	N/A	N/A	N/A	N/A	N/A
		Legal trade v	Number of individuals	N/A	N/A	I	I	I	I	I	I	I	N/A	N/A	N/A	N/A	N/A	N/A
	CI App	TES	; lix	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Common name,	Latin name of species,	aroup of species		Carabus riedeli	Carabus kaljuzhnyji	Carabus bessarabicus	Carabus hungaricus	Carabus menetriesi	Carabus miroshnikovi	Callisthenes reticulatum	Calosoma maximowitzi	Forest caterpillar hunter (Calosoma sycophanta)	Leistus spinibarbis	Caucasophaenops molchanovi	Caucasorites shchurovi	Meganophthalmus irinae	Tauricimmerites dublanskii	Deltomerus sergeii

C	Rele of th ana	evan orou alys	ice Jgh is	-	4	-	2	-	1	1	1	1	-	4	-	2	2
		olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I	I	T	I
	ort	Illegal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I	I	1	I	I
	dml	olume	Prices (USD)	I	I	I	58	I	I	I	I	I	I	5-55	I	N/A	N/A
/olvement		Legal trade vo	Number of individuals	I	I	I	50-200	I	I	I	I	I	I	50–300	I	N/A	N/A
Species inv		olume	Prices (USD)	I	I	I	N/A	I	I	I	I	I	I	N/A	I	55	55
	ort	Illegal trade v	Number of individuals	I	I	I	N/A	I	I	I	I	I	I	N/A (large scale removal from the wild)	1	10–200	10–200
	Exp	olume	Prices (USD)	N/A	N/A	N/A	I	N/A	N/A	N/A	N/A	N/A	N/A	I	N/A	I	I
		Legal trade v	Number of individuals	N/A	N/A	N/A	I	N/A	N/A	N/A	N/A	N/A	N/A	I	N/A	I	I
	Ci App	TES	5 lix	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Common name,	Latin name of species,	subspecies, aroup of species		Deltomerus defanus	Sphodrus leucophthalmus	Harpalus petri	Calais parreysii	Rusty click beetle (Elater ferrugineus)	Dicerca amphibia	Dicerca moesta	Eurythyrea quercus	Ceruchus lignarius	Ceruchus chrysomelinus	Lucanus cervus	Spring dor beetle (Trypocopris vernalis)	Osmoderma barnabita	Osmoderma davidis

Table 47 Continued (2).

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Table 4

c	Rele of th ana	evan orou alys	ice Jgh is	2	2	2	2	2	-	-	-	4	-	-	-	2	2	2
		olume	Prices (USD)	I	I	I	T	I	I	I	I	I	I	I	I	I	I	I
	bort	Illegal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	m	olume	Prices (USD)	I	I	I	I	I	I	I	I	110–220	20	I	I	10–20	20–30	I
/olvement		Legal trade v	Number of individuals	I	I	I	I	I	I	I	I	10–200	10–100	I	I	10–200	50-200	I
Species inv		olume	Prices (USD)	I	I	N/A	5	I	I	I	I	110–330	20	N/A	N/A	N/A	30–50	I
	ort	Illegal trade v	Number of individuals	I	I	N/A	100–300	I	N/A	N/A	N/A	100–1,000	10-100	N/A	N/A	N/A	10-100	I
	Exp	olume	Prices (USD)	N/A	5	I	I	N/A	I	I	I	I	I	I	I	I	I	N/A
		Legal trade v	Number of individuals	N/A	100–300	I	I	N/A	I	I	I	I	I	I	I	I	I	N/A
	CI App	ITES benc	5 lix	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Common name,	Latin name of species,	subspecies, aroup of species		Osmoderma caelestis	Noble chafer (Gnorimus nobilis)	Protaetia speciosissima	Protaetia speciose	Protaetia fieberi	Aphodius Bimaculatus	Melandrya barbata	Pytho kolwensis	Callipogon relictus	Rhaesus serricollis	Xylosteus caucasicola	Cerambyx nodulous	Rosalia longicorn (Rosalia alpina)	Rosalia coelestis	Dorcadion mokrzeckii

,	Rele of th ana	evar oroi alys	ice ugh is	-	-	1	1	-	4	-	~	1	+	1	2	2	2
		olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	ort	Illegal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	dml	olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I	I	I	I
olvement		Legal trade vo	Number of individuals	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Species inv		olume	Prices (USD)	I	N/A	N/A	N/A	I	I	N/A	N/A	N/A	N/A	N/A	10	10–20	10
	ort	Illegal trade v	Number of individuals	I	N/A	N/A	N/A	I	I	N/A	N/A	N/A	N/A	N/A	50-100	50-200	50-100
	Exp	olume	Prices (USD)	N/A	I	I	I	N/A	N/A	I	I	I	I	I	I	I	I
		Legal trade v	Number of individuals	N/A	I	I	I	N/A	N/A	I	I	I	I	I	I	I	I
	CI App	TES benc	S lix	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Common name,	Latin name of species,	subspecies, aroup of species		Cecchiniola platyscelidina	Chrysolina urjanchaica	Otiorhynchus rugosus	Brachycerus sinuatus	Knapweed root weevil (Cyphocleonus achates)	Adosomus roridus	Eusomostrophus acuminatus	Stephanocleonus tetragrammus	Omias verruca	Parnopes grandior	Xylocopa valga	Catocala kotshubeji	Catocala moltrechti	Catocala nagioides

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Table

C	Rele of th ana	evan orou alys	ice Jgh is	1	٢	1	-	٢	٢	٢	-	-	٢	-	٢	٢	~
		olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	bort	Illegal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	m	olume	Prices (USD)	8	I	I	I	I	I	I	58	I	I	I	I	I	ę
/olvement		Legal trade v	Number of individuals	50-200	I	I	I	I	I	I	10–100	I	I	I	I	I	100–250
Species inv		olume	Prices (USD)	10	N/A	I	10	I	I	20–55	5-10	I	I	N/A	N/A	N/A	5-10
	ort	Illegal trade v	Number of individuals	10–100	N/A	I	10–50	I	I	50-100	50-200	I	I	N/A	N/A	N/A	10–20
	Exp	olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I	I	I	I
		Legal trade vo	Number of individuals	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	C App	TES	; lix	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Common name,	Latin name of species,	suppecies, aroup of species		Ramie moth (Arcte coerula)	Asteropetes noctuina	Wild silkmoth (Bombyx mandarina)	Numenes disparilis	Parocneria furva	Rosama ornate	Sphecodina caudate	Wavy velvet hawkmoth (Clanis undulosa)	Mimeusemia persimilis	Camptoloma interiorata	Centrarctia mongolica	Phragmatobia placida	Bibasis aquiline	Chinese windmill (Atrophaneura alcinous)

¢	Rele of th ana	evar oroi alys	ice Jgh is	-	-	-	-	~	-	-	-	-	-	٢	~
		olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I	I
	ort	Illegal trade v	Number of individuals	1	I	I	I	I	I	I	I	1	I	I	I
	dml	olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I	I
olvement		Legal trade vo	Number of individuals	1	I	I	I	I	I	1	I	I	I	I	I
Species inv		olume	Prices (USD)	I	I	I	I	I	I	3–7	I	I	I	I	I
	ort	Illegal trade vo	Number of individuals	1	I	I	I	I	I	100–300 (mostly pupae)	I	I	I	I	I
	Exp	lume	Prices (USD)	6-10	N/A	5-10	25	N/A	3–7	I	3–5	25	7–15	10–20	3-10
		Legal trade vo	Number of individuals	50-100	N/A	20-40	50-200	N/A	100–300 (mostly pupae)	I	Up to 300 pupae	100–300 live specimens, up to 500 pupae	50-200	50-100	100-300
	C App	ITES benc	6 lix	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Common name,	Latin name of species,	subspecies, aroup of species		Common yellow swallowtail (Papilio machaon)	Sinoprinceps xuthus	Achillides bianor	Achillides maackii	Scarce swallowtail (Iphiclides podalirius)	Luehdorfia puziloi	Dragon swallowtail (Sericinus montela)	Allancastria Caucasica	Southern festoon (Zerynthia Polyxena)	Parnassius Bremeri	Parnassius Amgunensis	Phoebus Apollo

Table 47 Continued (7).

¢	Rele of th ana	evan orou alys	ice Jgh is	۲	с	٢	-	-	-	-	-	-	5	٢	с	۲	2
		olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	ort	Illegal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I	I	I	I	I
	d ml	olume	Prices (USD)	55-110	20-110	5-10	1–2	5-10	I	I	I	I	I	I	I	I	I
volvement		Legal trade v	Number of individuals	50-100	50-200	50-100	20–50	10-100	I	I	I	I	1	I	I	I	I
Species inv		olume	Prices (USD)	I	7–25	5–10	I	I	I	I	I	10–25	I	I	20	I	I
	ort	Illegal trade v	Number of individuals	I	50-200	50-100	I	I	I	I	I	50-200	I	I	50-150	I	I
	Exp	olume	Prices (USD)	5-10	I	I	2–5	3–8	5-10	7–15	7–20	I	220-660	15–30	I	N/A	15
		Legal trade v	Number of individuals	50-100	I	I	50-100	20–50	50-100	50-200	50-500	I	Up to 10 (in 2015 approximately 100 specimens)	50-70	I	N/A	10–50
	C App	TES	5 lix	NC	=	NC	S	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Common name,	Latin name of species,	subspecies, aroup of species		Nomion Apollo (Parnassius nomion)	Mountain Apollo (Parnassius apollo)	Clouded Apollo (Driopa mnemosyne)	Driopa Stubbendorfi	Driopa Glacialis	Driopa Hoenei	Driopa nordmanni	Driopa eversmanni	Driopa felderi	Sachaia ammosovi	Sachaia tenedius	Coreana raphaelis	Protantigius superans	Goldia pacifica

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Prices (USD)	Prices Nu (USD) - - - - - - - - - 10-20 - - -
	1 1 1 1 1 1 1 1 1 1 1 1
	50 10-20 10-20 10-20
1 1 1	
- 10 - 1	
5-10	5-10 15-30
50-200	50-200 50-200 5 5-50 5 5 5 1 N/A
- N/M	- N/A N/A N/A N/A
· Z	
. 2	- N/A N/A N/A
	NC N/A NC N/A NC N/A NC
	N/A - - - - - - - - - - 10-50 1 - 5-50 55-110 10-50 1

Notes Relevance of thorough analysis: 1 – low, 4–5 – high. Legend: "NA" – species is traded, but data on trade volume is not available; "-" species is not traded or could be traded very rarely; "NC" – non-CITES listed species.

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¢	Rele of th ana	evan oroi alys	ice Jgh is		£	ę	ę	-	5	2	4	5	з	5	2	~
		olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I	I	Т
	ort	Illegal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I	I	I	I
	dml	olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I	I	I
olvement		Legal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I	I	I	I
Species inv		olume	Prices (USD)	3	30-60	20–30	20–30	30–45	125–155	75–95	310	310	60–80	80–95	80–95	75-125
	ort	Illegal trade v	Number of individuals	2 000	>700	>700	N/A	>700	70–140	700–1,050	70–140	70–140	140–210	210–350	140–210	~7,000
	Exp	olume	Prices (USD)	N/A	I	I	I	I	I	I	I	I	I	I	I	I
		Legal trade v	Number of individuals	N/A	I	I	I	I	I	I	I	I	I	I	I	I
	C App	ITES Denc	5 lix	NC	=	=	NC	NC	NC	NC	S	NC	NC	=	=	NC
Common name,	Latin name of species,	subspecies, aroup of species		Dybowski's frog (<i>Rana dybowskii</i>)	Greek tortoise (Testudo graeca spp.)	Amur softshell turtle (Pelodiscus maackii)	European pond turtle (<i>Emys orbicularis</i>)	Pallas's glass lizard (Pseudopus apodus)	Leopard snake (Zameinis situla)	Macroviera lebetina obtusa	Pelias dinnicki	Pelias kaznakovi	Pelias renardi	Eryx miliaris nogaiorum	Javelin sand boa (<i>Eryx jaculu</i> s)	Elaphe schrenckii

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Table

Common name,					Species in	volvement				
n name of species,	Ci App		Exp	ort			벨	oort		Rele of th ana
supspecies, roup of species	ITES	Legal trade v	olume	Illegal trade v	olume	Legal trade vo	olume	Illegal trade vo	olume	evan oroi alys
	S dix	Number of individuals	Prices (USD)	Number of individuals	Prices (USD)	Number of individuals	Prices (USD)	Number of individuals	Prices (USD)	ice ugh is
tral Asian tortoise studo horsfieldii)	=	I	I	I	I	5,019	40–55	100,000–350,000	15	S
e toa (Bufo marinus)	NC	I	I	I	I	~ 700	8-15	N/A	N/A	-
an common toad fo melanostictus)	NC	1	I	I	I	~ 350	8–15	N/A	N/A	۲
te-lipped tree frog oria infrafrenata)	NC	1	I	I	I	~ 350	15–25	N/A	N/A	۲
den mantella ntella aurantiaca)	=	1	I	I	I	151	45–60	N/A	N/A	1
on's mantella ntella baroni)	=	I	I	I	I	190	45–60	N/A	N/A	1
ıtella tagascariensis ntella tagascariensis)	=	I	I	I	I	40	45-60	N/A	N/A	-
utiful mantella ntella pulchra)	=	I	I	I	I	66	45–60	N/A	N/A	1
ing dart frog ndrobates tinctorius)	NC	I	I	I	I	142	N/A	N/A	N/A	1
culated poison (<i>Ranitomeya</i> <i>trimaculata</i>)	NC	I	1	I	I	20	N/A	N/A	N/A	1
phis luteus	NC	I	I	T	Т	70–140	1525	N/A	N/A	1
phis rappiodes	NC	I	I	T	I	70–140	1525	N/A	N/A	-

Table 48 Continued (2).

ا م	Rele of th ana	evan oroi alys	ice Jgh is	-	-	1	1	1	3	1	1	-	ŝ	3
		olume	Prices (USD)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	ort	Illegal trade v	Number of individuals	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	gml	olume	Prices (USD)	15–25	55–155	54-125	80–125	125 – 155	06-09	125-155	95–125	125–155	55–110	55-115
volvement		Legal trade v	Number of individuals	70–140	474	2,082	490–1,050	70–105	70	70-105	100–200	215	170–210	210–350
Species in		olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I
	ort	Illegal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I	I
	Exp	olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I
		Legal trade v	Number of individuals	I	I	I	I	1	I	I	I	I	I	I
	CI App	TES	5 lix	NC	=	=	NC	NC	NC	NC	=	=	NC	NC
Common name,	Latin name of species,	subspecies, aroup of species		Rough green snake (Opheodrys aestivus)	Reticulated python (Python reticulatus)	Ball python (Python regius)	Boiga flavescens	Mangrove snake (Boiga dendrophila dendrophila)	Langaha madagascariensis	Chelodina siebenrockie	Common snapping turtle (Chelydra serpentina)	Alligator snapping turtle (Macrochelys temminckii)	Chinese water dragon (Physignathus concincinus)	Reeves' butterfly lizard (Leiolepis reevesii)

Table 48 Continued (3).

nmon name,					Species inv	volvement				(
of species,	CI App		Exp	ort			dml	ort		Rele of th ana
cies, becies	TES	Legal trade v	olume	Illegal trade v	olume	Legal trade vo	olume	Illegal trade v	olume	evan oroi alys
	5 lix	Number of individuals	Prices (USD)	ice .igh is						
s kuhli)	NC	I	I	I	I	210–350	15–30	N/A	N/A	-
) victa)	NC	I	I	I	I	140–210	15–25	N/A	N/A	-
il gecko neatus)	=	I	I	I	I	50	95–155	5-6	N/A	ę
meiti	=	I	I	I	I	91	95-155	5-6	N/A	з
tailed gecko ikorae)	=	I	I	I	I	175	95–155	10	N/A	с
-tailed <i>latus</i> :)	=	I	I	I	I	116	95–155	3-4	N/A	ε
andis	=	I	I	I	I	55	45-60	N/A	N/A	-
iensis	=	I	I	I	I	87	45–60.	N/A	N/A	1
/ gecko ta)	=	I	I	I	I	165	45-60	A/A	N/A	2
ty gecko aticauda)	=	I	I	I	I	105	45–60	N/A	N/A	2
lus s	NC	I	I	I	I	70–105	45–60	N/A	N/A	-
lus boivini	NC	I	I	I	I	70–105	45-60	N/A	N/A	٢

Table 48 Continued (4).

c	Rele of the ana	evan orou alys	ice Jgh is	~	1	4	-	1	-	-	3	ę	ς	ი
		olume	Prices (USD)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	ort	Illegal trade v	Number of individuals	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23
	<u>d</u>	olume	Prices (USD)	45–60	45-60	30-45	30–45	30-45	30–45	30–45	125–155	125–155	155–235	125–155
volvement		Legal trade v	Number of individuals	70	70	105–140	105–140	105–140	105–140	105–140	70	44	60	172
Species in		olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I
	ort	Illegal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I	I
	Exp	olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I	I
		Legal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I	I
	CI App	TES	5 lix	NC	NC	NC	NC	NC	NC	NC	NC	=	=	=
Common name,	Latin name of species,	subspecies, aroup of species		Zonosaurus haraldmeieri	Zonosaurus ornatus	Peters' keeled plated lizard (<i>Tracheloptychus</i> <i>petersi</i>)	Chalarodon madagascariensis	Oplurus grandidieri	Madagascar swift (Oplurus cyclurus)	Collared iguanid lizard (<i>Oplurus cuvierì</i>)	Amphiglossus reticulatus	Warty chameleon (Furcifer verrucosus)	Malagasy giant chameleon (<i>Furcifer oustaleti</i>)	Carpet chameleon (Chamaeleo (Furcifer) lateralis)

Common name,					Species in	volvement				(
ame of species,	CI App		Exp	bort			dml	ort		Rele of th ana
inspecies, in of species	TES	Legal trade ve	olume	Illegal trade v	olume	Legal trade v	olume	Illegal trade v	olume	evan orou alys
	5 lix	Number of individuals	Prices (USD)	Number of individuals	Prices (USD)	Number of individuals	Prices (USD)	Number of individuals	Prices (USD)	ice ugh is
eaf chameleon sia superciliaris)	=	I	I	I	I	30	45-60	2–3	N/A	ę
iorned eon ma nasutum)	=	I	I	I	I	44	155–235	N/A	N/A	с
t chameleon ma gastrotaenia)	=	I	I	I	I	24	155–235	N/A	N/A	ę
r chameleon er pardalis)	=	I	I	I	I	204	155–235	2–3		с
gecko gecko)	NC	I	I	I	I	>3,500	15–25	N/A	N/A	3
gecko vittatus)	NC	I	I	I	I	350-700	15	N/A	N/A	-
on house gecko actylus frenatus)	NC	I	I	I	I	1,400–2,100	4	N/A	N/A	-
anole equestris)	NC	I	I	I	I	350-700	45–60	N/A	N/A	-
nosed leopard elia wislizenii)	NC	I	I	I	I	70–140	4560	N/A	N/A	-
ded skink /lepis perrotetii)	NC	I	I	I	I	140–210	25–30	N/A	N/A	-
dian brown a vis multifasciata)	NC	I	I	I	I	140–210	25–30	N/A	N/A	-

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C	Rele of the ana	evan orou alys	ice ugh is	-	б	ę	1	~	-	-	2	2	2
		olume	Prices (USD)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	ort	Illegal trade v	Number of individuals	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	dml	olume	Prices (USD)	45–60	110–155	110–155	110–155	45-60	7	110–155	155–235	155–235	390–470
volvement		Legal trade v	Number of individuals	70–105	70–105	70–105	70–105	140–210	350-700	140–210	266	40	11
Species in		olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I
	ort	Illegal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I
	Exp	olume	Prices (USD)	I	I	I	I	I	I	I	I	I	I
		Legal trade v	Number of individuals	I	I	I	I	I	I	I	I	I	I
	CI App	TES	5 lix	NC	NC	NC	NC	NC	NC	NC	=	=	=
Common name,	Latin name of species,	subspecies, aroup of species		Fire skink (Mochlus fernandi)	Indonesian blue– tongued skink (<i>Tiliqua gigas</i>)	Common blue-tongued skink (<i>Tiliqua scincoides ssp</i>)	Frilled–necked lizard (Chlamydosaurus kingii)	Red-eyed crocodile skink (<i>Tribolonotus gracilis</i>)	Tachydromus sexlineatus	Chameleon anglehead lizard (Gonocephalus chamaeleontinus)	Asian water monitor (Varanus salvator)	Black roughneck monitor lizard (Varanus rudicollis)	Black tree monitor (Varanus beccarii)

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Table

Common name,					Species inv	/olvement				(
Latin name of species,	C App		Exp	ort			dml	ort		Rele of th ana
suppecies, aroup of species	ITES	Legal trade vo	plume	Illegal trade v	olume	Legal trade v	olume	Illegal trade v	olume	evan oroi alys
	6 lix	Number of individuals	Prices (USD)	Number of individuals	Prices (USD)	Number of individuals	Prices (USD)	Number of individuals	Prices (USD)	ice Jgh is
Mangrove monitor (Varanus indicus)	=	1	I	I	I	0	155–235	N/A	N/A	2
Desert monitor (Varanus griseus griseus)	=	I	1	I	I	0	80-95	N/A	N/A	2
Blue-tailed monitor (Varanus doreanus)	=	1	I	I	I	32	310	N/A	N/A	2
Vile monitor (Varanus niloticus)	=	1	I	I	I	190	110–155	N/A	N/A	2
Egyptian dabb lizard (Uromastix aegiptia)	NC	1	I	I	I	700	75–110	N/A	N/A	3
Uromastix ornata	NC	I	I	I	I	700-1,400	75-110	N/A	N/A	З
Uromastix thomasi	=	I	I	I	I	70–140	390-470	N/A	N/A	с
Solomon Islands skink (Corucia zebrata)	NC	I	I	I	I	Up to 350	470–785	N/A	N/A	З
Vorthern caiman lizard (Dracaena guianensis)	NC	I	I	I	I	Up to 350	470–785	N/A	N/A	1
Chinese crocodile lizard (Shinisaurus) crocodilurus)	_	I	1	I	I	Up to 140	235–390	N/A	N/A	4

Notes Relevance of thorough analysis: 1 – low, 4–5 – high. Legend: "NA" – species is traded, but data on trade volume is not available; "-" species is not traded or could be traded very rarely; "NC" – non-CITES listed species.

Table 49. Expert assessment of exports and imports of meaningfully traded species of birds in the Russian Federation in 2012–2016

c	Rele of th ana	evan orou alys	ice ugh is	5	5	5	-	2	1	-	1	-	-
		olume	Prices (USD)	I	I	I	I	T	T	I	N/A	N/A	N/A
	ort	Illegal trade v	Number of individuals	I	I	I	I	I	I	I	N/A	50 – 300	50 - 300
	d ml	olume	Prices (USD)	N/A	N/A	N/A	I	I	I	N/A	N/A	N/A	N/A
/olvement		Legal trade v	Number of individuals	47	2	39	I	I	I	N/A	100 – 500	N/A	N/A
Species in		olume	Prices (USD)	2,000– 20,000	500- 10,000	2,000– 45,000	I	1,000– 10,000	500 – 3,000	N/A	I	N/A	I
	ort	Illegal trade v	Number of individuals	2,000 – 2,500	300 – 500	1,500 – 2 000	I	100 – 500	5 – 10	5 – 10	I	N/A	I
	Exp	olume	Prices (USD)	> 500 - 1,500	< 500 – 1,500	500 – 1,500	100 – 1,000	1,000 – 10,000	I	I	I	I	I
		Legal trade v	Number of individuals	ო	121	1,462	148	N/A	I	I	I	I	I
	CI App	TES	S dix	-	_	_	=	=	=	=	=	=	=
Common name,	Latin name of species,	subspecies, aroup of species		Gyrfalcon (Falco rusticolus)	Peregrine falcon (Falco peregrinus F. p. callidus)	Saker falcon (Falco cherrug)	Northern goshawk (Accipiter gentilis gentilis A. g. buteoides)	Northern goshawk (A. g. Albidus)	Golden eagle (Auila chrysaetos)	Eurasian eagle-owl (Bubo bubo)	Western barn owl (<i>Tyto alba</i>)	Eurasian scops owl (Otus scops)	Little owl (<i>Athene noctua</i>)

Notes

Relevance of thorough analysis: 1 – low, 4–5 – high. Legend: "N/A" – species is traded, but data on trade volume is not available; "–" species is not traded or could be traded very rarely.

Table 50. Expert assessment of exports and imports of meaningfully traded species of mammals in the Russian Federation in 2012-2018

Relevance of thorough analysis		5	ი	4	2	2	2	2	45	с		
		olume	Prices (USD)	I	N/A	N/A	I	I	I	I	N/A	0
	bort	Illegal trade v	Number of individuals	I	N/A	N/A	I	I	I	I	N/A	0
	olvement	olume	Prices (USD)	I	200	20-85	I	I	I	I	N/A	N/A
olvement		Legal trade v	Number of individuals	I	13236^{2}	1 222	I	I	I	I	021<	£
Species inv		olume	Prices (USD)	N/A	ı	N/A	N/A	N/A	N/A			
	Export	Illegal trade v	Number of individuals	N/A ¹	I	N/A	2,429 pc.	100 pc.	N/A	680 pc.	No less than 388 individuals	
		volume	Prices (USD)	115	200	N/A ³	40,8– 124,16	1,03–7,43	2,3–23,2	N/A	See Table 2, Section "Trade in terrestrial mammals"	N/A
		Legal trade v	Number of individuals	2,637,000– 3,000,000	186	123	N/A	N/A	N/A	N/A	>5,100	24
	CI App	ITES Denc	S dix	NC	=	=	NC	NC	NC	NC	=	-
Common name, Latin name of species, subspecies, group of species		Sable (Martens zibellina)	Lynx (L <i>ynx lynx</i>)	Wolf (Canis lupus)	Marten (Martes martes)	Squirrel (Sciurus vulgaris)	Stoat (Mustela erminea)	Muskrat (Ondatra zibethicus)	Brown bear (Ursus arctos)	Asiatic black bear (Ursus thibetanus)		

It is challenging to distinguish pelts harvested in compliance with the established quota from those harvested without permits.

² Only specimens equivalent to one individual each were taken into account. Such specimens as "garments", etc. were not taken into account.

³ Trophies are mostly exported, prices are not defined.

Table 50 Continued (1).

c	Rele of th ana	evan orou alysi	ice Igh is	5	5	3	2	2	2	ю	2	£	с
		olume	Prices (USD)	0	I	I	I	I	I	I	I	1	I
	port	Illegal trade v	Number of individuals	0	1	1	I	I	I	I	I	I	I
	Ē	olume	Prices (USD)	N/A	I	I	I	I	I	I	I	I	I
olvement		Legal trade v	Number of individuals	-	I	I	I	I	I	I	I	1	I
Species inv		olume	Prices (USD)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	833\$ for the horn	N/A
	pr	Illegal trade v	Number of individuals	7 291	N/A	N/A	200 seized antlers	N/A	N/A	N/A	N/A	3,752 seized horns are equivalent to 1,876 males	N/A
	Exp	olume	Prices (USD)	500 (musk gland)	35–48 \$/kg (antlers)	11–16 \$/kg (antlers)	N/A	N/A	N/A	11–16 \$/kg (antlers)	N/A	N/A	N/A
		Legal trade v	Number of individuals	26,500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ო	N/A
	Cl App	TES	; lix	=	NC	NC	NC	NC	NC	NC	NC	=	NC
Common name,	Latin name of species,	aroup of species		Siberian musk deer (Moschus moschiferus)	Reindeer (Rangifer tarandus)	Red deer (Cervus elaphus)	Sika deer (Cervus nippon)	European roe deer (Capreolus capreolus)	Siberian roe deer (Capreolus pygargus)	Moose (Alces alces)	Fallow deer (Dama dama)	Saiga (Saiga tatarica)	Bighorn (Ovis nivicola)

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Table

Common name,					Species inv	olvement				(
Latin name of species,	C App		Exp	prt			m	ort		Rele of th ana
subspecies, aroup of species	TES	Legal trade v	olume	Illegal trade v	olume	Legal trade v	olume	Illegal trade v	olume	evan orou alys
) lix	Number of individuals	Prices (USD)	Number of individuals	Prices (USD)	Number of individuals	Prices (USD)	Number of individuals	Prices (USD)	ice Jgh is
Siberian ibex (Capra sibirica)	≡	26	N/A	N/A	N/A	I	I	I	I	с
Caucasian tur (Capra caucasica)	=	N/A	N/A	N/A	N/A	41	N/A	N/A	N/A	Э
Caucasian tur (Capra cylindricornis)	NC	N/A	N/A	N/A	N/A	I	I	I	I	
Chamois (Rupicapra rupicapra)	NC	N/A	N/A	N/A	N/A	I	I	I	I	з
Argali (Ovis ammon ammon)	=	NC	I	I	I	I	I	I	I	З
Amur tiger (Panthera tigris altaica)	-	NC	I	No less than 20	N/A	I	I	I	I	3
Marine mammals										
Polar bear (Ursus maritimus) ⁴	=	NC	I	I	I	31	28,000– 49,000 (skin)	N/A	N/A	с С
White whale (Delphinapterus leucas)	=	159–224	120,000	11	N/A	e	75,000	N/A	N/A	5
Killer whale (Orcinus orca)	=	13	6,000,000	N/A	N/A	I	I	I	I	5

⁴ Cases of the trafficking in polar bear skins in Russia are presented in the section «Trade in marine mammals».

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Table	T dore

Relevance of thorough analysis			ice .igh is	7	ო	ო
		olume	Prices (USD)	I	N/A	1
bort		Illegal trade v	Number of individuals	1	N/A	I
	dml	olume	Prices (USD)	1	N/A	1
Species involvement Export		Legal trade v	Number of individuals	I	7	I
		olume	Prices (USD)	I	N/A	See the section "Trade in marine mam.
	ort	Illegal trade v	Number of individuals	0	N/A	The species is traded in the domestic market in the Russian Federation
	Exp	olume	Prices (USD)	N/A	100,000	I
		Legal trade v	Number of individuals	N/A	49–61	1
CITES Appendix			5 lix	=	≡	SN N
Common name, .atin name of species, subspecies, group of species				Black Sea bottlenose dolphin (<i>Tursiops truncatus</i> <i>bonticus</i>)	⊃acific walrus (Odobenus rosmarus divergens)	Caspian seal (Phoca caspica)

Notes Relevance of thorough analysis: 1 – low, 4–5 – high. Legend: "NA" – species is traded, but data on trade volume is not available; "-" species is not traded or could be traded very rarely; "NC" – non-CITES listed species.

REFERENCES

Ananyeva N.B. et al. (2004) Atlas of reptiles of Northern Eurasia (taxonomic diversity, geographical distribution and conservation status). Zool. Institute of Russian Academy of Sciences. St. Petersburg (in Russian).

BirdLife International (2005) Peregrine Falcon *Falco peregrinus*. URL: http://www.birdlife.org/datazone/speciesfactsheet.php?id=1016472. Date accessed 19/04/2018.

Birds of Prey and Owls in Zoos and Breeding Stations (2012). Issue 21, Moscow: The Moscow Zoo. – 199 pp. URL: http://earaza.ru/wp-content/uploads/hishptic21.pdf. Date accessed 15.04.2018.

Birds of Prey and Owls in Zoos and Breeding Stations (2013) Issue 22, Moscow: The Moscow Zoo. – 276 pp. URL: http://earaza.ru/wp-content/uploads/hishptic20.pdf. Date accessed 15.04.2018.

Birds of Prey and Owls in Zoos and Breeding Stations (2014). Issue 23, Moscow: Moscow Zoo, "Agrarian technology" – 280 pp. URL: http://earaza.ru/wp-content/up-loads/hishptic23.pdf. Date accessed 15.04.2018.

Birds of Prey and Owls in Zoos and Breeding Stations (2015). Issue 24, Moscow: Moscow Zoo, "Agrarian technology" - 218 pp. URL: http://earaza.ru/wp-content/uploads/ hishptic24.pdf. Date accessed 15.04.2018.

Birds of Prey and Owls in Zoos and Breeding Stations (2016). Issue 25, Moscow: EARAZA, "Agrarian technology", – 235 pp. URL: http://earaza.ru/wp-content/up-loads/hishptic25.pdf. Date accessed 15.04.2018.

Chestin, I.E., ed. (1998) Wildlife trade in Russia and Central Asia. TRAFFIC Europe, 206 pp.

CITES (2015) Resolution Conf. 17.7 (Rev. CoP18) Review of trade in animal specimens reported as produced in captivity. URL: https://www.cites.org/sites/default/files/document/E-Res-17-07-R18.pdf

Danilov I.G., Milto K.D., Mazanaeva L.F. (2004) Testudo [graeca] pallasi Chkhikvadze et Bakradze, 2002 // Manouria. Vol. 7 (22) (in Russian).

Dementiev G.P., Shagdarsuren A. (1964) About Mongolian Saker Falcon and Taxonomic Status of Altai Gyrfalcon. Studies on the fauna of the Soviet Union (birds). Moscow: 3–37 (in Russian).

Dementyev G.P. (1951) Birds of Prey. Birds of the Soviet Union. Volume 1. Moscow: Sovetskaya Nauka, Pages 70–341 (in Russian).

Dixon A., Sokolov A., Sokolov V. (2012) The subspecies and migration of breeding Peregrines in northern Eurasia. – Falco. 39: 4–9. URL: http://www.mefrg.org/images/ falco/falco39.pdf Date accessed 19/04/2018.

Dixon A., Sokolov A., Sokolov V. (2015) Peregrinations. Reports on the XIV International Ornithological Conference of North Eurasia, Almaty, Kazakhstan, August 18–24, 2015. – Russian Raptor Research and Conservation Network. URL: http:// rrrcn.ru/archives/23980/2#Dixon Date accessed 19/04/2018. Dmitrieva L, Kondakov AA, Oleynikov E, Kydyrmanov A, Karamendin K, Kasimbekov Y, et al. (2013) Assessment of Caspian Seal By-Catch in an Illegal Fishery Using an Interview-Based Approach. PLoS ONE 8(6): e67074. https://doi.org/10.1371/journal.pone.0067074

Dmitrieva L., Härkönen T., Baimukanov M., et al. (8 more authors) (2015) Inter-year variation in pup production of Caspian seals (Pusa caspica) 2005-2012 determined from aerial surveys. Endangered Species Research, 28 (3). 209 - 223. ISSN 1863-5407

Dunayev E.A., Orlova V.F. (2012) Amphibians and reptiles of Russia. Atlas-identificator Moscow, 320 pp. (in Russian).

Dunishenko Yu. M. (2018) Asiatic black bear in the Amur Region: assessment of the population state in 2010–2017. Vladivostok: WWF, 80 p. (in Russian).

Ermolin I and Svolkinas L. 2018. Assessment of the sturgeon catches and seal bycatches in an IUU fishery in the Caspian Sea. *Marine Policy*, 87: 284-290. https://doi. org/10.1016/j.marpol.2017.09.022

Events. – Raptors Conservation (2012) Nº 25. P. 5–27. URL: http://rrrcn.ru/ru/archives/19045. Date accessed 25.04.2018 (In Russian).

Fedotkin D.V., Sorokin A.G. (2006) A brief review of the reports presented at the meeting of the CITES Falcon Enforcement Task Force. 21–23 November 2005, Abu Dhabi, UAE. – Raptors and their conservation. No. 5. P. 12–15. (in Russian).

Filatova, O. A., Shpak, O. V., Ivkovich, T. V., Borisova, E. A., Burdin, A. M., & Hoyt, E. (2014) Killer whale status and live-captures in the waters of the Russian Far East. Intl Whal Commn Scientific Committee, SC/65b/SM07.

Fox N., Barton N., Potapov E. (2003) Saker falcon conservation and falconry. – Steppe Bulletin. No. 14. P. 28–33. (in Russian).

Global Financial Integrity (2017) Transnational Crime and the Developing World. URL: https://www.gfintegrity.org/wp-content/up-loads/2017/03/Transnational_ Crime-final.pdf. Date accessed 25.11.2019.

Karyakin I.V. (2011) Subspecies Population Structure of the Saker Falcon Range. – Raptors Conservation. 21: 116–171. URL: http://rrrcn.ru/ru/archives/18913. Date accessed 15.04.2018.

Karyakin I. V., Levin A. S., Moshkin A. V., Nikolenko E. G. (2015) Saker Falcon in Russia and Kazakhstan. – XIV International Ornithological Conference of Northern Eurasia. II. Oral presentations. Almaty: 473–530. URL: http://rrrcn.ru/ru/archives/25433. Date accessed 15.04.2018.

Karyakin I.V., Nikolenko E.G. (2013) Saker Falcon in North Eurasia: past and present, but is there the future? Reports on the International Conference "Conservation of steppe and semidesert ecosystems in Eurasia", Almaty, Kazakhstan, 13–14 March 2013. – Russian Raptor Research and Conservation Network. URL: http://rrrcn.ru/ ru/archives/19174. Date accessed 19.04.2018.

Karyakin I.V., Nikolenko E.G., Shnayder E.P. (2014) Results of Monitoring of the Saker Falcon Population in the Altai-Sayan Region in 2014, Russia. – Raptors Conservation. № 29. P. 58–76. DOI: 10.19074/1814-8654-2014-29-58-76. URL: http://rrrcn. ru/ru/archives/25729. Date accessed 19.12.2018.

Kobkil E.A., Arkhipov V.Yu. (2014) The bird fauna of Northern Eurasia within the borders of the former Soviet Union: a list of species. – Zoological Studies, No. 14. KMK. 171 pp. (in Russian).

Kochnev A., Zdor E (2014) Harvest and use of polar bears in chukotka: results of 1999-2012 studies. Moscow:Pi Kvadrat.-148 p.

Korepov M. (2015) Lovozero tundra. Birds. – Livejournal. URL: http://korepov1986. livejournal.com/5119.html. Date accessed 19.04.2018.

Kovacs, A., Williams, N.P. and Galbraith, C.A. (2014) Saker Falcon Falco cherrug Global Action Plan (SakerGAP), including a management and monitoring system, to conserve the species. Raptors MOU Technical Publication No. 2. CMS Technical Series No. 31. Coordinating Unit – CMS Raptors MOU, Abu Dhabi, United Arab Emirates: 1–206. URL: http://www.cms.int/dugong/sites/default/files/document/ SakerGAP_r_0.pdf. Date accessed 19.03.2018.

Lobkov E., Gerasimov Yu., Gorovenko A. (2011) Status of the Kamchatka Gyrfalcon (*Falco rusticolus*) population and factors affecting it. – Gyrfalcons and Ptarmigan in a Changing World / R. T. Watson, T. J. Cade, M. Fuller, G. Hunt, and E. Potapov (Eds.). Volume II. Boise, Idaho, USA: The Peregrine Fund: 280–290. DOI: 10.4080/gpcw.2011.0127. URL: http://peregrinefund.org/subsites/conference-gyr/ proceedings/127-Lobkov.pdf Date accessed 19/04/2018.

Lobkov E. G., Gerasimov Yu. N., Gorovenko A. V. (2007) Material on the status of the Gyrfalcon (*Falco rusticolus*) population in Kamchatka. – Ornitologia. 34(1): 5–35.

Lyapustin S.N. (2008) Tackling smuggling of fauna and flora in the Far East (end of the 19th - beginning of the 21st century). Russian Customs Academy, Vladivostok Branch; WWF. Vladivostok (in Russian).

Lyapustin S. N. et al. (2013) Commodity research and customs review of the goods of animal and plant origin. Russian Customs Academy Vladivostok Branch, 2nd revised edition. Vladivostok ISBN 978-5-98137-037-3 (in Russian).

Lyapustin S. N., Fomenko P. V. (2015) Wildlife Trade and tackling poaching and smuggling of rare species of animals and plants in the Russian Far East (2009–2014). Vladivostok. URL: https://wwf.ru/resources/publications/booklets/nezakonnyyoborot-i-borba-s-brakonerstvom-i-kontrabandoy-redkikh-vidov-zhivotnykh-i-rasteniy-na-daln/ (in Russian).

Lyapustin S.N., Fomenko P.V.(2010) Amphibians of the Far East: a manual for customs officer. ed. Dyakov V.I. Russian Customs Academy, Vladivostok Branch. Vladivostok (in Russian).

Lyapustin S.N., Pervushina N.V., Fomenko P.V. (2010) Trafficking of fauna and flora in the Far East (2007–2009) WWF, TRAFFIC. Russian Customs Academy, Vladivostok Branch. Vladivostok. 74 p. (in Russian).

Lyapustin, S.N., Pervushina N. (2016). Legal and Illegal Trafficking of Objects of Fauna and Flora in Border Areas of China. Customs policy of Russia In the Far East. 3. 53-61. 10.17238/ISSN1815-0683.2016.53.

Mechnikova S., Romanov M., Kudryavtsev N. (2011) Change in numbers and nesting ecology of the Gyrfalcon in the Yamal Peninsula, Russia, from 1981 to 2010. – Gyrfalcons and Ptarmigan in a Changing World / R.T. Watson, T.J. Cade, M. Fuller, G. Hunt,

and E. Potapov (Eds.). Volume II. Boise, Idaho, USA: The Peregrine Fund: 205–212. DOI: 10.4080/gpcw.2011.0220. http://peregrinefund.org/subsites/conference-gyr/proceedings/220-Mechnikova.pdf Date accessed 19/04/2018.

Mineev Y. N., Mineev O. Y. (2011) Gyrfalcons *Falco rusticolus* in the tundra of Nenets Autonomous District, Archangelskaya Region. – Gyrfalcons and Ptarmigan in a Changing World / R.T. Watson, T.J. Cade, M. Fuller, G. Hunt, and E. Potapov (Eds.). Volume II. Boise, Idaho, USA: The Peregrine Fund: 253–258. DOI: 10.4080/gpcw.2011.0303. URL: http://peregrinefund.org/subsites/conference-gyr/proceedings/303-Mineev. pdf. Date accessed 19/04/2018.

Ministry of Natural Resources and Ecology of Kamchatka Kray (2012) Report on the environmental situation in the Kamchatka Kray in 2011 – Petropavlovsk-Kamchatsky – 244 p. URL: http://old.kamgov.ru/oiv_doc/910/18636.rar (in Russian). Date accessed 10.03.2018.

Ministry of Natural Resources and Ecology of Kamchatka Kray (2012) Report on the environmental situation in the Kamchatka Kray in 2012 – Petropavlovsk-Kamchatsky – 250 p. URL: http://old.kamgov.ru/oiv_doc/910/26234.pdf (in Russian). Date accessed 10.03.2018.

Ministry of Natural Resources and Ecology of Kamchatka Kray (2013) Report on the environmental situation in the Kamchatka Kray in 2013. – Petropavlovsk-Kamchatsky, 2014. – 299 p. URL: http://old.kamgov.ru/oiv_doc/910/32250.pdf (in Russian). Date accessed 10.03.2018. (in Russian).

Ministry of Natural Resources and Ecology of Kamchatka Kray (2015) Report on the environmental situation in the Kamchatka Kray in 2014. – Petropavlovsk-Kamchatsky– 328 p. URL: http://old.kamgov.ru/oiv_doc/910/38994.pdf (in Russian) Date accessed 10.03.2018.

Ministry of Natural Resources and Ecology of Kamchatka Kray (2016) Report on the environmental situation in the Kamchatka Kray in 2015. – Petropavlovsk-Kamchatsky – 316 p. URL: https://kamgov.ru/files/577c83549ab649.78289153.rar (in Russian). Date accessed 10.03.2018.

Ministry of Natural Resources and Ecology of Kamchatka Kray (2017) Report on the environmental situation in the Kamchatka Kray in 2016 – Petropavlovsk-Kamchatsky – 374 p. URL: https://kamgov.ru/files/595eb10f687f12.46665956.pdf (in Russian). Date accessed 10.03.2018.

Morozov V.V. (2011) Ecological basis for the distribution and breeding of Gyrfalcons in the tundra of European Russia and preconditions for spreading to new grounds. – Gyrfalcons and Ptarmigan in a Changing World / R.T. Watson, T.J. Cade, M. Fuller, G. Hunt, and E. Potapov (Eds.). Volume II. Boise, Idaho, USA: The Peregrine Fund: 229–238. DOI: 10.4080/gpcw.2011.0222. URL: http://peregrinefund.org/subsites/ conference-gyr/proceedings/222-Morozov.pdf. Date accessed 19/04/2018.

Nikolenko E. G. (2007) The results of the project on illegal falcon trade research in the Altai-Sayan region in 2000–2006. – Raptors Conservation. 8: 22–41. URL: http://docs.sibecocenter.ru/programs/raptors/RC08/raptors_conservation_2007_8_pages_22_41.pdf. Date accessed 25.03.2018.

Nikolenko E. G. (2018) Overview of Criminal Cases Concerning Illegal Withdrawal of Wild Falcons and Related Prosecutions in Russia and Neighboring Countries. – Raptors Conservation. 36: 24–43. (Unpublished).

Nikolenko E. G., Karyakin I. V. (2007) Falcon trade on the border of ages: myths and facts. – Raptors Conservation. 8: 12–21. URL: http://docs.sibecocenter.ru/programs/raptors/RC08/raptors_conservation_2007_8_pages_12_21.pdf. Date accessed 19.04.2018.

Nikolenko E. G., Karyakin I. V. (2016) Distribution, number and status of Saker Falcon (*Falco cherrug*) in the Republic of Tyva. – The current state of rare plant and animal species of the Republic of Tyva: materials of the All-Russian Scientific and Practical Conference (April 28–29, 2016) / U.V. Ondar (Ed.). Kyzyl: 99–105 (in Russian). URL: http://rrrcn.ru/wp-content/uploads/2016/09/Nikolenko-Karyakin-Saker2016.pdf. Date accessed 15.04.2018.

Nikolenko E. G., Karyakin I. V., Levin A.S. (2014a) Root causes of the decreasing in numbers of the Saker Falcon and ways of its decision within the Saker Falcon Global Action Plan in Russia and Kazakhstan. – Raptors Conservation. 29: 18–38. URL: http://rrrcn.ru/ru/archives/25759. Date accessed 20.03.2018.

Nikolenko E.G., Smelansky I.E., Karyakin I.V. (2014b) Atlas of animal species and their derivatives – the main objects of illegal traffic in the Altai-Sayan Ecoregion. Novosibirsk: 1–64. URL: http://rrcn.ru/ru/archives/22643. Date accessed 19.04.2018.

Nikolenko E. G., Smelyansky I. E. (2006) Analytical review of wildlife markets in the Altay-Sayan region. – MBOO Siberian Ecological Center. Report on Grant No. M630/RU007404/GLM for the project "Long-term conservation of biodiversity of the Altay-Sayan Ecoregion." Novosibirsk. (Unpublished). (in Russian).

Nikolenko E.G., Smelyansky I.E. (2009) Analytical review of illegal markets of wildlife and wildlife products in the Altay-Sayan Ecoregion. – MBOO Siberian Ecological Center. Report on Grant No. MW105/RU007406a/GLO for the WWF project "Longterm conservation of the Altay-Sayan Ecoregion: Integrating Conservation and Development." Novosibirsk (Unpublished). (in Russian).

Nikolenko E. G., Smelyansky I. E. (2016) Analytical review of illegal markets of wildlife and wildlife products in the Altay-Sayan Ecoregion. – MBOO Siberian Ecological Center. Report on Target Financing Contract No. 1505-2016 dated 15.05.2016. Novosibirsk (Unpublished). (in Russian).

Nikolenko E. G.(2015) The Sustainable Trapping of Falcons – Is It Possible in Russia and Other CIS Countries? – Raptors Conservation. № 31. P. 32–63. URL: http://rrrcn. ru/ru/archives/26090. Date accessed 19.03.2018.

Parsons K.M., Durban J.W., Burdin A.M. (7 more authors) (2013). Geographic Patterns of Genetic Differentiation among Killer Whales in the Northern North Pacific // J. of Heredity. V. 104. P. 737–754.

Pfeffer R. (2009) About Geographic Variances of the Saker Falcon. – Raptors Conservation. 16: 68–95. URL: http://rrrcn.ru/ru/archives/19501. Date accessed 15.04.2018.

Pokrovskaya I., Tertitski G. (2011) Number and distribution of Gyrfalcons on the West Siberian Plain. – Gyrfalcons and Ptarmigan in a Changing World / R.T. Watson, T.J. Cade, M. Fuller, G. Hunt, and E. Potapov (Eds.). Volume II. Boise, Idaho, USA: The Peregrine Fund: 267–272. DOI: 10.4080/gpcw.2011.0305. URL:http://peregrine-fund.org/subsites/conference-gyr/proceedings/305-Pokrovskaya.pdf. Date accessed 19/04/2018.

Potapov E. (2011) Gyrfalcons in Russia: Current status and conservation problems. – Gyrfalcons and Ptarmigan in a Changing World / R. T. Watson, T. J. Cade, M. Fuller,

G. Hunt, and E. Potapov (Eds.). Volume II. Boise, Idaho, USA: The Peregrine Fund: 191–196. DOI: 10.4080/gpcw.2011.0218. URL: http://peregrinefund.org/subsites/ conference-gyr/proceedings/218-Potapov.pdf. Date accessed 19/04/2018.

Potapov E., Sale R. (2005) The Gyrfalcon. T&A Poyser. A.C. Black/Yale University Press: 1–360.

Program of conservation of the birds of Falconidae family (2013) – Ecological problems and their solutions. URL: http://eco63.ru/programma-po-sohraneniyu-ptitssemejstva-sokolinyh. (in Russian). Date accessed 30.04.2018.

Raptors in Zoos and Breeding Stations (2017). Issue 26 / V. Spitsin, V. Ostapenko – editors. – Moscow: EARAZA, "Agrarian technology" – 260 pp. URL: http://earaza.ru/wp-content/uploads/hizhptic26.pdf. Date accessed 15.04.2018.

Riddle K.E., Remple J.D. (1994) Use of the Saker and other large falcons in Middle East falconry. – Raptor Conservation Today. B.-U. Meyburg, R.D. Chancellor Eds. Pica Press, pp. 415–420.

Shobrak M.Y. (2015) Trapping of Saker Falcon Falco cherrug and Peregrine Falcon Falco peregrinus in Saudi Arabia: Implications for biodiversity conservation. – Saudi Journal of Biological Sciences. 22: 491–502.

Shpak O.V. et al. (2016) A preliminary assessment of the transient killer whales (Orcinus orca) population in the Sea of Okhotsk. Abstracts of the Ninth International Conference "Marine Mammals of the Holarctic" (in Russian).

Shpak O.V., Glazov D.M. (2013) Sustainable use of beluga whale (Delphinapterus Leucas) in North-Okhotsk and West-Kamchatka fishing subzones. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences. Magazine "Fisheries" №6 (in Russian).

Smelansky I.E., Nikolenko E.G. (2010) Analysis of trade of the wild animals and their derivatives in the Altai-Sayan Ecoregion – 2005–2008. Krasnoyarsk. URL: http://www.wwf.ru/resources/publ/book/538 (in Russian).

Smelansky I.E., Nikolenko E.G. (2010) Analysis of trade of the wild animals and their derivatives in the Altai-Sayan Ecoregion – 2005–2008. Krasnoyarsk: 1–150. URL: http://www.wwf.ru/resources/publ/book/538. Date accessed 30.04.2018.

Sorokin A.G. (2015) Gyrfalcon in Russia: modern status, problems and ways to solve them. – XIV International Ornithological Conference of Northern Eurasia. I. Abstracts. Almaty: 467–468. URL: http://rrrcn.ru/ru/archives/25355. Date accessed 19.04.2018.

Stepanyan L.S. (1990) Conspectus of the ornithological fauna of the USSR. Moscow: 1–727 (in Russian).

Sushkin P.P. (1938) Birds of the Soviet Altay and adjacent parts of the North-Western Mongolia. M.–L.,. T. 1: 316, T. 2: 434 (in Russian).

Taylor, B.L., Baird, R., Barlow, J., (6 more authors) (2013) Orcinus orca. The IUCN Red List of Threatened Species 2013: e.T15421A44220470.International Whaling Commission, 2015. Report of the Scientific Committee. J. Cetacean Res. Manage. 16 (suppl.), Annex L, p. 299.

The Methodology for Estimating the Level of Damage Caused to Species Listed in the Red Data Book of Russian Federation, as Well as to Non-Game Species and their Habitats (Approved by decree of the Ministry of Natural Resources of Russia from $28.04.2008 \text{ N}^{\text{o}}$ 107) (in Russian).

TRAFFIC (2012). Captive Bred, or Wild Taken? TRAFFIC International, Cambridge, UK.

Tuniyev B.S., Tuniyev S.B. (2007); Reptiles // Red Data Book of Krasnodar Territory. Animals Krasnodar: Center for the Development of Printing, Television and Radio of the Krasnodar Territory.

UNODC (2017) Addressing Corruption and Wildlife Crime. URL: https://www.bmjv. de/SharedDocs/Downloads/EN/G20/UNODC_Adressing_Corruption.pdf

UNODC (2012) Wildlife and Forest Crime Analytic Toolkit Revised edition. URL: https://www.unodc.org/documents/Wildlife/Toolkit_e.pdf

Vaisman A. L., Fomenko P. V. (2004). Musk deer in Russia. Conservation, harvest and commercial use // Without a license to kill: the state of populations and musk deer harvest, trade in the musk deer gland in Russia and Mongolia. 18–61 pp. (in Russian).

Vaisman, A. L., et al. (1999) Wild animals and plants in the commercial trade in Russia and the CIS countries. Moscow, NIA Priroda, 157 p. (in Russian).

Wellsmith, M. (2011). Wildlife Crime: The Problems of Enforcement. European Journal on Criminal Policy and Research, 17(2), 125-148. https://doi.org/10.1007/s10610-011-9140-4

Williams A., Parry-Jones R., Roe D., (2016) The resource bites back. Entry-points for addressing corruption in wildlife crime. URL: https://www.u4.no/publications/the-resource-bites-back-entry-points-for-addressing-corruption-in-wildlife-crime.pdf

World Customs Organization (2017) Illicit Trade Report. URL: http://www.wcoomd. org/-/media/wco/public/global/pdf/topics/enforcement-and-compliance/activitiesand-programmes/illicit-trade-report/itr_2017_en.pdf

WWF, TRAFFIC (2015) Strategies for fighting corruption in wildlife conservation: a primer. URL: https://www.traffic.org/site/assets/files/9025/wci_strategies_for_ fighting_corruption_wildlife_conservation.pdf


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