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Abstracts

Helminths of northern fur seals (*Callorhinus ursinus*) from St. Paul Island, Alaska: analysis of the parasite biodiversity and community structure

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Northern fur seals (*Callorhinus ursinus*) (NFSs) are one of the most recognized marine mammal species in the North Pacific. The population of NFSs has been dramatically decreasing over the last 40–50 years. This decline has been thought to be connected with over-fishing in the Bering Sea and the North Pacific. Decreasing of the NFS population does have an influence on the whole marine ecosystem in the region. Parasites from different groups (nematodes, cestodes, trematodes and acanthocephalans) and their communities in NFSs can be considered as the indicators of these ecological changes. The purpose of our study was to analyze the current status of the species diversity and structure of the parasite community of the gastrointestinal helminths in NFSs.

Our studies were carried out during four consecutive years in July–August of 2011–2014 on St. Paul Island, Alaska. Gastrointestinal tracts of 756 NFS males were collected from five rookeries during the annual Aleut subsistence harvests. All helminths (n=27,169) were collected manually, fixed in 70% non-denatured ethanol and identified using morphological criteria.

All NFSs examined were infected with one or more species of gastro-intestinal helminths (prevalence = 100%); from 1 to 10 helminth species (average 4.3 ± 1.8) were found per one seal. Twenty-one helminth species from four taxonomic groups (Classes Trematoda, Cestoda, Nematoda and Phylum Acanthocephala) were found. Tapeworms (Cestoda) were the most prevalent group of helminth (prevalence = 98.5%); *Adenocephalus pacificus* was the dominant species (prevalence = 97.2%), *Diplogonoporus tetrapterus* (prevalence = 43.6%) and *Anophryocephalus ochotensis* (prevalence = 0.6%) were also found. Nematodes were documented in 91.9% NFSs; two species from the genus *Pseudoterranova* (*P. decipiens* and *P. azarazi*) together were found in 84.2% seals. Three more species: *Contracaecum osculatum* (prevalence = 45.5%), *Anisakis simplex* (prevalence = 43.6%) and *Phocascaris cystophorae* (prevalence = 5.5%) were also found. Acanthocephalans were found in 47.3% of the seals. Totally, 8 species from two genera – *Corynosoma* (*C. alaskensis*, *C. strumosum*, *C. cameroni*, *C. semerme*, *C. similis*, *C. validum*, *C. villosum*) and *Bolbosoma* (*B. nipponicum*) were documented; Corynosoma strumosum had the highest prevalence=24%. Trematodes were documented in 31.6% NFSs; totally, 4 species (*Apophallus zalophi*, *Galactosomum ubelakeri*, *Nanophyetus salmincola* and *Phocitrema fusiforme*) were found.