

## ARTICLE

# CURRENT DISTRIBUTION AND POPULATION STATUS OF THE EURASIAN OTTER (*Lutra lutra*) IN RUSSIA AND SOME ADJACENT COUNTRIES - A REVIEW

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**Abstract:** In this paper we review the available literature, mainly Russian, and present our data on the distribution, number and population density of otter in Russia and in some adjacent countries. The Eurasian otter is a wide spread species in the Russian Federation, with a distribution from the tundra zone to the subtropics. The description of the northeastern border of the current geographic range of *Lutra lutra* is presented. Estimated otter population size in Russia is approximately 60-80 thousand individuals. Population density of otters in various habitats can differ within two orders of magnitude, ranging from 5-8 to 0.05 individuals per 10 km of coastline of water reservoirs. The otter is included in Red Data Books of 48 regions of Russia and is a harvested species in 21 regions.

**Key words:** Eurasian otter, *Lutra lutra*, distribution, status, Russia

## INTRODUCTION

The Eurasian otter (*Lutra lutra*) inhabits considerable parts of the Russian Federation. A significant part of the global population of the species is concentrated here. The otter lives in severe climatic conditions in Russia and its distribution reaches even the coast of the Arctic Ocean. Information on distribution and the status of the Eurasian otter in Russia is insufficient and patchy (Conroy et al., 1998, 2002). It is essential that we challenge this lack of information based on our own data as most information is inaccessible to most of researchers not able to read Russian publications. In this publication we have generalized the data which are available for us across Russia (the former RSFSR) and border areas of some adjacent states – Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan, Turkmenistan, Georgia, Azerbaidzhan, Armenia, Ukraine and Mongolia.

## TAXONOMIC STATUS

According to the recent report on the world's mammal species, there are eleven Eurasian otter subspecies: *lutra*, *angustifrons*, *aurobrunneus*, *barang*, *chinensis*,

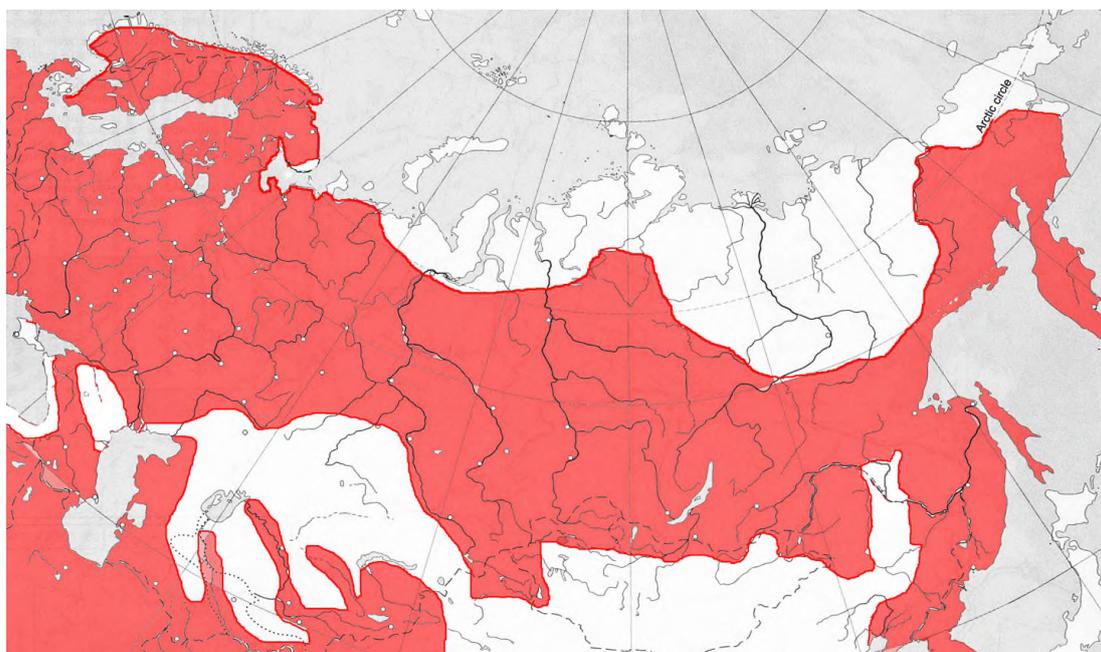
*hainana*, *kutab*, *meridionalis*, *monticola*, *seistanica* and *nair* (Wilson and Reeder, 2005). Otters from Japan were described as a separate subspecies *Lutra lutra nippon* (Imaizumi and Yoshiyuki, 1989) and was later treated as a separate species (Wozencraft, 2005). Two subspecies dwell in Russia: *L. l. lutra* L., 1758 and *L. l. meridionalis* Ognev, 1931. One more subspecies (*L. l. seistanica*) has been identified within the territory of the former USSR (Geptner et al., 1967). *L. l. meridionalis* inhabits the Greater Caucasus, the Transcaucasia region, and Central Asia (the northern and western parts of Iran). However, recent studies of craniometric variability gave ground for combining this subspecies with the nominative one *L. l. lutra* (Baryshnikov, Puzachenko, 2012). The taxonomical status of a taxon of *L. l. meridionalis* described from vicinities of Tehran (Ognev 1931), remains unclear, but most likely it should be considered as minor synonym of the nominative subspecies (Baryshnikov, Puzachenko, 2012). According to the authors mentioned above, *L. l. seistanica (oxiana)* Birula, 1912 inhabiting southeastern Kazakhstan, Uzbekistan, Kyrgyzstan, Turkmenistan, Tajikistan, and Afghanistan has strongly pronounced subspecies distinctions.

## DISTRIBUTION AND HABITAT

Over one-third (37%) of the entire area inhabited by *Lutra lutra* lies in Russia. The otter inhabits all the natural zones of the country, from tundra to mountains, mixed forests and semi-deserts (Fig. 1). In the northwest of Russia the otter is widespread along the coast of the Barents Sea from Murmansk to the east to the mouth of the Pechora River (except for the easternmost tip of the Kola Peninsula and the Kanin Nose Peninsula). To the east the border of geographic range crosses Polar Ural Mountains, bends around Gulf of Ob and the Yenisei Gulf of the Kara Sea, pressing to the north of the line of the Polar circle, and covering basins of the Heth and Kotuy Rivers. Further the border of distribution crosses the middle stretch of the Lena River, further to the mouth of the Kolyma River, then to the coast of the Bering Sea to the south of Anadyr Bay (Dubinin, 2002). The otter can be found on Kamchatka Peninsula, Sakhalin Island and Bolshoy Shantar Island, the islands in the Peter the Great Bay, and some islands of the Barents Sea (Kildin, Kharlov, Maly Zelenets Islands, etc. (Rakhilin, 1967). The otter inhabited the southern Kuril Islands of Kunashiri and Iturup (Kuroda, 1933) but the otter has been extincted during the 1950s as a result of destructive trade and uncontrolled harvesting (Oleynikov et al., 2015). The species inhabits the coastline of the Sea of Japan and Strait of Tartary approximately up to 51°N all the year round while further north the otter is only occasionally found in the littoral area.

The species dwells in the eastern part of Mongolia, at the outskirts of the Greater Khingan Range in the northern parts - in the basins of the Onon, Selemdzha, and Tes Rivers, in the Hovsgol and Ubsu-Nur lakes, and in the western part - in the Tsagaan Gol basin (Batsaikhan et al., 2010).

Two otter subspecies (*lutra* and *seistanica*) are found in Kazakhstan. *L. l. lutra* inhabits the eastern (Irtysh River), western (Ural River) and the northern part of Kazakhstan, and *L. l. seistanica* lives in the upper Ili River, where it also has a tendency to expand its distribution (Shaimardanov, Lobachev, Yu, 2010). The animals do not inhabit the Turan Lowland, most part of the Kazakh Hummocks, and have disappeared from the northern slopes of the Dzungarian Alatau (Gvozdev, 1986). *L. l. seistanica* is also found in Kyrgyzstan, Uzbekistan, Tajikistan and Turkmenistan.



**Figure 1.** Eurasian otter distribution (red) in Russia and some adjacent countries

The otters inhabiting some areas of the southern and northern Caucasian Federal Districts were classified as the Caucasian subspecies *L. meridionalis*. The Caucasian subspecies is rare throughout Russia and has been included in the Red Data Books of Russia (category 3), Georgia, Azerbaijan and Armenia in the regional Red Lists of endangered species. It is found rarely or sporadically in the Altai, Trans-Urals, southern Transbaikalia, and Central Black Earth regions.

The otter (*Lutra l. l.*) is distributed throughout Ukraine (Volokh, Rozhenko, 2009). It does not inhabit the lower reaches of the Zeya River, the interstream area between the Ob and Irtysh Rivers, and the Crimean Peninsula (Geptner et al., 1967).

## THE CURRENT STATUS AND HUNTING

In Russia, the otter is classified as a commercially harvested fur species with hunting regulated by a licensing system. The license system for otter hunting that has been adopted in Siberia and in the Russian Far East since the 1940s and in European Russia since the 1960s used to play a positive role (therefore the otter hunt carry out without restriction). Currently it is nothing more than a formality. Today, some of the quota licenses remain unpurchased and the harvesting intensity is low. The average reported hunting rate represents approximately 0.5% of the available resources of this species based on officially estimations of Ministry of Natural Resources and Environment of the Russian Federation. However, the real number of otters harvested in Russia is several times higher. The number of otters hunted is now pushed by market demands.

In Russia, the Eurasian otter was intensely hunted in the 20<sup>th</sup> century and the otter harvest rate was as high as 5,000 individuals per year. In the 1980s, the Kamchatka and Khabarovsk Krajs, the Arkhangelsk and Kirov Regions, and the Komi Republic held the leading positions in hunting this species. The contribution of these regions to the total rate of otter fur harvesting in the USSR was 67.5% (Makarov et al., 2012).

In the late 1990s, the demand for otter skins in Russia increased (the purchase price ranged from 70 to 230 USD). Most skins harvested in Russia were illegally exported and over 98% of the confiscated fur stock was intended to be exported to China (Prokhorov, 2009). It is not only otter skin that is highly valued in China but

also its internal organs are used in traditional medicine (Sheng, 1992). The demand for otter skins was high both in China and other Southeast Asian countries and the Tibetan people used otter skins to make traditional costumes and adornments but the Dalai Lama has made important announcements(see below).

A total of 978 contraband otter skins were confiscated (17 confiscation cases) in 1999-2006 in the Russian Far East (Lyapustin et al., 2007). In June 2001, 160 otter skins were confiscated on the Sino-Russian border in the Jewish Autonomous Region (which doubled the official hunting rate in the region) (Prokhorov, 2009). It is absolutely clear that these figures are just the tip of the iceberg.

From 1990–2006 as international demand for the otter skins was great the otter resources in Russia were intensively exploited. In this period: the otter skins made up to 10% of the total fur harvest rate in Russia (Grevtsev, 2007).

Overhunting was observed in some areas easily accessible to hunters in the commercially exploited regions of the Russian Far East and Siberia. The demand for otter fur has declined since 2006-2007 and the otter harvest rate decreased. This was preceded by the 14<sup>th</sup> Dalai Lama's address made in 2006 on the necessity of stopping the overuse of animal skins, of which many are becoming endangered while their hunting is illegal (<http://news.bbc.co.uk/2/hi/science/nature/4415929.stm>).

Today while some of the quota licenses remain unpurchased most harvested skins are sold on the domestic market. According to the official reports, only 232–390 otters per season were harvested in Russia during the three hunting seasons in 2007–2010 (Lomanova et al., 2011). The official use of otter resources is at a very low level (0.5% of the available resources of this species). However, the real number of otters harvested in Russia is several times higher than the reported data (Grevtsev, 2007; Makarov et al., 2012).

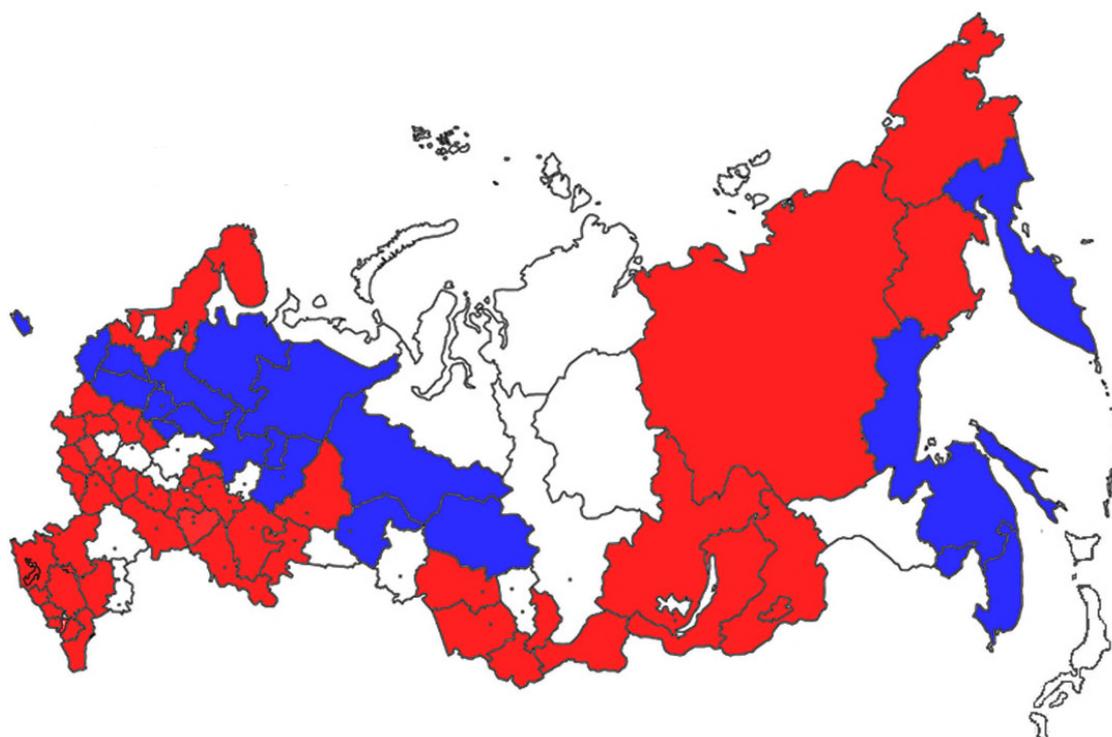
The otter has been added to the regional Red Data Books of 48 (56%) (out of 85 regions) entities of the Russian Federation (Table 1). In 2007–2010, the otter was harvested in 21 administrative areas of Russia (Lomanova et al., 2011). No quota permits were issued in 14 areas (Fig. 2).

**Table 1.** Regions of the Russia where Eurasian otter listed in regional Red Data Books

Federal districts, subjects of the Russian Federation	Year of the publication of the resolution on the regional Red Data Book	Category*
<b>I. Central</b>		
1. Bryansk region	2003	3
2. Vladimir region	2008	1
3. Voronezh region	2008	3
4. Kaluga region	2000	2
5. Kursk region	2013	3
6. Lipetsk region	2005	2
7. Moscow region	2008	2
8. Smolensk region	2012	2
9. Tambov region	2010	3
10. Belgorod region	2005	3
11. Oryol region	2006	2
<b>II. Northwest</b>		
12. Republic of Karelia	2007	3
13. Murmansk region	2003	2
14. Leningrad region	2005	3
15. St. Petersburg	2011	3

<b>III. North Caucasian</b>		
16. Republic of Dagestan	2009	3
17. Republic of Karachay-Cherkessia	2013	3
18. Republic of Northern Ossetia-Alania	1999	3
19. Republic of Chechnya	2007	2
20. Republic of Ingushetia	2006	2
21. Stavropol Krai	2010	3
22. Republic of Kabardino-Balkaria	2004	3
<b>IV. Youzhny</b>		
23. Republic of Adygea	2013	2
24. Krasnodar Krai	2011	3
25. Rostov region	2010	3
26. Republic of Kalmykia	2010	1
<b>V. Volga</b>		
27. Republic of Bashkortostan	2002	2
28. Republic of Mariy El	2009	3
29. Republic of Tatarstan	2009	2
30. Ulyanovsk region	2003	1
31. Republic of Chuvashia	2010	1
32. Saratov region	2006	1
33. Samara region	2005	1
34. Penza region	2006	2
35. Orenburg region	2012	2
<b>VI. Ural</b>		
36. Chelyabinsk region	2005	2
37. Sverdlovsk region	2008	2
<b>VII. Siberian</b>		
38. Republic of Altai	2006	3
39. Republic of Buryatia	2005	2
40. Republic of Khakassia	2014	3
41. Altai Krai	2006	2
42. Irkutsk region	2010	3
43. Zabaykalskiy Krai	2010	1
44. Novosibirsk region	2008	3
45. Republic of Tyva	2002	3
<b>VIII. Far East</b>		
46. Republic of Sakha (Yakutia)	2009	2
47. Magadan region	2007	3
48. Chukotka region	2007	3

\*Category: 1 - endangered; 2 - reduced population; 3 – rare



**Figure 2.** The otter status in regions of Russia. Regions of Russia where Eurasian otter listed in regional Red Data Books (red), otter as a hunting object (blue), no quota permits were issued (not painted).

#### **POPULATION/RESOURCES AND POPULATION DENSITY**

As estimated by experts, the otter population in Russia in the 1930-1940s was 80,000–100,000 individuals (Rozhnov and Tumanov, 1996). The only All-Russian census of otters was organized and performed in 1987 using the unified procedure (“The Methodological Guidelines for census of Otters and Minks”, 1983) approved by the Main Administration of Hunting and Reserves of the Russian Soviet Federated Socialist Republic (the name of the Russian Federation till December 25, 1991, part of the Union of Soviet Socialist Republics).

From this, the otter population in Russia was estimated to be 60,000 individuals at that time (Nazarov et al., 1990). According to the data reported by the Control Information Analytical Center of Game Animals and Their Habitats (CentrOkhotKontrol), the otter population in Russia ranged from 60,000-78,000 individuals. During the subsequent two decades, the inventory of the otter using the approved procedure was performed occasionally in some entities of the Russian Federation. In 1991–1995 (5 years), the otter population in Russia had declined by 13%, from 60,400 to 52,600 animals. The greatest decline (17.5%) was observed in the Russian Far East where overhunting stress was the strongest (Lomanova, 1996).

According to the estimates made by the State Science Institution Zhitkov Russian Science and Research Institute of Hunting and Animal Breeding (Kirov Russia), the otter population in the early 2000s remained at the level of 60,000 individuals (Grevtsev, 2007) while according to the 2003 reports by the Control Information Analytical Center of Game Animals and Their Habitats, it was over 70,000. The total otter population in Russia, as estimated by the staff of the Control Information Analytical Center of Game Animals and Their Habitats in autumn 2010, was 75,000–80,000 individuals (Lomanova, 2011). The average perennial number of otter population in Russia is 60,000 individuals (Makarov et al., 2012). Currently,

most of the species population is concentrated in two federal districts: the Northwestern (38% of individuals) and Far Eastern ones (22% of individuals).

The population of the Caucasian otter (*L. l. meridionalis*) is less than 600-700 individuals (Tumanov, 2009), although more than 1100 animals were reported by the Control Information Analytical Center of Game Animals and Their Habitats (Lomanova, 2011).

Currently, data on the number of otters in Russia is just an expert evaluation. They do not reflect an objective number, and at best the data are reflecting a current trend of change in numbers. This is due to the lack of real existing mechanisms of governance and oversight in game management of Russia (high cost of censuses and lack of demand for otter fur).

The total number of the subspecies *L. l. lutra* in Kazakhstan is about 100 individuals. Is the object of hunt and the estimated number for the East Kazakhstan region was down to 10 individuals in 2007 (Berber, 2008).

The otter population in Russia, Ukraine, Kazakhstan, and Mongolia appears to have been increasing recently (Berber, 2008; Volokh, Rozhenko, 2009; Shaimardanov, Lobachev, Yu, 2010; Lomanova, 2011).

The otter population density in Russia is not very uniform and varies over a wide range. In the most favorable habitats in the rivers of the southern part of the Russian Far East (Sikhote-Alin Mountain), the population density of the species is 6 to 8 otters per 10 km of river bed (the Bikin, Anyui, and Botchi Rivers) (Kucherenko, 1976; Oleynikov, 2010). In northeastern Siberia and above the Arctic Circle, the population density is one otter per 200 km of river or 0.05 otters per 10 km of river (the Maly Anyui River) (Dubinin, 2002). The population densities of the species in Siberia are usually less than one otter per 100 km of river. In the rivers in the Baikal–Lena Nature Reserve, the average otter population density is 2–3 individuals per 10 km of river (Stepanenko, 2001). The population density in the northern regions is low, ranging from 0.08 to 1–2 individuals per 100 km of river bed in the Yenisei basin because of ice buildups and freezing of water bodies. The otter population density is rather low in the Trans-Urals and Altai regions as well as in the Central Black Earth regions: 0.1–0.2 individuals per 10 km of river. The Pskov and Leningrad regions are characterized by high population density of the species: 2 and 1.9 individuals per 10 km of river respectively (Glushkov et al., 2008).

In the Russian Far East, high population densities are observed in the Sakhalin region, Primorsky Krai, the southern part of the Khabarovsk and Kamchatka Krai. In western Russia, the otter is common and abundant in the Tver, Yaroslavl, Arkhangelsk, Vologda, Novgorod, Pskov, and Kirov regions, in the Perm Krai, and the Komi Republic. In the northern parts of otter habitat, the type of winter ice cover on rivers (access to water, stratified ice with hollow interlayer's) is an important factor. In the montane regions, the otter occurs at altitudes of up to 2800 above sea level and does not inhabit the montane area at the northern border of its range (Vaysfel'd, 1977). The species dwells only in large rivers that have access to water during winter time and have no significant ice buildups.

In Russia, there is a general trend for the otter population density to decrease while moving from the south northward and from wet areas (high coefficient of density of the river network and the count of precipitation) to the arid ones.

#### **CONSERVATION STATUS AND THREATS**

Hunting and overhunting in particular sometimes reduce the resources and even causes the loss of the species in some regions, being among the key factors for reduction of otter populations. Short- (2–3 years) and long-term (5–10) hunting bans have been used to recover the population clusters of otters in Russia but the otter

population has effectively recovered only due to the long-term bans. In the regions occupied by sporadic otter populations or where its population has been reduced because of anthropogenic factors, the species has been inscribed into the regional Red Data Books and otter hunting has been prohibited (Table 1). The Caucasian otter (*L. l. meridionalis*) has been included into the Red Data Book of Russia (category 3: rare, insufficiently studied subspecies). The otter has also been added to the Red Data Books of China, Mongolia, Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan, Turkmenistan, Armenia and Ukraine.

The threats to otter habitat in Russia include shallowing of rivers because of intense logging, fish stock reduction, and water pollution with industrial and household wastes. Mining, particularly of precious metals and hydrocarbons, affects water quality. There is currently an increased threat of river and coastal pollution caused by possible oil and oil derivative spills. Construction and subsequent operation of hydroelectric power plants have a negative impact on the otter population. Construction of linear structures, such as pipelines, power lines, motor- and railroads, destroy the habitats and reduces safety of animal migrations. Most motor roads are either not equipped at all or equipped with an insufficient number of wildlife crossing structures.

## CONCLUSION

There is a tendency in Russia to increase the number of regions where the otter is included in the regional Red Data Books. These regions are located mainly in the European part of the country with high population density and the northern distribution limits of otter. Otter population in Russia declined by 10-20% from 1940-1950th until beginning of 2000th. There is a growing population and expansion of an area range of otter in some regions of Russia, Mongolia, Kazakhstan, and Ukraine in the last 5-7 years because of a decrease in the demand for its fur.

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## RÉSUMÉ

### STATUT ACTUEL DE LA DISTRIBUTION ET DE LA POPULATION DE LA LOUTRE EURASIENNE (*Lutra lutra*) EN RUSSIE ET DANS LES PAYS ADJACENTS : UN EXAMEN

Dans cet article nous avons examiné la littérature disponible, principalement Russe, et présentons nos données sur la distribution, le nombre, et la densité de la population des loutres en Russie et les pays adjacents. La loutre eurasienne est une espèce largement répandue au sein de la fédération Russe, avec une aire de distribution allant de la toundra aux zones subtropicales. La description de la frontière nord-est de l'aire géographique actuelle de *Lutra lutra* est présentée. La taille de la population des loutres en Russie est estimée approximativement entre 60 – 80 mille individus. La densité de ces loutres entre différents habitats peut varier entre 2 ordres de magnitude allant de 5-8 à 0,05 loutres pour 10 km de berge des réservoirs d'eau. La loutre est inscrite dans le « Red Data Book » de 48 régions russes et est une espèce exploitée au sein de 21 régions.

## RESUMEN

### DISTRIBUCIÓN ACTUAL Y ESTADO POBLACIONAL DE LA NUTRIA EURASIÁTICA (*Lutra lutra*) EN RUSIA Y ALGUNOS PAÍSES ADYACENTES - UNA REVISIÓN

En este trabajo revisamos la literatura disponible, principalmente rusa, y presentamos nuestros datos de distribución, número y densidad poblacional de la nutria en Rusia y algunos países adyacentes. La nutria eurasiática es una especie de amplia distribución en la Federación Rusa, que va desde la zona de tundra hasta el subtrópico. Se presenta la descripción del límite noreste de la distribución actual de *Lutra lutra*. El tamaño poblacional estimado de la nutria en Rusia es aproximadamente 60-80 mil individuos. La densidad poblacional de las nutrias en distintos hábitats puede diferir en dos órdenes de magnitud, yendo de 5-8 a 0.05 individuos por cada 10 km de línea de costa de los cuerpos de agua. La nutria está incluida en los Libros Rojos de 48 regiones de Rusia, y está sujeta a actividad extractiva en 21 regiones.