Benjamin A. Staton, PhD

Columbia River Inter-Tribal Fish Commission
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EDUCATION

2016–2019 PhD in Fisheries Management, Auburn University
2014–2016 MSc in Fisheries Management, Auburn University
2009–2013 BSc in Fisheries and Wildlife Biology and Management (with Honors), Michigan State University

EXPERIENCE

2019–Present — **Quantitative Fisheries Scientist**
CRITFC, Portland, OR, Dr. Seth White
- Lead collaborative development of Columbia River spring Chinook salmon life cycle models
- Evaluate the likely impacts of habitat restoration and climate change on population status
- Provide general quantitative support for fisheries analyses

2016–2019 — **Graduate Research Assistant (PhD)**
Auburn University, Auburn, AL, Dr. Matt Catalano
- Developed simulation models for use in salmon management strategy evaluations
- Assessed the reliability and utility of salmon run timing forecast models
- Simulation-tested hierarchical Bayesian models for multi-stock spawner-recruit analysis
- Assessed methods for updating estimates of salmon run size using Bayesian inference
- Built an interactive tool to allow managers and stakeholders to evaluate risks and trade-offs of harvesting based on the most current run assessment information
- Extensive use of programs R, JAGS, and BUGS for specifying and fitting models
- Presented research findings to subsistence fishery stakeholders, area biologists, and managers and lead these groups through participatory modeling exercises
- Aided in teaching population dynamics and quantitative fisheries assessment courses

2016–2019 — **Pathways Student**
Yukon Delta NWR, USFWS, Bethel, AK, Dr. Lew Coggins
- Produced daily assessments of incoming salmon runs and distribute to all interested parties
- Developed and applied methods to estimate effort and harvest in subsistence fishery openings
- Served as a technical advisor to the federal in-season harvest manager
- Worked closely with state and tribal management organizations
- Frequently presented findings from run assessments including run size estimates, harvest estimates, and risk analyses to decision-makers and stakeholders

2014–2015 — **Graduate Research Assistant (MSc)**
Auburn University, Auburn, AL, Dr. Matt Catalano
- Tested the sensitivity of integrated Bayesian population models for stock assessment
- Conducted age-structured spawner-recruit analyses for Alaska Chinook salmon stocks
- Developed a habitat-based model for deriving biological reference points for data-poor stocks
- Assisted other graduate students with field, laboratory, and statistical work

2013 May–Oct — **Fisheries Field Technician**
Indiana DNR, Martinsville, IN, Rhett Wisener
- Aided in standardized fish sampling of reservoirs and streams
- Use boat and tow-barge electrofishers, gill nets, and trap nets
- Completed other tasks as needed: data entry, scale pressing/aging, and gear maintenance

2012 Jun–Aug — **Undergraduate Research Assistant (NSF-REU)**
Marine Sci. Institute, Port Aransas, TX, Dr. Ben Walther
- Sampled fish and invertebrates with bottom trawls on coastal vessels
- Extracted, embedded, sectioned, photographed, and measured otoliths
- Compiled and organized data and conducted statistical analyses

PEER-REVIEWED PUBLICATIONS

In Review

H. Nuetzel, P. Galbreath, **B.A. Staton**, C. Crump, L. Naylor, and G. Shippentower. Improved productivity of naturalized spring Chinook salmon following reintroduction from a hatchery stock in Lookingglass Creek, Oregon. Submitted for review to the *Canadian Journal of Fisheries and Aquatic Sciences* Jun 2022, revision submitted Aug 2022

L. Horne, D. DeVries, R. Wright, E. Irwin, **B.A. Staton**, H. Abdelrahman, and J. Stoeckel. Thermal performance of the electron transport system Complex III in seven Alabama fishes. Submitted for review to the *Journal of Experimental Zoology, Part A* Feb 2022, revision submitted Jul 2022

In Press

B. Connors, M. Siegle, J. Harding, S. Rossi, **B.A. Staton**, M. Jones, M. Bradford, R. Brown, W. Bechtol, B. Doherty, S. Cox, and B. Sutherland. Chinook salmon population diversity contributes to fishery stability and trade-offs with mixed-stock harvest. *Ecological Applications*. Accepted May 2022;

2022

B.A. Staton, C. Justice, S. White, E.R. Sedell, L.A. Burns, and M.J. Kaylor. Accounting for uncertainty when estimating drivers of imperfect detection: An integrated approach illustrated with snorkel surveys for riverine fishes. *Fisheries Research*, 249:106209.

A. Bass, A. Bateman, B. Connors, **B.A. Staton**, E. Rondeau, G. Mordecai, A. Teffer, K. Kaukinen, S. Li, A. Tabata, D. Patterson, S. Hinch, and K. Miller. Identification of infectious agents in early marine Chinook and coho salmon associated with cohort survival. *FACETS*, 7:742–773.

2021

B.A. Staton, M.J. Catalano, S.J. Fleischman, and J. Ohlberger. Incorporating demographic information into spawner–recruit analyses alters biological reference point estimates for a western Alaska salmon population. *Canadian Journal of Fisheries and Aquatic Sciences*, 78(12):1755–1769.

P.F. Galbreath, **B.A. Staton**, H.M. Nuetzel, C.A. Stockton, C.M. Knudsen, L.R. Medeiros, I.J. Koch, W.J. Bosch, and A.L. Pierce. Precocious maturation of hatchery-raised spring Chinook salmon as age-2 minijacks is not detectably affected by sire age. *Transactions of the American Fisheries Society*, 151(3):333–346.

M.J. Kaylor, C. Justice, J.B. Armstrong, **B.A. Staton**, L.A. Burns, E. Sedell, and S.M. White. Temperature, emergence phenology and consumption drive seasonal shifts in fish growth and production across riverscapes. *Journal of Animal Ecology*, 90(7):1727–1741.

2020

B.A. Staton, M.J. Catalano, B.M. Connors, L.G. Coggins Jr., M.L. Jones, C.J. Walters, S.J. Fleischman, and D.C. Gwinn. Evaluation of methods for spawner-recruit analysis in mixed-stock Pacific salmon fisheries. *Canadian Journal of Fisheries and Aquatic Sciences*, 77(7):1149–1162.

B.M. Connors, **B.A. Staton**, L.G. Coggins Jr., C.J. Walters, M.L. Jones, M.J. Catalano, D.C. Gwinn, and S.J. Fleischman. Incorporating harvest – population diversity trade-offs into harvest policy analyses of salmon management in large river basins. *Canadian Journal of Fisheries and Aquatic Sciences*, 77(6):1076–1089.

2019

B.A. Staton and M.J. Catalano. Bayesian information updating procedures for Pacific salmon run size indicators: Evaluation in the presence and absence of auxiliary migration timing information. *Canadian Journal of Fisheries and Aquatic Sciences*, 76(10):1719–1727.

A.P. Moses, **B.A. Staton**, and N.J. Smith. Migratory patterns of Chinook salmon bound for the Kwethluk and Kisaralik Rivers using radio telemetry, 2015-2016. *Submitted to the Journal of Fish and Wildlife Management*, 10(2):419–431.

2017

B.A. Staton, M.J. Catalano, T.M. Farmer, A. Abebe, and F.S. Dobson. Development and evaluation of a migration timing forecast model for Kuskokwim River Chinook salmon. *Fisheries Research*, 194:9–21.

D.A. Dippold, G.D. Adams, T.M. Farmer, and **B.A. Staton**. Maximize your meeting: A student's guide to AFS meetings. *Fisheries*, 42(4):187–189.

B.A. Staton, M.J. Catalano, and S.J. Fleischman. From sequential to integrated Bayesian analyses: Exploring the continuum with a Pacific salmon spawner-recruit model. *Fisheries Research*, 186:237–247.

L.M. White, M.E. Meade, and **B.A. Staton**. Physiological ecology of four endemic Alabama species and the exotic Asiatic weatherfish, *Misgurnus anguillicaudatus* (Cantor, 1842). *Southeastern Fishes Council Proceedings*, 1(57).

GREY LITERATURE PUBLICATIONS

2021
- **B.A. Staton**. Improving the Kuskokwim in-season salmon harvest estimation workflow. Project summary report, Quantitative Ecological Services, LLC, Portland, OR, Nov.
- S. White, C. Justice, L. Burns, **B. Staton**, and M. Kaylor. Assessing the status and trends of spring Chinook habitat in the Upper Grande Ronde River and Catherine Creek: annual report 2020. Technical Report 21-02, Columbia River Inter-Tribal Fish Commission, Portland, OR, Apr.

2020
- S. White, C. Justice, L. Burns, **B. Staton**, D. Graves, and M. Kaylor. Assessing the status and trends of spring Chinook habitat in the Upper Grande Ronde River and Catherine Creek: annual report 2019. Technical Report 20-04, Columbia River Inter-Tribal Fish Commission, Portland, OR, Apr.

2019
- B.M. Connors, L.G. Coggins Jr., **B.A. Staton**, M.L. Jones, C.J. Walters, and D.C. Gwinn. Harvest-population diversity tradeoffs for Kuskokwim Chinook. Final project report submitted to the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative, Jul.
- **B.A. Staton**. *Development and evaluation of assessment tools and management strategies for salmon fisheries in western Alaska*. PhD thesis, Auburn University, Auburn, AL, May.
- M.J. Catalano, **B.A. Staton**, L.G. Coggins Jr., M.L. Jones, and Z. Liller. In-season management policies for kuskokwim chinook. Final project report submitted to the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative, Apr.

2018
- **B.A. Staton**. In-season harvest and effort estimates for 2018 Kuskokwim River subsistence salmon fisheries during block openers. Project summary report, Yukon Delta National Wildlife Refuge, U.S. Fish and Wildlife Service, Bethel, AK.
- **B.A. Staton**. *Intro to R for Natural Resource Scientists*.
- M.J. Catalano and **B.A. Staton**. Run timing forecast models for Kuskokwim River Chinook salmon. Final project report submitted to the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative.
- **B.A. Staton**. In-season Chinook salmon Bayesian risk assessment tool: Technical documentation.
- **B.A. Staton**. In-season Chinook salmon Bayesian risk assessment tool: User manual.

2017
- **B.A. Staton** and L.G. Coggins Jr. In-season harvest and effort estimates for 2017 Kuskokwim River subsistence salmon fisheries during block openers. Project summary report, Yukon Delta National Wildlife Refuge, U.S. Fish and Wildlife Service, Bethel, AK.

2016
- **B.A. Staton** and L.G. Coggins Jr. In-season harvest and effort estimates for 2016 Kuskokwim River subsistence salmon fisheries during block openers. Project summary report, Yukon Delta National Wildlife Refuge, U.S. Fish and Wildlife Service, Bethel, AK.
- M.J. Catalano, **B.A. Staton**, T.M. Farmer, D.C. Gwinn, and S.J. Fleischman. Evaluating assessment strategies for Kuskokwim River Chinook salmon. Final project report submitted to the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative.

2015
- **B.A. Staton**. Assessment strategies for data-limited Chinook salmon stocks of Western Alaska. Master's thesis, Auburn University, Auburn, AL, Dec.
- **B.A. Staton**, M.J. Catalano, L.G. Coggins, D.C. Gwinn, and B. Bechtol. Description of the Kuskokwim River Chinook salmon run reconstruction and an investigation of data weighting. Technical report, Invited Independent Model Review Team.

2014
- **B.A. Staton**, M.J. Catalano, and S.J. Fleischman. Overview of the Kuskokwim River Chinook salmon stock assessment and the application of a Bayesian state-space run reconstruction with integrated stock-recruitment productivity. Semi-annual report for funding agency AYK SSI

PROFESSIONAL PRESENTATIONS

2022
- Sensitivity of S_{MSY} to temporally changing demographics in Kuskokwim River Chinook salmon. Annual National AFS Meeting, Spokane, WA, Aug
- An integrated model for quantifying covariates of detectability: Illustrated with snorkel surveys for riverine juvenile salmonids. Annual National AFS Meeting, Spokane, WA, Aug
- Grande Ronde spring Chinook life cycle model: Modeling framework and description of freshwater juvenile dynamics. Adaptive Management Implementation Plan Summer Meeting, Jun

2021
- Grande Ronde spring Chinook life cycle model: Model update/overview. Grande Ronde Model Watershed Life Cycle Modeling and Restoration Scenarios Workshop, Nov
- Grande Ronde spring Chinook life cycle model: update and overview. Invited Presentation to Grande Ronde Model Watershed ATLAS Implementation Team, Feb

2020
- A hierarchical approach to joint estimation of juvenile salmonid abundance and probability of detection. Annual Oregon Chapter AFS Meeting, Bend, OR, Mar
- Rethinking methods for quantifying snorkel survey detection efficiency. CRITFC Brown Bag Seminar, Portland, OR, Feb

2019
- State-space models for estimating sub-population diversity in mixed-stock Pacific salmon fisheries. Annual National AFS Meeting, Reno, NV, Sep
- Development and evaluation of assessment tools and management strategies for salmon fisheries in western Alaska. Departmental Exit Seminar, Auburn, AL, May

2018
- The expected value of information for intra-annual harvest management in Pacific salmon fisheries. Annual National AFS Meeting, Atlantic City, NJ, Aug
- Evaluation of several approaches to Bayesian updating of pre-season indicators of run strength in Pacific salmon fisheries. Annual Western Division AFS Meeting, Anchorage, AK, May
- Development and evaluation of a migration timing forecast model for Kuskokwim River Chinook salmon. Annual Western Division AFS Meeting, Anchorage, AK, May
- A decision support tool for considering Kuskokwim Chinook salmon harvest targets during the run. A presentation to Kuskokwim River Salmon Managers, Bethel, AK, Apr

2017
- Problems and solutions in the assessment of mixed-stock salmon fisheries. Invited Guest Speaker, Quantitative Group Seminar Series, University of British Columbia, Vancouver, BC., Dec
- In-season simulation models for assessing the potential value of information for community-based monitoring activities in the Kuskokwim River: Part Two. NCEAS Working Group Meeting, Santa Barbara, CA, Oct
- Evaluation of several approaches to Bayesian updating of pre-season indicators of run strength in Pacific salmon fisheries. Annual National AFS Meeting, Tampa, FL, Aug
- In-season simulation models for assessing the potential value of information for community-based monitoring activities in the Kuskokwim River: Part One. NCEAS Working Group Meeting, Bethel, AK, May
- Run timing forecast models for Kuskokwim River Chinook salmon and their utility for in-season management. Stakeholder Capacity Building Workshop, Bethel, AK, May
- In-season simulation models for harvest strategy evaluation and participatory modeling exercises: Part Three. Stakeholder Capacity Building Workshop, Bethel, AK, May
- Development and evaluation of a migration timing forecast model for Kuskokwim River Chinook salmon. Annual Southern Division AFS Meeting, Oklahoma City, OK, Feb

2016
- In-season simulation models for harvest strategy evaluation and participatory modeling exercises: Part Two. Stakeholder Capacity Building Workshop, Bethel, AK, Dec
- In-season simulation models for harvest strategy evaluation and participatory modeling exercises: Part One. Stakeholder Capacity Building Workshop, Bethel, AK, Feb
- Estimation of stock-specific productivity to assess trade-offs in mixed-stock Pacific salmon fisheries. Joint Meeting of the AL and GA AFS State Chapters, Columbus, GA, Feb

2015
- 4 Total: graduate student seminar (2); society conference (1); agency meeting (1)

2014
- 1 Total: Society Conference (1)

GRANTS & AWARDS

2021–2023	Kuskokwim Salmon In-Season Harvest Predictive Tools. Awarded to Quantitative Ecological Services, LLC by the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative, Administered Under Bering Sea Fisherman's Association Project AC-2016; $57,070
2021	Improving the Kuskokwim In-Season Salmon Harvest Estimation Workflow. Awarded to Quantitative Ecological Services, LLC by the Kuskokwim River Inter-Tribal Fish Commission, Adminstered Under Bering Sea Fisherman's Association Projects AC-2101 and AC-2105; $20,328
2018	Swingle Award for Best PhD Student, Auburn University SFAAS
2016–2018	Run Timing Forecast Models for Kuskokwim River Chinook Salmon. Awarded to M. J. Catalano, B. A. Staton, and T. M. Farmer by the Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative; $110,478
2014–2018	Travel funds to conduct graduate work by participating in meetings, scientific conferences, and working groups. Auburn University; $15,000+
2014–2018	Three separate travel awards to present research at scientific conferences. Auburn Chapter of the American Fisheries Society; $500
2015	Swingle Award for Best MSc Student, Auburn University SFAAS
2013	Graduated with Honors from Michigan State University with a BSc (GPA 3.91)
	Niles R. Kevern Scholarship for Excellence in Undergraduate Studies in Fisheries and Wildlife

TEACHING

2022	
Co-instructor	BUGS/JAGS for Fish Biologists, Annual National AFS Meeting, Spokane, WA, Aug (8)
Sole Instructor	Intro Topics in Bayesian Inference, Annual MTAFS Virtual Meeting, March (4)
2021	
Lead Instructor	BUGS/JAGS for Fish Biologists, Annual WDAFS Virtual Meeting, May (16)
2020	
Lead Instructor	BUGS/JAGS for Fish Biologists, Annual AFS Virtual Meeting, Sep (16)
2019	
Sole Instructor	BUGS/JAGS for Fish Biologists, CRITFC Main Office, Portland, OR, Nov (16*)
Lead Instructor	BUGS/JAGS for Fish Biologists, Annual National AFS Meeting, Reno, NV, Sep (16)
2018	
Lead Instructor	Intro to R for Natural Resource Scientists, Auburn University, AL, Autumn (12)
Guest Lecturer	Bayesian Methods in Biology, Auburn University, Sep (3)
Lead Instructor	BUGS/JAGS for Fish Biologists, Annual National AFS Meeting, Atlantic City, NJ, Aug (16)
Teaching Assistant	Fish Population Dynamics, Auburn University, Spring (12)
2017	
Sole Instructor	Intro to R for Natural Resource Scientists, Auburn University, AL, Autumn (12)
Lead Instructor	BUGS/JAGS for Fish Biologists, Annual National AFS Meeting, Tampa, FL, Aug (16)
Teaching Assistant	Quantitative Assessment of Fish Populations, Auburn University, Spring (12)
Co-instructor	Graphing and Fisheries Modeling with R, Southern Division AFS Meeting, Feb (8)
2016	
Sole Instructor	Intro to R for Natural Resource Scientists, Auburn University, AL, Autumn (12)
Guest Lecturer	Bayesian Methods in Biology, Auburn University, Sep (3)
Lead Instructor	BUGS/JAGS for Fish Biologists, Annual National AFS Meeting, Kansas City, MO, Aug (16)
Teaching Assistant	Fish Population Dynamics, Auburn University, Spring (12)
2015	
Sole Instructor	Intro to R for Natural Resource Scientists, Auburn University, AL, Autumn (12) & Spring (10)
Teaching Assistant	Intro to BUGS for Fish Biologists, Annual National AFS Meeting, Portland, OR, Aug (8)
Guest Lecturer	Bayesian Methods for Salmon Stock Assessment, Auburn University, AL, Mar (3)
2014	
Teaching Assistant	Intro to R in Fisheries, Dauphin Island Sea Lab, AL (8)

*Numbers in parentheses represent the total hours of active instruction