Marine Ecology of Arctic and Pacific Lampreys

### **Requester:** Trent Sutton ([tmsutton@alaska.edu](mailto:tmsutton@alaska.edu); 907-474-7285)

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## General Information

**2022 GF Eastern Bering Sea Shelf, Northern Bering Sea, Aleutian Islands**

* *Is this a new or a repeat collection?:* repeat
* *Collection type:* Biological specimen
* *Project Funding Source:* External to NOAA (non-profit, graduate studies)
* *Is this project funding extra sea days?* no
* *Is this project funding fuel costs?* no

**Project Description and Justification:** Current knowledge of host/prey fishes for Arctic and Pacific lamprey is based on geographic distribution of these two parasitic species relative to other potential fish hosts and the identification of lamprey marks/wounds on hosts. However, these approaches assume that hosts and parasites always co-occur in time and space and that hosts survive a parasitic event. Because it is unlikely that these two assumptions are always met, there is interest in evaluating other approaches for the positive identification of lamprey hosts. For this project, we would like to evaluate the contents from the digestive tracts of adult Arctic and Pacific lampreys to determine the potential for using genetic characteristics of consumed blood and/or tissues as well as hard structures (e.g., scales, otoliths, etc.) to identify fish hosts. The objective of this research will be to determine if using a combination of consumed blood, tissues, and hard structures from the digestive tracts of adult Arctic and Pacific lamprey will allow for the positive identification of their fish hosts/prey. This project will build upon lamprey samples that we have been collecting over the past several years.

## Detailed Collection Procedures

**Detailed Collection Procedures:** Adult lampreys (no more than 200 individuals from each species) will need to be removed from trawls following capture, frozen immediately after capture and maintained frozen until shipping.

**Subsample Selectively:** [None]

**Estimated time:** 10 minutes

## Biological Collection Details

* *Species To Be Collected:* fish - Lethenteron camtschaticum, Entosphenus tridentatus
* *Type of specimen to collect:* whole animal collection
* *Specimen-level data to collect:* length;weight
* *Specimen preservation method:* freeze

## Sampling Design Details

**Target Quantity:** 10 - 200

**Will the request still be useful if the requested amount or frequency of specimens collected is not achieved?** yes

**What is the sampling protocol:** DO NOT SUBSAMPLE: collect every one that comes up in the net

**Criteria for sub-sampling if selective or stratified sub-sampling:** [None]

## Geographic Region of Collection

**Survey:** Eastern Bering Sea Shelf, Northern Bering Sea, Aleutian Islands

**Place keywords:** [None]

**Bounding coordinates**

* *Northern Boundary:* [None]
* *Southern Boundary:* [None]
* *Eastern Boundary:* [None]
* *Western Boundary:* [None]

## Chemicals, Supplies, Equipment, and Shipping

**Project Chemicals:**

* *Formaldehyde solutions:* [None]
* *Ethanol solutions:* [None]
* *glycerol/thymol:* [None]
* *DNA buffer (DMSO/EDTA/NaCl):* [None]

**Project Supplies:**

* *Supplies provided by the AFSC:* [None]
* *Supplies provided by the requester:* No special supplies required other than plastic bags for lampreys.

**Detailed Shipping Instructions:** None, just ship frozen (Goldstreak) or hold for pickup

**Permits issued or pending:** No additional permits are required for this sampling