

Climate change is an important factor that influences the distribution of species, including parasites. External parasites, such as ticks and fleas, not only affect the condition of their hosts, but are also vectors of numerous blood parasites. External parasites are widespread, and are even found in regions as remote and isolated as the Antarctic. Ongoing climate change affects the spread of parasites, and may increase their expansion in the far south. If so, this would have an impact on the condition and abundance of the unique fauna inhabiting Antarctica. The aim of this project is to compare the extent of infection with selected ectoparasites and the blood parasites they carry in three species of penguins – Adelie penguins, gentoo penguins, and chinstrap penguins – all of which inhabit the South Shetland Islands. The ectoparasite (tick) density will be estimated on the basis of the collection of questing ticks from the environment around the penguin breeding colonies. Both traditional microscopic methods and modern molecular biology techniques, including next-generation sequencing, will be used to study the genetic diversity of penguin blood parasites and their vectors. The obtained results will allow the distribution, genetic diversity and the prevalence of the parasite infestation in the population of penguins inhabiting West Antarctica to be estimated.