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Spatial Fisheries Mgmt Modeling Support

Ocean Associates inc. - Madison Park, WA

Posted: **1/15/2026** - Expires: **4/15/2026**

Job ID: 293099594

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Job Description

Ocean Associates Inc. (OAI) is seeking an applicant to provide Spatial Fisheries Management Modeling support to the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Northwest Fisheries Science Center (NWFSC), Conservation Biology (CB) Division in Seattle, WA. OAI is a Virginia corporation established in 2003 that provides consulting and technical services to the U.S. government, non-governmental organizations, international organizations, and the private sector. We specialize in scientific program and project management, strategic planning, professional and technical services, and stakeholder engagement, supporting government contracts.

Background

NOAA's National Marine Fisheries Service (NMFS) is responsible for the conservation and management of our Nation's living marine resources and their habitats. By developing high quality science and supporting an ecosystem-based approach to management, NMFS provides important services to the Nation, including sustainable fisheries, healthy ecosystems, safe seafood, and protected species recovery. In the Pacific Northwest Region of the US. the Northwest Fisheries Science Center (NWFSC)

provides science in support of managing living marine resources along the US West Coast, including those that use interior watersheds that support anadromous fish such as salmon and steelhead.

The potential development of new ocean-use sectors (e.g., offshore aquaculture, oil and gas exploration, renewable energy, critical minerals) may alter the use of space in the ocean and the infrastructure of coastal ports along the US West Coast. New ocean uses create the need for a unique set of scientific research objectives to support NMFS' management mandates and inform responsible and sustainable development of new economic sectors. One of the groups best poised to support this research is the California Current Integrated Ecosystem Assessment (CCIEA), an interdisciplinary research effort led by NMFS and fueled by many staff at NWFSC. The CCIEA program's goal is to provide science support for ecosystem-based management of the California Current, the productive large marine ecosystem along the US West Coast. Because the effects from new development and activities will change over time, cross-cut multiple sectors, and span the full social-ecological system there is a need for strategic, ecosystem-scale science to inform decision makers and proactively deconflict ocean uses. The CCIEA provides a framework and delivery system for co-developed, integrative science products to inform management decisions that intersect ocean-use communities.

At NMFS, a major question emerging from new offshore development and activity is: how will the population dynamics of commercial fisheries species change due to fisheries closures associated with areas designated for new development? More to the point, there is concern about how changes in population and ecosystem dynamics caused by new development will affect the reliability of decision support tools such as stock assessments, which underpin harvest advice to fisheries managers. The focus of this position is to address these questions and concerns by improving knowledge around how new development will affect fisheries stocks and ecosystem dynamics, including fisheries and fishing communities.

Description

The scope of this work is to lead activities and development of products that will improve our understanding of how new ocean-use sectors might affect NMFS scientific data collections, fisheries stocks, and fisheries stock assessment estimates. These activities and deliverables should result in better service to the public through analyses that inform potential impacts to scientific surveys, stock assessments, and harvest management advice. Focal activities will build off of previous and ongoing analyses and include: 1) simulating population dynamics to identify how, and at what spatial scale, species' demographic parameters and stock assessment estimates may change as a result of newly-closed fishing grounds and loss of access by scientific surveys. Parameters or measures of interest will likely include density, abundance, size- and age-structure, and spawning stock biomass which are all important data used to inform and conduct NMFS stock assessments and for making management decisions.

The main objective of this project is to lead and build off the development of an analytical framework to assess potential impacts to NMFS stock assessments that could arise due to the displacement of commercial fishing effort and scientific surveys from areas under consideration for use by new ocean-use sectors. This framework will enable more informed advice on the impacts of new development to commercially-important species, NMFS stock assessments, and subsequent management advice. These science products will contribute to the responsible and sustainable development of new ocean-

These science products will contribute to the responsible and sustainable development of how ocean-use sectors into the future, while simultaneously ensuring current fisheries management advice is well-informed of the potential risks of future spatial management scenarios.

Tasks

Task 1: Building off previous research efforts of the team, complete stock assessment simulations for commercially-valuable groundfish species across spatial closure scenarios.

- Review ongoing research efforts of the team.
- Review spatial fisheries management (e.g., marine protected area) literature for 'best-practices' capable of identifying changes in species' population demographics inside and outside areas closed to extractive activities, such as fishing.
- Complete ongoing stock assessment simulations for two groundfish species across spatial-closure scenarios that modify survey and fishing effort.
- Summarize demographic parameters and assessment performance metrics for species-of-interest across each spatial-closure scenario.
- In collaboration with team members, develop and interpret figures and co-author manuscript reporting the results.

Task 2: Develop a generalizable modeling framework that is capable of incorporating the effects of spatial closures and changing ecosystem conditions on population dynamics, survey data collection, and fisher behavior on stock assessment estimates for commercially-important species.

- Review relevant literature and engage team members and external experts to understand how available data or model output can be used in this framework.
- Using or building upon previous modeling efforts, examine how population dynamics might be affected by spatial closures to commercial fisheries.
- Examine the effects of any changes in population dynamics on stock assessment estimates and performance metrics given the loss of survey effort in closure areas.
- Integrate scenarios of changes in spatial fishing effort due to spatial closures.
- Develop methods to incorporate shifts in species distributions due to changing ocean conditions.
- Simulate stock assessments across various spatial closure, survey mitigation strategy, and ocean conditions scenarios to estimate effects on management advice.
- Produce manuscript describing results across scenarios.

Deliverables

Deliverables shall relate to the above tasks and will include, but not necessarily be limited to, the following:

- Complete ongoing analyses associated with Task 1, prepare figures and participate in writing a manuscript as a co-author or first author, depending on discussions with team members.
- Develop a generalized modeling framework that incorporates the effects of spatial closures and changing ecosystem conditions on population dynamics, survey data collection, and fisher behavior on stock assessment estimates for commercially-important species.
- Develop well-documented, reproducible, and shareable code for all analytical activities.

- Produce a first-authored manuscript that summarizes the results of the scenarios developed under Task 2.

Start Date: January 5, 2026, or as soon as possible.

Location: Northwest Fisheries Science Center Seattle, WA.

Travel: Limited travel is anticipated and authorized for this order. Domestic travel may be required for regional meetings and conferences to discuss and present project related work and objectives.

Salary and Benefits: This is a full-time position with benefits. Salary, commensurate with experience.

Requirements

Applicants must have the following minimum requirements:

- PhD degree from an accredited college or university with a major directly related in a field of study as related to the requirements of this position with emphasis in marine science, fisheries, quantitative ecology, oceanography, data science, or similar fields; or, equivalent relevant experience.
- Demonstrated proficiency and experience with data management and statistical analysis, with statistical software such as R, MATLAB, etc. and/or programming languages such as Python.
- Demonstrated proficiency and experience working with and developing spatial population, multi-species, or ecosystem modeling frameworks.
- Demonstrated proficiency and experience working with spatial software tools such as GIS or spatial packages in R.
- Demonstrated proficiency and experience working with stock assessment models and programming tools such as Stock Synthesis.
- Good communication, coordination, and collaboration skills, and a willingness to learn new skills, update existing skills, and share skills with colleagues in the team.
- Basic computer skills (MS Office, etc.).
- Excellent verbal and written communication skills.
- Ability to work effectively both individually and collaboratively in a team/group setting.
- Ability to receive constructive feedback and implement appropriate action.

Job Summary



Company Details

Company

Ocean Associates inc.

Industry

Environmental Science, Technology, Policy, and Law

Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)

Job Information

Location

Madison Park, WA

Website

<http://oceanassoc.com>

Job Type

Full Time Employee

Experience

Less than 1 Year

Career Level

Experienced (Non-Manager)

Education Level

Doctorate

Job Position

1 Position(s) Open

Salary/Wage

\$34.00 - \$38.00 /hour

Duration

Over 150 Days

Additional Information

Federal Contractor

Yes

Affirmative Action Plan

Yes

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