

## Project Update: January 2018



Project works started in June and July 2017. To reach the area of field work project team cover 1000 km by road and were surprised by unusual weather conditions of the year. We took 4WD car and as expected we should going to drive throughout plane tundra by routes but at that time it was still a lot of snow and some lakes were covered by ice (*photo. 1*).



*Photo 1: June 27. View from the car window, (t-5°C). Photo 2: July 5. Crossing the creek at the route, (air t -23°C).*

It was absolutely impossible to get off the main road even on 4WD car and use vehicle for movements. This circumstance did not interrupt our expedition but brought some difficulties. Thus, all of our routes have been hiking. The most difficult task was crossing rivers and streams (*photo. 2*), the widest one we had to swim at a water temperature of 4-5 degrees. The study area for this expedition lies in the vicinity of the villages Teriberka, Tumanniy, Dal'nie Zelentsy.

One of the features of arctic fox behavior it is permanent usage of dens. Number of entrances increasing each year, sometimes reach 35-40 and even up to 100d. Task list of the expedition included search and checking such breeding sites. During the fieldwork, we checked several dens. These dens were found 15 years ago by our

Swedish colleagues and its coordinates were kindly handed to us by Love Dalén. Our first base camp stood under the rush of cold north wind, fog and rain (photo. 3).



Photo 3: June 27. Base camp # 1, ( $t -5^{\circ}\text{C}$ ).



Fig 1: Hiking routes and checked densities at first location. Fig 2: Hiking routes and checked densities at second location.

During our hiking routes in this first location were examined five den locations (fig. 1). One was fully covered by snow 1 m high and not used by animals (photo. 4).

Only three colonies had a signs of animal visits but without any evidence of breeding in this season. Seventeen samples (scats) were collected here for DNA analysis. One den probably was used by red fox. Photo traps did not fixed arctic fox at all dens. All five colonies looked decrepit and the most of entrances were destroyed. After checking this location we changed our base camp and weather became summer like.



In this location to get to the colonies, survey them and return back it took 3 days to go on foot (fig. 2). One colony totally vanished. Other one with one entrance probably was used by red fox. The third colony had signs of the Arctic fox visits, five entrances were abandoned and only one was used by the animals. The last colony in past was the most inhabited and large one, was half flooded (photo. 5), however there were arctic foxes but without puppies.



*Photo. 4. June 29. Den site under the snow, ( $t -10^{\circ}\text{C}$ ). Photo 5: July 2. Half flooded inhabited den, ( $t -17^{\circ}\text{C}$ ).*

Our small surveys don't let us to conclude about exact reasons of degradation of all these dens. Late, cold summer, depression of small mammals' populations or anything else had could effect on the condition of arctic fox population and observed colonies.

Any way 15 years ago all situation and state of the arctic fox colonies were much better. Local people also came to opinion that arctic fox population goes down rapidly during last decade. Weather changed our field plans for season 2017. Thus, most of the fieldwork will be completed in June 2018. A meeting with reindeer herders is planned for February 2018. These people spend most of their lives in the tundra where they have the opportunity to observe all the representatives of wild fauna.