Occurrence and catching of Snowy Owls in Yugorskiy Peninsula, Russia, in 2012.

Field Report

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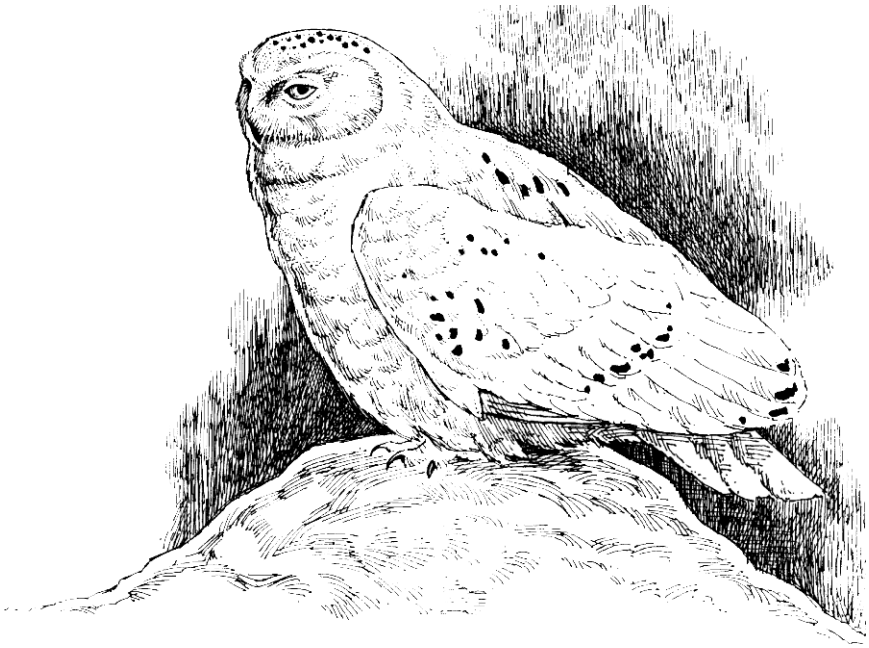

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Agder naturmuseum og botaniske hage

Norsk Ornitologisk Forening

NINA Norsk institutt for naturforskning

SUMMARY

In July 2012, a field expedition to the Yugorskiy Peninsula in northern Russia was carried out in cooperation between Russian Research Institute for Nature Protection and the Norwegian Snowy Owl Project (NOF, NINA, ANM). The area was revealed on the background of locations from satellite transmitters on snowy owls marked in Norwegian breeding areas in 2011. Five nests of snowy owls were found during the expedition and information on their breeding habitats and ecology were gathered. Catching attempts were carried out on four breeding sites. Due to a variety of difficult circumstances, only one female snowy owl was successfully caught and equipped with satellite transmitter.

CONTENTS

1. INTRODUCTION

The Snowy Owl *Bubo scandiacus* is considered as a relatively common Arctic bird species. However, its biology is poorly known and studied in European Russia. Until now, there is little exact data on distribution, numbers, breeding biology, migration routes or wintering grounds of birds living within the Russian sector of the Barents Sea region. Nothing is known about possible impact of global warming on snowy owl populations.

The Norwegian Snowy Owl Project, run by NOF, NINA and ANM, have been catching and tagging snowy owls in Norway for several years. In 2011 twelve birds were tagged in the breeding grounds in northern Norway. Two of these 12 owls, named Gary (male) and Gabba (female), were located in Yugorskiy Peninsula (European Russia) in summer 2012. According to the data received from the satellite transmitters, both the male and the female kept to small well-defined patches of territories which made us suspect that they were breeding there.

To check that assumption and carry on further investigations, a field expedition with the aim of tagging snowy owls in European Russian tundra in the frame of bilateral Norwegian-Russian agreement on nature conservation in Barents Region was carried out by a Russian scientific team lead by Vladimir Morozov (Russian Research Institute for Nature Protection). An expedition to the European Russian tundra was organized in order to look for the snowy owls tagged in Norway and to catch other individuals that could breed within the same area and fit them with transmitters. From the Norwegian side, Norwegian Directorate for Nature Management (DN) have rendered financial support to the field work and the NOF/BirdLife Norway has administrated and coordinated the expedition as part of the Norwegian Snowy Owl Project (NOF, NINA, ANM) and supplied the Russian team with a remote-control bow-trap and four satellite transmitters.

2. STUDY AREA AND METHODS

2.1.1 Aim and objectives

The main aim of this project is to tag snowy owls in their breeding grounds in European Russian tundra to gather more relevant information on numbers and density, migration routes, staging areas and wintering grounds and threats faced by snowy owls breeding in the European part of Russia.

The following objectives were established:
– to organize and carry out field work within breeding areas of Snowy Owl in the Eastern European tundra of Russia.
– to catch snowy owls and tag them with satellite transmitters.

2.1.2 Itinerary

The field work lasted from 10th of July till 20th of July 2012 on the Yugorskiy Peninsula.

2.1.3 Participants

Three persons: Vladimir V. Morozov (coordinator) from Russian Research Institute for Nature Protection & Birds Russia (Moscow), Alexander V. Sharikov from Moscow Pedagogical State University and Mikhail N. Ivanov from State Timiryasev Biological Museum (Moscow).

2.1.4 Study area

The study area is located in the Yugorskiy Peninsula (Pay-Khoy Ridge) within upper Khey-Yakha River basin in Nenets Autonomous District (Figure 1). The location of the center of the study area is 69°04' N, 62°57' E.

Figure 1. Location of study area

This area is a large hollow situated near the origin of Khey-Yakha River. The hollow is surrounded by stony hills and small mountains of Pay-Khoy Ridge. Their altitude varies between 235 and 320 masl.

A hilly landscape is typical of the study area (Figure 2). Khey-Yakha River, its tributaries and smaller creeks cross the area and break the watersheds into numerous groups of hills and ranges descending from mountains ridges to rivers and streams. Watersheds and hills of sufficient drainage are covered with dry tundra of *Dryas punctata* and dwarf willows (*Salix polaris, S. arctica*), different sedge species (*Carex* sp.), mosses and lichens (Figure 3). Wet sedge-mosses tundra, willow and sedge grasses or cotton grasses bogs prevail where drainage is poor. The height of the willow shrubs on such bogs and wet tundras is no more than 30 cm (Figure 4). The same bogs occupy the flat bottoms of creek valleys and banks of thermocarst lakes (Figure 5).

Figure 2. Landscape of the study area.

Figure 3. Dry dwarf shrub tundra.

Figure 4. Wet boggy tundra with willow shrubs.

Figure 5. Lake's hollow.

Figure 6. Field camp.

In search of nests of snowy owls radial routes from the camp (Figure 6) were carried out. The total size of investigated territory is 110 sq. km. Nest locations (Figure 7) and distances between nests were defined with GPS.

Lemmings and voles numbers was estimated indirectly by presence and numbers of winter nests, visual records of rodents, density of theirs holes and feeding paths.

Adult snowy owls were caught on the nests with a remote-controlled bownet. Because snowy owl chicks were big and females did not brood them, we used manual method for catching according to instructions received from BirdLife Norway and descriptions on the attached CD. Arcs of the trap were camouflaged with grass, mosses and anything available (Figure 8).

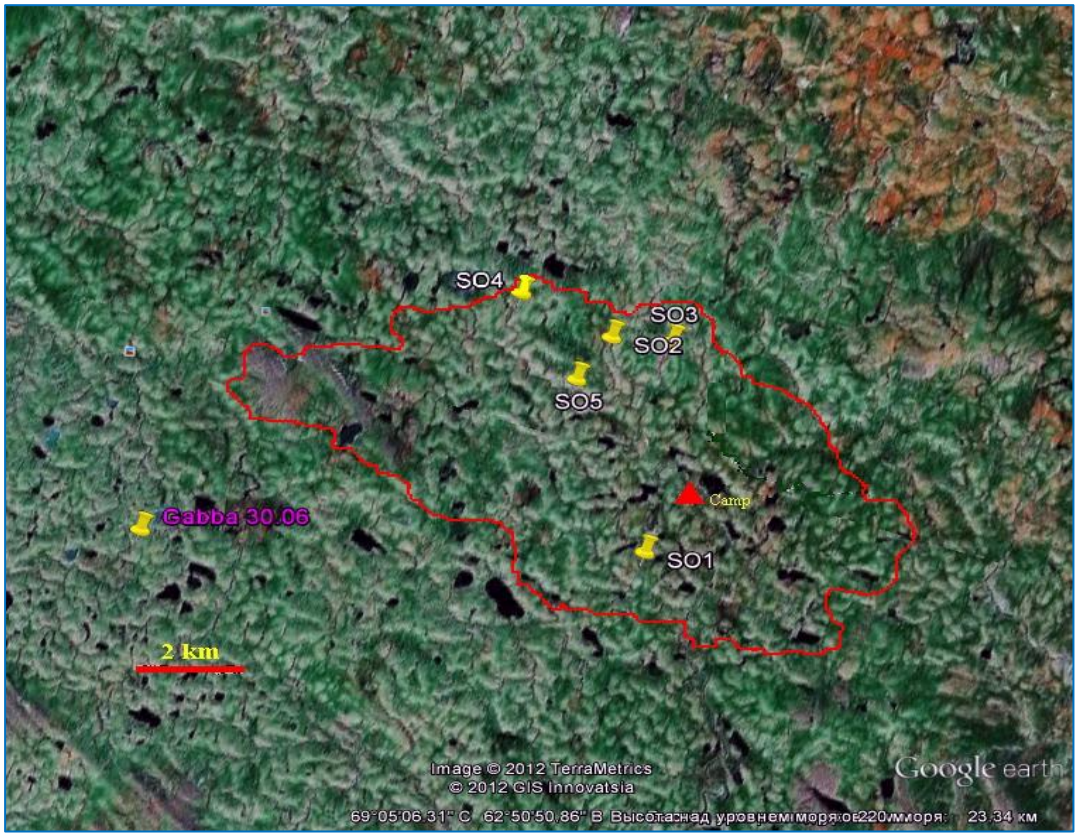

Figure 7. Areas of catching and satellite tagging of snowy owls (SO1-SO5 = locations of nests)

Figure 8. Camouflaged trap with chick inside.

3. RESULTS

3.1. Distribution of snowy owls

Distribution of snowy owls in the study area was very irregular in 2012. Up to 13 individuals located no more than 3-4 km from the observer could be spotted simultaneously from one point. Most of those owls were non-breeding birds. Females prevailed among them. The number of snowy owls fluctuated from day to day. For example, on July 12th, we counted 2 breeding pairs and 9 non-breeding individuals from the edge of a gully, and 7 which were located within a small area of about 4 km^2. On July 14th, only 2 non-breeding owls were counted from the same point, and on July16th only one male was spotted. On July18 th we observed 6 non-breeding snowy owls on the Upper Khey-Yakha hill (320 masl.) and 5 of them were sitting close to each other between stones at the edge of the snow field at a foot-hills of mountain range (Figure 9).

Figure 9. Non-breeding wandering snowy owls at the mountain's foot-hill, 18th of July.

These observations are indicative of sufficient mobility of adult owls in summer. Probably those wandering owls did not breed at all, or they had started nesting but it was unsuccessful. Having lost their clutches or broods they probably abandoned their territories and started migration.

Figure 10. Nest of Snowy Owl with 5 chicks (SO2), 12 th of July.

Figure 11. Habitat where nest of Snowy Owl with 5 chicks (SO2) was situated, 12th of July.

The distribution of five nests found was irregular within the study area. Four nests were located within no more than 20 km^2 (Figure 7). Maximal distance between neighboring nests was 6.16 km, minimal distance was 1.48 km.

3.2. Breeding success

Numbers of the downy young varied from 2 to 5 (Table 1 and Figures 10-12). Dead chicks or their remains were found in three nests (Figures 13-14). Younger chicks died from starvation. The youngest chick of nest SO2 died on July 14th at night. The other one of the same nest died in the morning on July 17th. There were no losses of chicks in other snowy owls nests. So, at the end of field work (20th of July) the average size of Snowy Owl brood was 2.4 ± 0.22 (*n* = 5).

Figure 12. Nest of Snowy Owl with 2 chicks (SO4), 15th of July.

Table 1. Information on snowy owl nests

No. of nest	SO1	SO2	SO3	SO4	SO5
Date	12 July	12 July	14 July	15 July	16 July
Co-ordinates	69°03'22.2" N, 62°56'18.7" E	69°06'21.2" N, 62°52'14.6" E	69°06'33.0" N, 62°54'28.0" E	69°06'37.0" N, 62°48'26.1" E	69°05'35.6" N, 62°51'33.4" E
# of living chicks	2	5	3	2	2
# dead chicks/ remains	2		1		1
Ring numbers	pull.: Moscow A-104963, A-104965; Ad. Female: A-104967 & PTT-93716	pull: Moscow A-350201–350203	pull: Moscow A-104975, A-104982 & A-105000	pull.: Moscow A-350204–350205	pull.: Moscow A-350206–350207

Figure 13. Nest of Snowy Owl with one dead chick (SO5), 16th of July.

Figure 14. Remains of two chicks of snowy owl and goslings brought as prey to the nest SO1, 13th of July.

3.3. Diet of snow owls

In the summer 2012 the diet of snowy owls consisted of four mammal species and three bird species. The overall main prey species was Siberian Lemming (*Lemmus sibiricus*) and vole (*Microtus gregalis*). Other mammal species were: *Microtus oeconomus* (10%), *Microtus gregalis* (7.6%).

Birds: Geese (Anser sp.) - 9 specimens (pulli), small passerine sp. (not identified) - one specimen, Willow Grouse *Lagopus lagopus* - 3 specimens.

Incidences of cannibalism were obtained as well. Pellets collected at two nests contained bones of snowy owl chicks. Dead chicks lying at the nest cup always disappeared after some days.

3.4. Catching of snowy owls

During all days from 13th to 19th of July we tried to catch adult snowy owls and we put up trap at four different nests. Most of our attempts were unsuccessful because females did not land and did not come into the trap. Usually, the female with rodent in the bill landed besides the trap and called the chick to her. Females usually did not attempt to walk to chick beside one. One female receiving a lemming from the male, did subsequently land directly in the center of the trap to her chicks. She was caught, ringed with metal ring and fitted with a satellite transmitter with solar panel (Figure 15.). Ring number is Moscow A– 104967, satellite transmitter is No. 93716.

Figure 15. Alexander Sharikov with caught female of Snowy Owl from the nest SO1, 13 of July.

3.5. Threats

We did not find any serious threats for the breeding local population of Snowy Owl in the study area. Herds of domestic reindeer went through study area in the beginning of July, but all nests of snowy owls survived. There were several families of Arctic Fox *Alopex lagopus* with cubs in the study area. However, they coexisted peacefully with snowy owls. There are no Golden Eagles *Aquila chrysaetos* in the Yugorskiy Peninsula. Gyrfalcon *Falco rusticolus* breeds in Yugorskiy Peninsula, but its density is very low and breeds only those seasons when the density of Willow Grouse *Lagopus lagopus* is high. In summer 2012 the density of Willow Grouse was very low in the Yugorsky Peninsula, therefore Gyrfalcon did not breed and we had neither any records of that species.