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### Amphibian biodiversity in Yakutia: The coldest region of the Earth

K S Solomonov<sup>1</sup>, V T Sedalishchev<sup>2</sup>, T N Solomonova<sup>2</sup> and R A Kirillin<sup>1,2</sup>

<sup>1</sup>North East Federal University, Russia

<sup>2</sup>Russian Academy of Sciences, Russia

Yakutia is home to four species of amphibians- Siberian salamander (*Salamandrella keyserlingii*) and 3 frog species: Siberian frog (*Rana amurensis*), Moor (*R. arvalis*) and the Far East (*R. chensinensis*). Of these, Siberian salamander and frog inhabit the entire forest area and forest-tundra where they form a stable population, penetrating into the tundra to 72° and 71° N. *Rana arvalis* and *R. chensinensis* live in the southern part of Republic Sakha (Yakutia): the first one in the Lena Valley and in its small tributaries to 60° N and the second one - in the Aldan River basin, also up to 60° N. The number of these two species is low everywhere. Since the end of XIX century, scientists wonder how amphibian, in particular, the Siberian salamander, this poikilothermal animal with thin and moist skin can survive the winter in a cold pole in Verkhoyansk. Siberian salamander and Siberian frog have a number of environmental, physiological and biochemical adaptations that allow them to survive and achieve relatively high abundance. These include the ability to maximize the micro-climatic features of populating the area, their omnivorous ability, a relatively high proportion of aquatic invertebrates in the diet, high fertility and the rate of development in the northern parts of the area with twenty-four -hour sunlight, high levels of food reserves, especially glycogen in the liver. Glycerol in the liver is the major cryoprotectants which preserve the body from freezing even at temperature up to minus 35 - 37°C in the wintering grounds. The two species of amphibians are observed for two strategies of survival in winter: Siberian salamander hibernates on land under tree roots, decaying fallen trees, under the forest litter and grass litter. It is a strategy of increased frost-resistance. Siberian frogs as well as other frog species uses frost -avoiding strategy by making wintering concentrations under ice in water bodies where the ambient temperature during the winter remains positive. This is a typical frost -avoiding strategy, although it should be said that the strategy of increasing of the resistance to cold is working in frogs as well.

sks.inside@gmail.com