

 <p align="center">SCIENTIFIC RESEARCH AND COLLECTING PERMIT</p> <p align="center">Grants permission in accordance with the attached general and special conditions</p> <p align="center">United States Department of the Interior National Park Service</p> <p align="center">Sitka</p>	<p>Study#: SITK-00008</p> <p>Permit#: SITK-2022-SCI-0004</p> <p>Start Date: Jul 01, 2021</p> <p>Expiration Date: Dec 01, 2023</p> <p>Coop Agreement#:</p> <p>Optional Park Code:</p>
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<p>Name of principal investigator:</p> <p>Name:Ms Olivia Magni Phone:9077135309 Email:Olivia_Magni@nps.gov</p>
<p>Name of institution represented:</p> <p>NPS - Sitka National Historical Park</p>
<p>Additional investigators or key field assistants:</p>
<p>Study Title:</p> <p>Estimation of Escapement and Stray Rates of Pink and Chum Salmon into the Indian River, Sitka National Historical Park</p>
<p>Purpose of study:</p> <p>Sitka National Historical Park is implementing a study with the intent of better understanding the rate of straying of pink and chum salmon from the Sheldon Jackson hatchery (SJH) into the Indian River. In 2012 the percentage of fish thermally marked as originating in the SJH that spawned in the Indian River varied between 3% and 8%, and in 2019 varied between 0% and 97% depending upon the sampling period. The goal of this study is to supplement existing sampling by SJH and evaluate if the timing of sampling changes the inference of rates of straying, quantify escapement, and document incidences of pre-spawn mortality of Indian River pink and chum salmon.</p>
<p>Subject/Discipline:</p> <p>Fish / Ichthyology</p>
<p>Locations authorized:</p> <p>Pink and Chum salmon carcasses will be surveyed for biological data in Sitka National Historical Park in the Indian River. Six transects, three above and below the pedestrian footbridge, will be sampled for biological data including sex, length, pre-spawn mortality, and otoliths. Otoliths will be extracted each week from 60 pink and chum salmon for a total of 120 sampled fish. Adipose fin clip will be sampled by noting the full/partial absence of adipose fin due to hatchery origin. Length of salmon will be determined by placing snout of fish to the end of length board and measuring the post hypural length to the nearest millimeter; length will be measured in this way due to caudal fin fray as due to spawn. Pre-spawn mortality will be recorded by the presence or absence of eggs. Estimates of egg retentions in carcasses will not recorded. For example, "50% of eggs were spawned". The surveyor will only record the presence or absence of prespawn mortality. In this study, presence of prespawn mortality is defined as the remainder of all or mostly all the eggs (75% >).</p>
<p>Transportation method to research site(s):</p> <p>Sites are easily accessible from Sitka National Historical Park trails (Totem Loop, Russian Memorial Loop, and River View Trail). Surveyors will navigate to transects using a Garmin 76SXC or by using a georeferenced map produced on the Tab Active 2.</p>
<p>Collection of the following specimens or materials, quantities, and any limitations on collecting:</p> <p>The percentage of field collections from 2021, 2022, and 2023 to be processed to be determined by principal investigator. To the extent not all otoliths collected are destroyed in analysis, those field collections are to be processed for permanent storage within the Sitka NHP museum collection.</p>
<p>Name of repository for specimens or sample materials if applicable:</p> <p>Repository type: Will be destroyed through analysis or discarded after analysis</p> <p>Objects collected:</p> <p>Otoliths are extracted from senescent dead pink and chum salmon in SITK, and in the field, otoliths are paired with a unique 3-digit code corresponding to the specimens metadata which includes data, time, transect #, species, sex, length, incidence of prespawn mortality, and fish origin (hatchery or natural).</p> <p>"Alaska's PNP hatchery program has a history of active assessment and innovation. Hatcheries use either coded-wire-tag or otolith marking (or both) to mark releases. During the fishing season, the catch is sampled to measure the magnitude of wild and hatchery stock returns; allowing fisheries managers to manage wild stock escapement goals. Hatchery release sites are located such that, if</p>

fishery managers need to restrict fishing in the traditional wild stock fishing areas for conservation, the hatchery fish will pass through those areas to the hatchery release sites that are usually located in isolated bays where few wild stocks are present. At these release sites, hatchery stocks can be fully harvested with minimal impact on wild stocks.

Otolith marking, which was first implemented on a production scale in Alaska, changed all that. Thermal otolith marking is done by alternating warmer and colder incubation water over about a three to six-day period, usually during the egg stage. This procedure will lay down alternately dark and light rings on the fish's ear bone (called the otolith), similar to rings on a tree. Naturally spawned salmon will have less distinct marks that lack regularly spaced intervals. Fish can be marked with different patterns of thermal marks, allowing for stock separation among hatcheries or even release locations.

Today most of Alaska's PNP hatcheries otolith mark pink and chum salmon releases, and work cooperatively with ADF&G to assess the hatchery contribution to the catch during the season to provide ADF&G managers the information they need to manage for wild stock returns. Much of the king, coho and sockeye salmon releases are otolith marked as well."

Repository type: Permanently retained in National Park Service collection, maintained by NPS repository

Objects collected:

If otoliths are collected beyond those to be destroyed in analysis, they must be retained as a natural history collection within the SITK museum collection.

NPS General Conditions for Scientific Research and Collecting Permit (available at the RPRS HELP page) apply to this permit. The following specific conditions or restrictions, and any attached conditions, also apply to this permit:

- (1) Care shall be taken not to disturb any wildlife species (reptiles, migratory birds, raptors, or bats) found nesting, hibernating, estivating, or otherwise living in, or immediately nearby, worksites.
- (2) A Job Hazard Analysis shall be submitted for review to the park safety officer prior to the start of the project.
- (3) Any safety violations shall be corrected immediately. If the violation is not corrected immediately, the project shall be postponed until such corrections are made.
- (4) All official and non-official records created from this project (textual, electronic, audiovisual, or visual) shall be accessioned and cataloged in the parks archives collection.
- (5) Any archeological artifacts or natural history specimens recovered as a result of a systematic investigation shall be accessioned and cataloged into the parks museum collection
- (6) Although there is no surface evidence of archeological resources, clearance to proceed is recommended with the condition that if concealed archeological resources are encountered during project activities, all necessary steps will be taken to protect them and the Park Cultural Resources Manager will be notified immediately.
- (7) Equipment and materials staging areas will avoid known archeological resources.

Summary of permitted field methods and activities:

Beginning June 1, SITK biologist will walk the Indian River recording the number of live and senescent dead pink and chum salmon. Presence of senescent dead salmon commences biological sampling which includes species, sex, length, otoliths and prespawn mortality. Biological sampling will occur once a week at six locations along the Indian River: three above and below the pedestrian footbridge. A crew of Student Conservation Interns (3) will assist the Park's Biologist in biological sampling of senescent dead salmon throughout the duration of the run. GPS established transects for sampling locations provide an estimate of spatial variability, such as occupancy of fish above and below the pedestrian footbridge, can be attributed to each pair of collected otoliths. Trays of otoliths prepared on site will be packed into a cooler and shipped back to Juneau to the MARK lab. The Alaska Dept Fish and Game will also be provided with the metadata indicating the location of each otolith collection.

Recommended by park staff(name and title):

Reviewed by Collections Manager:

Yes _____ No _____

Approved by park official:

Date Approved:

Title:

Superintendent

I Agree To All Conditions And Restrictions Of this Permit As Specified
(Not valid unless signed and dated by the principal investigator)

Olivia Magni

(Principal investigator's signature)

04/29/2022

(Date)

**THIS PERMIT AND ATTACHED CONDITIONS AND RESTRICTIONS MUST BE CARRIED AT ALL TIMES WHILE
CONDUCTING RESEARCH ACTIVITIES IN THE DESIGNATED PARK(S)**



GENERAL CONDITIONS For SCIENTIFIC RESEARCH AND COLLECTING PERMIT

United States Department of the Interior
National Park Service

1. Authority - The permittee is granted privileges covered under this permit subject to the supervision of the superintendent or a designee, and shall comply with all applicable laws and regulations of the National Park System area and other federal and state laws. A National Park Service (NPS) representative may accompany the permittee in the field to ensure compliance with regulations.

2. Responsibility - The permittee is responsible for ensuring that all persons working on the project adhere to permit conditions and applicable NPS regulations.

3. False information - The permittee is prohibited from giving false information that is used to issue this permit. To do so will be considered a breach of conditions and be grounds for revocation of this permit and other applicable penalties.

4. Assignment - This permit may not be transferred or assigned. Additional investigators and field assistants are to be coordinated by the person(s) named in the permit and should carry a copy of the permit while they are working in the park. The principal investigator shall notify the park's Research and Collecting Permit Office when there are desired changes in the approved study protocols or methods, changes in the affiliation or status of the principal investigator, or modification of the name of any project member.

5. Revocation - This permit may be terminated for breach of any condition. The permittee may consult with the appropriate NPS Regional Science Advisor to clarify issues resulting in a revoked permit and the potential for reinstatement by the park superintendent or a designee.

6. Collection of specimens (including materials) - No specimens (including materials) may be collected unless authorized on the Scientific Research and Collecting permit.

The general conditions for specimen collections are:

- Collection of archeological materials without a valid Federal Archeology Permit is prohibited.
- Collection of federally listed threatened or endangered species without a valid U.S. Fish and Wildlife Service endangered species permit is prohibited.
- Collection methods shall not attract undue attention or cause unapproved damage, depletion, or disturbance to the environment and other park resources, such as historic sites.
- New specimens must be reported to the NPS annually or more frequently if required by the park issuing the permit. Minimum information for annual reporting includes specimen classification, number of specimens collected, location collected, specimen status (e.g., herbarium sheet, preserved in alcohol / formalin, tanned and mounted, dried and boxed, etc.), and current location.
- Collected specimens that are not consumed in analysis or discarded after scientific analysis remain federal property. The NPS reserves the right to designate the repositories of all specimens removed from the park and to approve or restrict reassignment of specimens from one repository to another. Because specimens are Federal property, they shall not be destroyed or discarded without prior NPS authorization.
- Each specimen (or groups of specimens labeled as a group) that is retained permanently must bear NPS labels and must be accessioned and cataloged in the NPS National Catalog. Unless exempted by additional park - specific stipulations, the permittee will complete the labels and catalog records and will provide accession information. It is the permittee's responsibility to contact the park for cataloging instructions and specimen labels as well as instructions on repository designation for the specimens.
- Collected specimens may be used for scientific or educational purposes only, and shall be dedicated to public benefit and be accessible to the public in accordance with NPS policies and procedures.
- Any specimens collected under this permit, any components of any specimens (including but not limited to natural organisms, enzymes or other bioactive molecules, genetic materials, or seeds), and research results derived from collected specimens are to be used for

scientific or educational purposes only, and may not be used for commercial or other revenue - generating purposes unless the permittee has entered into a Cooperative Research And Development Agreement (CRADA) or other approved benefit - sharing agreement with the NPS. The sale of collected research specimens or other unauthorized transfers to third parties is prohibited. Furthermore, if the permittee sells or otherwise transfers collected specimens, any components thereof, or any products or research results developed from such specimens or their components without a CRADA or other approved benefit-sharing agreement with NPS, permittee will pay the NPS a royalty rate of twenty percent (20 %) of gross revenue from such sales or other revenues. In addition to such royalty, the NPS may seek other damages to which the NPS may be entitled including but not limited to injunctive relief against the permittee.

7. Reports - - The permittee is required to submit an Investigator's Annual Report and copies of final reports, publications, and other materials resulting from the study. Instructions for how and when to submit an annual report will be provided by NPS staff. Park research coordinators will analyze study proposals to determine whether copies of field notes, databases, maps, photos, and / or other materials may also be requested. The permittee is responsible for the content of reports and data provided to the National Park Service

8. Confidentiality - - The permittee agrees to keep the specific location of sensitive park resources confidential. Sensitive resources include threatened species, endangered species, and rare species, archeological sites, caves, fossil sites, minerals, commercially valuable resources, and sacred ceremonial sites.

9. Methods of travel - Travel within the park is restricted to only those methods that are available to the general public unless otherwise specified in additional stipulations associated with this permit.

10. Other permits - The permittee must obtain all other required permit(s) to conduct the specified project.

11. Insurance - If liability insurance is required by the NPS for this project, then documentation must be provided that it has been obtained and is current in all respects before this permit is considered valid.

12. Mechanized equipment - No use of mechanized equipment in designated, proposed, or potential wilderness areas is allowed unless authorized by the superintendent or a designee in additional specific conditions associated with this permit.

13. NPS participation - The permittee should not anticipate assistance from the NPS unless specific arrangements are made and documented in either an additional stipulation attached to this permit or in other separate written agreements.

14. Permanent markers and field equipment - The permittee is required to remove all markers or equipment from the field after the completion of the study or prior to the expiration date of this permit. The superintendent or a designee may modify this requirement through additional park specific conditions that may be attached to this permit. Additional conditions regarding the positioning and identification of markers and field equipment may be issued by staff at individual parks.

15. Access to park and restricted areas - Approval for any activity is contingent on the park being open and staffed for required operations. No entry into restricted areas is allowed unless authorized in additional park specific stipulations attached to this permit.

16. Notification - The permittee is required to contact the park's Research and Collecting Permit Office (or other offices if indicated in the stipulations associated with this permit) prior to initiating any fieldwork authorized by this permit. Ideally this contact should occur at least one week prior to the initial visit to the park.

17. Expiration date - Permits expire on the date listed. Nothing in this permit shall be construed as granting any exclusive research privileges or automatic right to continue, extend, or renew this or any other line of research under new permit(s).

18. Other stipulations - This permit includes by reference all stipulations listed in the application materials or in additional attachments to this permit provided by the superintendent or a designee. Breach of any of the terms of this permit will be grounds for revocation of this permit and denial of future permits.