PACIFIC STATES MARINE FISHERIES COMMISSION POSITION DESCRIPTION

Title: **Underwater Camera and Fish Survey Biologist (16-802)**

Location: Seattle, Washington (98112)
Anticipated Start Date: December 1, 2016
Position Type: Full Year (12 months or more), Salary/Exempt
Benefits Eligible: Yes | www.psmfc.org/benefits
Salary Target: $5,000/month

Job Number: 16-802
How to Apply: Online at www.psmfc.org/careers
Closing Date: November 17, 2016 at 9pm PT

Group Definition: Fishery Biologists use professional knowledge and competence in the science of fishery biology to perform work: (a) developing, conserving, propagating, managing, and administering fishery resources; (b) evaluating the impact of construction projects and other socioeconomic activities that present potential or actual adverse effects on fishery resources and their habitat; and (c) producing and managing aquatic resources in their natural habitat and/or within facilities and systems that have been constructed for their benefit and public use.

Position/Project Specifics:

Traditional bottom trawl surveys are unable to access much of the rough seafloor habitat that is utilized by a variety of fish species. These difficult-to-sample grounds are especially prevalent in the Aleutian Islands in rocky nearshore habitats. These habitats are utilized as foraging grounds by endangered Steller sea lions. Stereo camera systems, dropped onto the seafloor or towed from a moving vessel, are increasingly being adopted to access these habitats. We will build and deploy a GoPro video camera system towed from a vessel-mounted winch. Analysis of video data has shown that it is possible to estimate abundance and species composition with this sampling tool using AFSC developed software (SEBASTES).

The platform for this study will be the NOAA MMI Steller sea lion ship-based studies in the Aleutian Islands. Transects will be conducted from the chartered vessel using a camera and winch system developed at the AFSC. In each study site, transects will be placed from shore toward deeper water in a stratified random design based on depth and substrate strata whenever this information is available. Video data will then be analyzed using the AFSC developed software SEBASTES. Fish will be counted, measured and identified to species or species groups and associated habitat will be defined. Using stereo techniques, area swept will be estimated and abundance and fish density determined by species or species group. This information will be used to create models of nearshore fish distribution and abundance in the central and western Aleutian Islands.

Travel and sea time will be required for this work. Successful candidate will:

- build and maintain underwater stereo camera systems, including camera, lighting and mechanical systems required for operation

- participate in NMFS chartered scientific cruises during which the underwater stereo camera system will be deployed
- maintain and deploy oceanographic sampling equipment (i.e. CTD, MBT)
- analyze imagery collected at sea for species and habitat characteristics
- summarize patterns in distribution and abundance of fish and habitat using R software
- create models of nearshore fish distribution that utilize collected date (substrate, habitat, biological, and oceanographic measurements) using R software
- summarize findings in a scientific manner for publication in a final report

*****This position requires a valid driver's license and all offers of employment will be contingent upon passing a driving record check.**

Essential Functions: Included in this band are professional positions that perform recurring assignments ranging from moderate difficulty where conventional or straight-forward biological concerns are encountered to complex assignments where specialized knowledge and demonstrated competence in advanced techniques are required. (The functions listed below are characteristic of the type and level of work associated with this group and pay band. They are not all-inclusive. Individual positions may perform some or all, as well as other similar work.)

At the lower end of the range, Fishery Biologists have a solid working knowledge of established scientific methods and techniques to perform recurring assignments of moderate difficulty. Methods and techniques are well established, apply to most situations, and do not require significant deviations. Resource planning reports generated by employees at this level involve conventional biological concerns. Reports generated may be short-range management plans or portions of annual work plans. Lower range work examples include:

- Develop underwater camera tools to estimate fish abundance and habitat affiliation of fish species in untrawlable grounds in Alaska waters. Design and conduct underwater camera surveys and analyze video footage to estimate relative fish abundance and habitat affiliation in areas surveyed. Summarize findings in scientific reports and peer reviewed publications.

At the upper end of the range, the Fishery Biologist has specialized knowledge and demonstrated competence in advanced techniques of a complex area of fish biology sufficient to serve as a troubleshooter or specialist. The employee is competent to modify or adapt standard techniques, processes and procedures, and to assess, select, apply precedents and devise strategies and plans to overcome significant problems related to species production, protection, habitat restoration, or program management and evaluation. Planning reports generated by employees at this level assess the impact of various multi-faceted management or public practices on a resource. Upper range work examples include:

- Plan, design and implement research studies on fish abundance and habitat affiliation in Alaskan waters. Develop research tools such as underwater cameras to access nearshore fish abundance and habitat affiliation in untrawlable grounds.
- Prepare reports and scientific publications summarizing research projects as products for research grant projects.
- Write publishable reports of research and project findings.

Knowledge Required by the Position:

- Knowledge of fishery biology (including knowledge of particular species of fish).
- Knowledge of survey design and survey parameter estimation.
- Knowledge of fish reproductive biology and life history.
- Knowledge of underwater camera design and methodology.
- Knowledge of scientific method.
- Knowledge of sampling protocols.
- Knowledge of Windows-based computer applications such as:
    - Word processing
    - spreadsheets
    - e-mail
    - publishing software
    - presentation software
    - database software
    - topographic software
    - bibliographic software
    - statistical analysis packages.
- Knowledge of technical writing protocols.
- Knowledge of advanced statistical analysis and mathematics.

Additional Mandatory/Desirable Skills:

- *M - able to swim*
- *M - lift 40-50 lbs.*
- *M - live at sea on research vessel*
- *M - underwater video camera*
- *M - written communication skills*
- *M - oral communication skills*
- *M - valid driver's license*
- *M - specific software (spreadsheet, word processing, database management, GIS, statistical analysis, behavioral analysis, bibliographic)*
- *M - using fish keys*
- *M - fish species ID skills*
- *D - habitat typing*
- *D - habitat monitoring*
- *D - literature search/review*
- *D - operate nets (seine, gill, etc.)*
- *D - CPR/First Aid*
- *D - survival training*

Supervisory Controls:

The supervisor establishes overall goals and resources available. The employee and the supervisor confer on the development of general objectives, projects, work to be done, and deadlines.

The biologist is responsible for planning and executing assignments, selecting appropriate techniques and methodology, and determining the approach to be taken. The biologist is expected to resolve most

problems that arise and coordinate the work with others, as necessary. The supervisor is kept informed of progress, concerns, issues or other matters having far-reaching implications. Completed work is reviewed for adequacy in meeting program or project objectives and expected results.

Guidelines:

A number of general guidelines are available, and broad objectives have been established. The employee uses judgment in determining which appropriate alternatives should be used, in interpreting and adapting guidelines to specific situations or problems, analyzing results, and recommending changes.

At the lower end of the range, for work that is outside the guidelines or not easily adapted from existing guidelines, the biologist may develop or modify procedures and protocols after consulting with the supervisor. At the upper end of the range, the biologist is frequently required to deviate from or extend traditional methods and practices to develop essentially new techniques or propose new guidelines so as to obtain more effective protocols.

Complexity:

At the lower end of the range, the employee selects and applies conventional approaches and precedent solutions according to the specific conditions of each assignment. Different and unrelated process and methods exist.

At the upper end of the range, the assignment may require the employee to relate new work situations to precedent situations, extend or modify existing techniques, or develop compromises when it is necessary to modify an accepted method or approach. The work requires the biologist to identify independently the boundaries of the problem involved, the kinds of information needed to solve the problem, and the criteria and techniques to be applied in accomplishing the assignment.

Scope and Effect:

The work involves projects, assignments, or research related to developing underwater video cameras t6o survey untrawlable grounds in areas of Groundfish abundance in Alaska waters, mostly focused in the Aleutian Island subarea. This work is conducted close to Steller sea lion rookeries to examine the prey field available to Steller sea lions while foraging near rookeries and haul outs. This work involves the development of underwater camera systems as well as the survey design, execution and analysis of underwater video footage.

Physical Demands:

Demands generally range from sedentary to moderate -- where there is walking, climbing stairs and ladders, reaching, lifting, bending, or extended periods of standing. Some Fishery Biologists in this range have rigorous physical demands where they must be able to handle buckets of water or gear weighting 40-50 pounds, engage in long daily periods of standing and working on vessels at sea in a variety of weather conditions.

Work Environment:

Some work is performed in an office setting with adequate lighting, heating and ventilation. Some work may be performed in a laboratory setting which exposes the biologist to odors, chemicals, fish blood, and molds. The employee must use safety precautions including MSDS, gloves, hood, and eye protection. Some employees may work on narrow, elevated walkways and platforms that are over or adjacent to water. Field work involves exposure to all types of weather, slippery rocks or docks, trails, irregular terrain, insects, poison oak, rough or fast-moving water, or cold water temperatures. Work at high elevations or aboard boats may be required. The position may require going to sea aboard research vessels with spartan working and living conditions.

Minimum Qualification Requirements:

Preference will be given to qualified candidates displaying successful completion of a Master's level program in Biological sciences with an emphasis in aquatic and/or fishery studies and one year of experience related to the requirements of the position, **OR** those that present completion of three years of progressively higher level graduate education leading to a Ph. D. degree or equivalent doctoral degree in fields related to the position.

A range of education and experience may be presented. At the lower end of the range, candidates must present successful completion of a full 4-year course of study in an accredited college or university leading to a bachelor's or higher degree that included a major in biological science with at least 6 semester hours in aquatic subjects and at least 12 semester hours in the animal sciences. In addition to the undergraduate degree requirement, candidates for positions at the lower end of the range must also present 1 year of Specialized Experience** OR 2 years of progressively higher graduate education leading to a master's degree in field directly related to the position being filled. An equivalent combination of experience and education is also qualifying.

At the upper end of the range, in addition to the undergraduate course of study described above, candidates must also present one year of Specialized Experience** OR 3 years of progressively higher level graduate education leading to a Ph. D. degree or equivalent doctoral degree in fields directly related to the position being filled. An equivalent combination of experience and education is also qualifying.

**Specialized Experience is experience that equips the applicant with the knowledge, skills, and abilities to perform successfully the duties of the position and is typically in or related to the work of the position being filled. To be creditable, specialized experience must have been equivalent to at least the next lower level in the normal line of progression for the position being filled.

Pacific States Marine Fisheries Commission is an Affirmative Action (AA) and Equal Employment Opportunity (EEO) employer and welcomes all qualified applicants. Applicants will receive fair and impartial consideration without regard to race, sex, color, religion, national origin, gender identity, age, mental or physical disability, sexual orientation, veteran status, genetic data, or other legally protected status.

If you have a disability and need assistance completing the application form, you may call the PSMFC human resources office at (503) 595-3100 between the hours of 8 a.m. and 5 p.m. PST, Monday-

Friday. Reasonable accommodations for interviews will be provided upon request to individuals with disabilities.

We maintain a drug-free workplace.