

# Blakiston's Fish Owl and Eurasian Eagle Owl in Southern Primorye

## Blakiston's Fish Owl and Eurasian Eagle Owl in Southern Primorye

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## Introduction

Blakiston's Fish Owl and Eurasian Eagle Owl are the largest owls in the world. They are non-migration. Their requirements for habitats are precise: clean unfreezing rivers with fish and broadleaf forests with old-grown trees for Fish Owl and rocky cavities among mosaic landscapes full of available quarry. These owls were never numerous in the Far East despite of the fact that optimal breeding range of Blakiston's Fish Owl is situated here. Both species are endangered and listed in national and international Red Data lists.

Recently large attention was turned to Blakiston's Fish Owl and its conservation, however all activities are concentrated in relatively undisturbed forests of Primorye and Khabarovsk Region. This is to a less degree true for the Eurasian Eagle Owl. Small breeding populations still exist in transformed ecosystems of roads, villages and agricultural fields with inclusions of small mountain forests. There are no studies dealing with the owls in densely populated areas of Southern Primorye. About 15 pairs of Blakiston's Fish Owl and the same number of Eurasian Eagle Owl have been living in the Lasovskiy, Olginskiy, Kavalerovskiy and Chuguevskiy administrative districts of Primorye in 1999-2005.

Project is aimed to conserve dispersed pairs of Blakiston's Fish Owl and Eurasian Eagle Owl in densely populated areas of Southern Primorye, Far East, Russia. With intensive resource exploitation of the region (mainly timber resources) the ecological niche of large owls changes dramatically. Owl pairs, which are able to inhabit transformed ecosystems, need to be located, mapped, monitored and protected. This project is the first step for long-term conservation of Blakiston's Fish Owl and Eurasian Eagle Owl in human transformed landscapes. It will provide basic information on numbers, distribution, habitats, nesting biology and immediate threats.

## Achieved Results versus Objectives

Our work objectives include:

1. spring nocturnal surveys of breeding calls with mapping of pair/single male territories;
2. searching for nest
3. detailed description of habitats within owl territories (landscape mosaic)
4. evaluation of impact and negative factors of environment
5. information and education directed to owl conservation

### **1. Spring nocturnal surveys for breeding calls with mapping of pair/single male territories**

We located owls by means of registration of vocalization. Listening for owls took place in early mornings and late evenings along the rivers and creeks and seacoasts (table 1). Blakiston's Fish Owl is known to be the most active in late evening hours. In springtime (March-April) we registered vocalization of adult breeding pairs and single males, while in summer (late May-June) we listened for adults and offspring. We use the method of "vocal provocation" for the locating of both species, owl voices were played with tape-recorder and each replay was reported. We use this method for mapping of pair territory. After the territory was delineated we visit it in diurnal time and described habitats in details. We drove car along rivers and seacoast where it was possible, places out of roads were searched by feet and rubber boat, and we used motor-boat for traveling along the coast. Additionally we checked rocks along the rivers, creeks and seacoast for Eurasian Eagle Owl roosts.

Table 1. Survey routes and periods.

<b>District</b>	<b>River</b>	<b>Survey length, km</b>	<b>Periods of survey</b>
Chuguevskiy	Pavlovka	66	March, April, July 2007
Chuguevskiy	Ussuri	48	March, July, August 2007
Chuguevskiy	Zhuravlevka	37	June, August 2007
Lazovskiy	Chernaya	15	December 2006, March-June 2007
Lazovskiy	Kievka	100	November 2006, January-April, July-August 2007
Lazovskiy	Krivaya	33	November 2006, January-April, July-August 2007
Lazovskiy	Lazovka	30	November 2006, January-April,

			July-August 2007
Ol'ginskiy	Avvakumovka	92	February-June 2007
Ol'ginskiy	Arzamazovka	40	February-June 2007
Ol'ginskiy	Margaritovka	30	November 2006, March-April, June 2007
Ol'ginskiy	Milogradovka	45	November 2006, March, June 2007
Ol'ginskiy	Mineral'naya	25	February-June 2007
Ol'ginskiy	Vasil'kovka	45	February-June 2007
Partizanskiy	Alexeevka	14	March, July 2007
Partizanskiy	Partizanskaya	41	March, July 2007
Partizanskiy	Tigrovaya	8	March, July 2007
TOTAL		669	

We surveyed the coast of Sea of Japan from Kievka-River mouth to Olga village, total of 74 km. Some rivers were surveyed for several times. Total survey length was 1247 km. Total area covered with surveys was about 20,000 km<sup>2</sup>.



**Figure 1. Adult female Blakiston's Fish Owl near the nest**

Table 2. Result of survey for breeding calls of Blakiston's Fish Owl, Primorye, autumn 2006 – summer 2007.

River basin <sup>A</sup>	Historical data	Results of survey		Note
		# breeding pairs	# unpaired birds	
Avvakumovka	absent	2	2	
Alexeevka	absent		1	
Arzamazovka	absent		1	
Chernaya	Nesting was reported in 2005, since the tree was broken there aren't nesting records	1	no	Pair mover to other part of river comparing to 2005
Mineral'naya	absent	1	1	
Kievka	Unpaired bird lived here in 2000-03	no	no	
Pavlovka	absent	2	2	Probably one more unpaired bird
Ussuri	absent	1	1	
Vasil'kovka	absent	2	1	
Zhuravlevka	absent	2	2	
<b>TOTAL</b>		<b>11</b>	<b>11</b>	

A – Mainstream of river together with small tributaries (creaks)

Blakiston's Fish Owl wasn't found in the basins of rivers Krivaya, Lazovka, Margaritovka, Milogradovka, Partizanskaya and Tigrovaya. Total of 11 pairs and 11 unpaired singles of Blakiston's Fish Owl were surveyed by their breeding calls in densely populated districts of Primorye as follows, Chuguevskiy, Lazovskiy, Ol'ginskiy and Partizanskiy.



**Figure 2. Typical habitat of Blakiston's Fish Owl in Milogradovka-River valley.**

Survey for Eurasian Eagle Owl breeding calls was more difficult, than for those of Fish Owl, because of more hidden behavior and less vocal activity of the first species. Finally we used both listening for calls and visual investigation of the rocks along the seacoast and rivers.

Table 3. Result of survey for breeding calls and investigation of rocks for Eurasian Eagle Owl, Primorye, autumn 2006 – summer 2007.

River basin <sup>A</sup> / part of seacoast/ sea island	Historical data	Results of survey	
		# breeding pairs	# unpaired birds
Avvakumovka	absent	2	no
Chernaya	absent	1	no
Kievka	absent	1	no
Pavlovka	absent	1	no
Ussuri	absent	1	no
Tigrovaya	absent	1	no
Cape Ostrovloy, seacoast of Lazovskiy District	absent	1	no
Seacoast of Ol'ginskiy district	absent	2	no
Opasniy Island	Nest known from 2005	1	no
Petrov Island	Nest site known from 2001, but pair was located just in 2007	1	no
<b>TOTAL</b>		<b>12</b>	<b>0</b>

A – Mainstream of river together with small tributaries (creaks)

Eurasian Eagle Owl wasn't found in other locations except for mentioned in table 3. Twelve breeding pairs were located and their territories were mapped. Opposite to Fish Owl the eagle owl don't have duet vocalization; that is why it is very difficult to distinguish between a pair and a single male vocalizing. We consider each vocalizing male as a pair (table 3).

## 2. Searching for nests

At any place where it was possible we tried to locate nest of owls. There were three nests of Blakiston's Fish Owl and two nests of Eurasian Eagle Owl found/investigated during this project (figures 3, 4 and 5). Nests of Blakiston's Fish Owl all were placed in broken trunks of *Ulmus japonica*, *Populus koreana*, and *Larix olgensis*. Trunk diameter was 0,8-1,25 m at 1,5 m high.



**Figure 3. Nest of Blakiston's Fish Owl in Korean Poplar. Downy young is hiding.**

### **3. Detailed description of habitats within owl territories (landscape mosaic)**

After mapping of pair territory we describe landscape mosaic of habitats. In human transformed habitats of Lazovskiy and Olginskiy Districts (eastern slope of Sikhote-Alin' range) Blakiston's Fish Owl inhabits riverine forests dominated with *Ulmus japonica*, *Populus koreana*, *Fraxinus sp.*, *Phellodendron amurense*, *Juglans mandshurica*, and *Chosenia arbutifolia*. Tree layer is 20-28 m high with mean trunk diameter in 45-80 cm at 1,5 m. Maximal trunk diameter is 120-140 cm. On western slope of the Range (Chuguevskiy district) same riverine forests includes also Black Pine (*Pinus koreases*). All known nests were situated in the valleys of small creeks within 15-50 m from water. Distance from the nest to the nearest large river was 300-500 m. Hunting areas were shallow riffles 0,5 m deep and low currant shallows 1 m deep. Blakiston's Fish Owl was found to nest in secondary forests of *Quercus mongolica*, *Larix olgensis*, and *Betula sp.* in Chernaya-R valley where riverine forest have been over-logged.

Eurasian Eagle Owl inhabits only rocks both in river valleys and along seacoast. Rocks are of different size 10-100 m high and 35-300 m long. It prefers south and south-east oriented rock on seacoast. Rock exposition doesn't matter along rivers. Surrounded forests are made by Mongolian Oak and Black Pine. Coastal nests were often placed close to seabird colonies of

Japanese Cormorant (*Phalacrocorax filamentosus*), Black-tailed Gull (*Larus crassirostris*) and Spectacled Guillemot (*Cepphus carbo*).



**Figure 4. Eurasian Eagle Owl nesting habitat on Petrov Island.**



**Figure 5. Eurasian Eagle Owl nest.**

#### **4. Evaluation of impact and negative factors of environment**

We found main factor effecting Blakiston's Fish Owl breeding population is habitat limitation. This owl has strong habitat requirements as follows, old-grown deciduous forest with large old poplars and elms, clean water flows open throughout the winter, presence of fish in these water bodies. All three known nests of Blakiston's Fish Owl were placed on the broken columns of elm, poplar and larch at height 6 to 11 m. Tree column diameter was 1,0 – 1,6 m at height of 1,5 m. Main factor is the presence of old trees suitable for nesting.

We also reported occasional shooting of Blakiston's Fish Owls as a factor of additional mortality and pair break-up.

Main limiting factor for Eurasian Eagle Owl in South Primorye is recreation by mountain-climbers. There are six from seven known Eurasian Eagle Owl nest sites that disappeared in last years in Partizanskiy District of Primorye seemingly due to climbing activity. Other factors are mortality in Sable and Fox traps and occasional shooting.



## 5. Information and education directed to owl conservation

We elaborated special questionnaire about Blakiston's Fish Owl and Eurasian Eagle Owl. Seventy five questionnaires were distributed among local hunters via hunting societies. We receive only three replies. One of replies gave us positive result in locating of Fish Owl pair. During field work we spoke to 111 local people in villages. These conversations showed that 53% of people have no knowledge about Blakiston's Fish Owl and Eurasian Eagle Owl, they consider all large owls to be similar. Thirty four per cent of local people know that Fish Owl and Eagle Owl differ from other large owls. Thirteen per cent of locals know both species well and can distinguish between them. This group included fisherman, hunters and wood-cutters. They reported meetings with Blakiston's Fish Owl and Eurasian Eagle Owl thanks to which we located two nesting sites of Fish Owl and one nesting site of Eagle Owl.

Information and Education program devoted to owl conservation was set up in schools of Lazovskiy District. Competition of essays about Blakiston's Fish Owl and Eurasian Eagle Owl took place among schoolchildren, thirty nine children participated. Thirty three schoolchildren participated in competition of owl drawings. We gave 14 lectures for high school students and 3 lectures for schoolchildren. We created photo exhibition about owls in Lazo School. Information and Education program took place in December 2006 until April 2007.



**Figure 6. School conference devoted to large owls, Lazo, Primorye.**

Main limiting factor for Blakiston's Fish Owl is absence of old-grown trees with holes suitable for nesting. We reported also cases of illegal shooting of this owl.

Factor affecting Eurasian Eagle Owl are more numerous. They include disturbance during nesting, illegal shooting, mortality in fur mammal traps. There was only one nest from seven nests known for Partizanskiy District remained after climbing tourism on rocks.

## Project Outreach

Two papers were published in local newspaper and one paper for regional newspaper is prepared.

### Expenses versus Budget

Item	Received from Foundation, £sterling	Expended for the project, £sterling
Transportation:	900	990
Car rental (including petrol)		
Field equipment:		
Tent, 1	740	602
Sleeping bags, 3		
Tape recorder for stimulation of owl vocalization, 1		
CB radio, 3		
Field per diem:		
Per diem, 2 prs, 60 days, £12 per day	1440	1440
Small supply		
Bank fee for money cash	145	145
		32
<b>TOTAL</b>	<b>3225</b>	<b>3209</b>

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