CAITLIN ALLEN AKSELRUD

Research Fish Biologist
Groundfish Assessment Program
Alaska Fisheries Science Center
Citizenship: USA
Selective Service: N/A

7600 Sand Point Way NE
Seattle, WA 98115
(206) 526-4143
caitlin.allen_akselrud@noaa.gov
@allen_akselrud
http://allenakselrud.weebly.com/

EDUCATION

In Progress	Ph.D. in Management Strategy Evaluation for Fishery Management School of Aquatic and Fishery Sciences, University of Washington, Seattle, WA
April 2017	M.S. in Fishery Management and Population Dynamics School of Aquatic and Fishery Sciences, University of Washington, Seattle, WA
June 2010	B.S. in Ecology, Behavior, and Evolution Minor in Marine Science University of California San Diego, La Jolla, CA

COURSEWORK

Total hours in Biology and Aquatic Science: 131 quarter hours (~87.4 semester hours)
>>15 semester (22.5 quarter) hours beyond introductory biology
>> 6 semester (9 quarter) hours in fishery and marine biology
Total hours in Chemistry/Physics/Math/Stats: 47 quarter hours (~31.3 semester hours)
(See below for course details)

RESEARCH AND WORK EXPERIENCE

June 2022–present	Member: Bering Sea Aleutian Islands Groundfish Plan Team, North Pacific Fishery Management Council, Anchorage.
Feb 2020–present	**Research Fish Biologist, ZP-0482-3**, Groundfish Assessment Program, Alaska Fisheries Science Center, NOAA-NMFS, Seattle. *40 hours per week.* Pollock data products for stock assessment; coded in R to improve transparency and reproducibility Survey data processing and data products preparation for groundfish and crab stock assessment authors Team lead: best practices in machine learning (ML) working group; working toward a publication for ML using fisheries data Host: Survey-Centric R Users Group weekly meetings and lessons; introduced weekly meetups to improve R use and skills
Apr 2017–present	Ph.D. dissertation research: Multi-species management strategy evaluation and fishery assessment methods development, applied to California coastal pelagic species, University of Washington
Sept 2014–Apr 2017	Master's thesis research: Stock assessment with an age-size-structured model, applied to Bering sea crab and cod stocks, University of Washington
Sept 2016–Jun 2017	Lingcod population assessment 2017, Collaboration with NOAA, Northwest Fisheries Science Center

Sept 2014–Jun 2015	Sablefish population assessment 2015, Collaboration with NOAA, Northwest Fisheries Science Center
Dec 2012–Jun 2014	Hazardous Materials Technician, University of California, San Diego University hazardous materials emergency response and business planning. *40 hours per week.*
Apr 2011–Apr 2012	Consulting Scientist, California Wetfish Producers Association Inshore California market squid data analyst, survey sampling grid designer, survey Chief Scientist, and sample processing, documentation, and preservation. *40 hours per week.*
Jun 2008–Jan 2011	Research Associate, Scripps Institution of Oceanography California Current conditions and market squid population dynamics analyst, at-sea scientist, and ichthyoplankton identification, documentation, and preservation. *40 hours per week.*

PUBLICATIONS

Hilborn, R, **Allen Akselrud, C**, Peterson, H, Whitehouse, GA. 2021 The trade-off between biodiversity and sustainable fish harvest with area-based management. *ICES Journal of Marine Science*, 78(6): 2271–2279. https://doi.org/10.1093/icesjms/fsaa139.

Anderson, CM, Krigbaum, MJ, Arostegui, MC, Feddern, ML, Koehn, JZ, Kuriyama, PT, Morrisett, C, **Allen Akselrud, CI**, Davis, MJ, Fiamengo, C and Fuller, A. 2019. How commercial fishing effort is managed. *Fish and Fisheries*, 20(2): 268-285.

Allen Akselrud, C, Punt, AE, Cronin-Fine, L. 2017. Exploring model structure uncertainty using a general stock assessment framework: The case of Pacific cod in the Eastern Bering Sea. *Fisheries Research*, 193: 104-120.

Punt, AE, **Allen Akselrud, C**, Cronin-Fine, L. 2017. The effects of applying mis-specified age- and size-structured models. *Fisheries Research*, 188:58-73.

Koslow, JA, **Allen, C.** 2011. The influence of the ocean environment on the abundance of market squid, *Doryteuthis (Loligo) opalescens*, paralarvae in the Southern California Bight. *California Cooperative Oceanic Fisheries Investigations Reports*, 52:205-213.

REPORTS

Ianelli, J, Fissel, B, Stienessen, S, Honkalehto, T, Siddon, E and **Allen Akselrud, C**. 2021. Assessment of the Walleye Pollock Stock in the Eastern Bering Sea. North Pacific Groundfish Stock Assessments and Fishery Evaluation Reports.

Haltuch, MA, Wallace, J, **Allen Akselrud, C**, Nowlis, J, Barnett, LAK, Valero, JL, Tsou, TS, and Lam, L. 2017. 2017 Lingcod Stock Assessment. Pacific Fishery Management Council.

Johnson, KF, Rudd, MB, Pons, M, **Allen, C**, Lee, Q, Hurtado-Ferro, F, Haltuch, MA, and Hamel, OS. 2015. Status of the U.S. sablefish resource in 2015. Pacific Fishery Management Council.

REVIEWS

Journals: *ICES Journal of Marine Science* (1- 2020; 1- 2021). *Journal of Oceanology and Limnology* (2- 2020). *Marine and Coastal Fisheries* (1- 2020; 1- 2021)

Internal reviews (NOAA): 3- 2020. 1- 2021. 1- 2022.

NOAA DATA PRODUCTS

Bering Sea pollock (*Gadus chalcogrammus*) for stock assessment and research: 1) indices of abundance (design-based, model-based, and with a density-dependent correction), 2) age composition data (design-based, model-based, and a density-dependent correction), age-length keys, and weight-at-age data, 3) length composition data (design-based, and a density-dependent correction).

Northern rocksole for stock assessment: model-based indices of abundance

Survey data products: length-weight regression, maximum length by species, and survey data post-processing.

PROGRAMMING

Proficient in R and ADMB (based in C++). Experience with packages for Stock Synthesis (SS) and TMB. Familiar with RMarkdown and Shiny. SQL code for Oracle database management. Mapping experience in ArcGIS. Basic Linux for high-performance computing and cloud computing. Basic programming in FORTRAN, MATLAB, and HTML.

FIELD EXPERIENCE

June 2018	Volunteer Scientist for the NOAA Southwest Fishery Science Center Juvenile Rockfish Mid-Water Trawl Survey, Santa Cruz, CA
2011–2012	Lead Research Scientist for pelagic larval collections in the Channel Islands, California Wetfish Producers Association, Goleta, CA
2010–2011	Assistant Collection Scientist for joint CalCOFI-NOAA Research Cruises, CalCOFI Program, Scripps Institution of Oceanography, La Jolla, CA

SERVICE: NOAA

2020–present	AFSC Harassment Prevention Working Group (HPWG)
2020–present	AFSC Fieldwork COVID SOP Group
2020–2022	AFSC Team for Inclusion, Diversity, and Equity (TIDE)

OUTREACH AND TEACHING: NOAA

Summer 2022	NOAA Office of Education, Hollings Scholar summer internship program: What cephalopods do we see in the California Current? Tracking species presence-absence patterns and abundance through time. Lily DeLaforcade. AFSC and SWFSC partnership, Seattle, WA
Summer 2022	NOAA Office of Education, Educational Partnership Program with Minority-Serving Institutions: Tracking spatial and energy density changes in key forage cephalopods. Martin Gonzalez. AFSC and NWFSC partnership, Seattle, WA

Winter 2021	Introduction to R Coding for the Groundfish Assessment Program at AFSC, Seattle, WA
2020 - 2021	University of Washington Capstone student mentorship: Changes in the Purple Orange Sea Star's abundance and distribution in the Bering Sea. Madeline Corbett. University of Washington, Seattle, WA

PROFESSIONAL TRAINING

AFSC development training:

May 2022	Emotional intelligence training
May 2022	Conflict resolution
April 2022	Leadership training
April 2021-22	FISST Harassment Prevention training
May 2021	Microaggressions Workshop
Feb. 2021	Adaptive Leadership
Feb. 2021	Disability Awareness training
Sept 2020	How to be an Ally
Sept 2020	Called out not cast out: the are of apology and changing your mind
June 2020	Conflict Management
May 2020	Leadership Training

AFSC technical training:

Apr 2022	Forage Species Congress at AFSC, Virtual
Feb 2022	Center for the Advancement of Population Assessment Methodology, Model diagnostics in stock assessment workshop, Virtual
Winter 2021	Survey Design Course with S. Kotwicki et al, University of Washington, Virtual
May 2020	GitHub Workshop, Virtual
Mar 2020	Stock Synthesis Workshop, Virtual
Feb 2020	VAST workshop, AFSC, Seattle, WA

Prior technical training:

Oct. 2018	Center for the Advancement of Population Assessment Methodology, Spatial Stock Assessment Models Workshop, La Jolla, CA
Oct. 2017	Center for the Advancement of Population Assessment Methodology, Recruitment Workshop, Miami, FL
Oct. 2017	Communicating science workshop: Social Media and Journalism, University of Washington, Seattle, WA
Aug. 2017	Quantitative Ecology and Socioeconomics Training, Management Strategy Evaluation Workshop, ICES ASC Conference, Ft. Lauderdale, FL
2015, 2016	AMPLIFY: Quarterly Science Communications Workshops, University of Washington
2015, 2016	Annual Communicating Ocean Sciences Workshop, Alaska Marine Science Symposium
June 2016	Analysis of occupancy data using hidden Markov models and E-SURGE Workshop, ISEC Conference, Seattle, WA

Oct. 2015 Center for the Advancement of Population Assessment Methodology, Data-Weighting Workshop, La Jolla, CA

PRESENTATIONS

Present *Host and presenter:* Survey-Centric R Users Group, GAP, AFSC, currently running weekly meetings since May 2020

Sept 2021 *Oral Presentation:* Harassment Prevention Working Group progress update at AFSC All-Hands.

June 2020 *Oral Presentation:* Proposal for harassment prevention improvements on AFSC surveys to the AFSC Board of Directors

June 2020 *Oral Presentation:* ICES Working Group on Cephalopod Fisheries and Life History: Developing machine learning methods to predict squid abundance, virtual presentation

May 2019 *Oral Presentation*: Joint Project Agreement (JPA): Fisheries Panel Meeting. Proposal to work on developing joint squid assessment in between North Pacific countries, Seattle, WA

Nov. 2018 *Oral Presentation*: Cephalopod International Advisory Council Conference, St. Petersburg, FL

Oct. 2018 *Stakeholder Workshop*: Advancing CPS MSE Development in the California Current. Co-hosted with the Future Seas Project, Southwest Fisheries Science Center, NOAA, La Jolla, California

July 2018 *Poster Presentation*: International Statistical Ecology Conference, St. Andrews, Scotland

May 2018 *Poster Presentation*: Population Dynamics Fellows Conference, Northwest Fisheries Science Center, NOAA, Seattle, Washington

Nov. 2017 *Oral Presentation*: Graduate Student Symposium, School of Aquatic and Fishery Sciences, University of Washington, Seattle, Washington

April 2017 *Oral Presentation:* Master's Thesis Defense, School of Aquatic and Fishery Sciences, University of Washington, Seattle, Washington

Feb. 2017 *Oral Presentation:* Think Tank, School of Aquatic and Fishery Sciences Seminar, University of Washington, Seattle, Washington

Jan. 2015-17 *Poster Presentations:* Alaska Marine Science Symposium, Anchorage, Alaska

Nov. 2016 *Poster Presentation*: 25 Years of PICES Conference, San Diego, California

Nov. 2016 *Poster Presentation*: Graduate Student Symposium, School of Aquatic and Fishery Sciences, University of Washington, Seattle, Washington

Aug. 2016 *Oral Presentation*: NOAA Alaska Fisheries Science Center, Resource Ecology and Fisheries Management Division, Seattle, Washington

Nov. 2015 *Oral Presentation:* Think Tank, School of Aquatic and Fishery Sciences Seminar, University of Washington, Seattle, Washington

May 2015 *Oral Presentation*: Pacific Fishery Management Council: Sablefish Assessment, Spokane, Washington

Dec. 2010 *Oral Presentation:* Speaker at CalCOFI Conference, La Jolla, California

COURSEWORK TO SATISFY JOB REQUIREMENTS:

University of Washington: Graduate Training

Biological and aquatic science:

FISH 454	Ecological Modeling	5 units
FISH 458	Models, Estimation: Consv & Resource Mgmt	4 units
FISH 511	Current Topics: Evol, Ecol, Behavior	2 units
FISH 513	Current Topics: Mgmt, Consv, Restoration	2 units
FISH 522	Hot Topics in Aquatic and Fishery Science	2 units
FISH 556	Spatio-temporal Models for Ecologists	5 units
FISH 558	Decision Analysis: Nat Resource Mgmt	4 units
FISH 559	Numerical Computing: Nat Resources	5 units
FISH 561	Resource Economics for Mgmt & Policy	4 units
FISH 562	Ecosystem Based Fisheries Management	2 units
FISH 563	Ecosystem Based Fisheries Mgmt Lab	2 units
FISH 600	Fishery Stock Assessment: Owen Hamel	5 units
FISH 600	Fishery Stock Assessment: Melissa Haltuch	5 units
FISH 578	Sustainable Fisheries: Fishery Effort	2 units

Physical and mathematical science:

QSCI 482	Statistical Inference Ecology	5 units
ASTR 598	Topics in Astrophysics: Supercomputing	1 unit

University of California, San Diego: Undergraduate Training

Biological and aquatic science:

ERTH 50	Intro to Earth/Environmental Science	5 units
ERTH 90	Earth Science Seminar	1 unit
BIEB 102	Intro to Ecology, Organisms, Habitats	4 units
BIEB 121	Ecology Laboratory: Insect Ecology	6 units
BIEB 128	Insect Ecology	4 units
BIEB 126	Plant Ecology	4 units
BIEB 134	Intro to Biological Oceanography	4 units
BIEB 132	Introduction to Marine Biology	4 units
BIEB 140	Biodiversity	4 units
BIEB 166	Animal Behavior & Communication	4 units
BIEB 174	Ecosystems & Global Change	4 units
BILD 1	The Cell (Biology)	4 units
BILD 2	Multicellular Life	4 units
BILD 3	Organismic & Evolutionary Biology	4 units
BICD 100	Genetics	4 units

SIO 30	The Oceans	4 units
SIO 87	Natural History: Sense of Place Seminar	1 unit
SIO 87	Marine Natural History Seminar	1 unit
SIO 101	California Coast Oceanography	4 units
SIO 138	The Coral Reef Environment	4 units
SIO 148	Evolution of Earth's Biosphere	4 units
SIO 199	Independent Study, Dr. Paul Dayton	4 units
SIO 199	Independent Study, Dr. Sarah Gille	4 units

Physical and mathematical science:

MATH 10A	Calculus	4 units
MATH 10B	Calculus	4 units
MATH 10C	Calculus	4 units
MATH 20B	Calculus: Science & Engineering	2 units
CHEM 6A	General Chemistry I	4 units
CHEM 6B	General Chemistry II	4 units
CHEM 6C	General Chemistry III	4 units
PHYS 1A	Mechanics	3 units
PHYS 1AL	Mechanics Lab	2 units
PHYS 1B	Electricity & Magnetism	3 units
PHYS 1BL	Electricity & Magnetism Lab	2 units
PHYS 1C	Waves, Optics, Modern Physics	3 units
PHYS 1CL	Waves, Optics, Modern Physics Lab	2 units