

## FINAL REPORT

**AWARDEE:** Irina S Trukhanova

**Project region:** Russian Federation

**Amount awarded:** \$1,800

**Period:** September 2020-August 2021

**Title: Change is real: assessing the impact of the first ever witnessed ice-free winter on Ladoga ringed seal reproductive success.**

### **Project summary:**

The project aimed to assess the impact of warming climate on reproductive success of Ladoga ringed seal by studying pup strandings, recording female-pup behavior in atypical breeding and nursing habitat, and determining heavy metal residue concentrations in stranded pup hair samples.

### **Results of the project:**

1. We have collated and analyzed freely available satellite data to determine parameters of the ice conditions on the Lake Ladoga for the past 20 years. We placed the winters 2019-2020 and 2020-2021 in the context of the previous years to determine the relative quality of breeding conditions for the ringed seals in these two years.
2. We explored the coastline of a number of islands on the Lake Ladoga in the spring and summer 2021 searching for stranded seals and recorded their locations.
3. We collected hair samples from a) stranded seal pups and adults; b) live stranded pups admitted to rehab facility c) newborn pups killed in the lairs by predators. The samples were analyzed to determine concentrations of 14 heavy metals. The results were compared with the available reference values for Ladoga ringed seal in early 1990-2000s.
4. The manuscript is currently being prepared for based on collected data.
5. Due to typical ice conditions in the winter 2020-2021 we were unable to find any atypical (terrestrial) breeding locations for the ringed seals and received no reports of such behavior being observed in the region this past season.

### **Future work:**

1. Publication of the manuscript in a peer-reviewed journal.
2. Presentation of the project results at professional conferences.

### **Expense report:**

The SMM grant was spent according to the originally proposed budget. 14 Ladoga ringed seal hair samples were analyzed at a commercial laboratory (Total cost \$800). Boat expenses to access remote island on the Lake in search for stranded animals were covered in the amount of \$1000.