

# **Robert M. Suryan**

*Supervisory Research Fish Biologist, NOAA Alaska Fisheries Science Center  
Science Lead, Gulf Watch Alaska Long-Term Ecosystem Research and Monitoring Program*

Auke Bay Laboratories/ Ted Stevens Marine Research Institute

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**Research Interests:** Long-term ecological investigations in marine environments working nationally and internationally. Primary interests include: marine ecosystem processes, foraging ecology, spatial ecology, population dynamics, food webs, human-resource interactions, ecosystem-based fisheries management, education.

## **Education**

Ph.D. - Oregon State University, Wildlife Science, 2006.

M.S. - Moss Landing Marine Laboratories, Marine Science, 1995.

B.S. - Humboldt State University, Wildlife Management, 1989.

## **Professional Experience**

Research Fish Biologist, Prog. Mgr.	NOAA Fisheries	2020-present
Research Ecologist	NOAA Fisheries	2018-2020
Associate Professor - Senior Research	Oregon State University	2012-2018
Assistant Professor - Senior Research	Oregon State University	2006-2012
Postdoctoral Research Associate	Oregon State University	2006
NOAA Fisheries Oceanography Fellow	Oregon State University	2003-2006
Graduate Research Assistant	Oregon State University	2001-2006
Faculty Research Assistant	Oregon State University	2001
Wildlife Biologist/Co-Prin. Invest.	U.S. Fish and Wildlife Service	1996-2001
Wildlife Biologist/Assistant Prin. Invest.	U.S. Fish and Wildlife Service	1995
Graduate Research Assistant	Moss Landing Marine Laboratories	1993-1995
Wildlife Biologist	Washington Department of Wildlife	1992
Contractor	National Marine Mammal Lab	1991
Wildlife Biologist	U.S. Forest Service	1989, 1990

## **Other Academic Affiliations**

Affiliate Faculty: Wildlife Biology Program, University of Montana	2020-present
Courtesy Associate Professor: Department of Fisheries, Wildlife, and Conservation Science, Oregon State University	2018-present
Affiliate Faculty: College of Fisheries and Ocean Sciences, University of Alaska Fairbanks	2016-present
Adjunct Associate Professor: College of Agriculture, Forestry, and Life Sciences, Clemson University	2014-2019
Adjunct Associate Professor: Marine Resource Management, College of Earth, Ocean, and Atmospheric Sciences, Oregon State University	2009-2018

## **Leadership and Service (current)**

- Program Manager, Recruitment, Energetics, and Coastal Assessment at the NOAA Alaska Fisheries Science Center, Auke Bay Laboratories, 2020-present
- Science Lead, Gulf Watch Alaska Long-Term Ecosystem Research and Monitoring Program
- Member, North Pacific Marine Science Organization working group on Climate Extremes and Coastal Impacts in the Pacific, 2022-present

- Member, Alaska Fisheries Science Center working group on Ecosystem-Based Management, 2021-present.
- Co-Lead, Alaska Fisheries Science Center's Workforce Collaboration Team, 2022-present
- Contributing Editor, Marine Ecology Progress Series 2019-present
- Lead, Short-tailed Albatross Endangered Species Recovery Team, 2010-present
- Former Chair, Past-Chair, Chair, Chair-elect, Pacific Seabird Group, 2019-2022
- Guest Editor, Deep-Sea Research II Gulf of Alaska special issue, 2020-2022

### **Awards** (most relevant)

- Presidential Migratory Bird Stewardship Award *for collaborative fisheries research and outreach to reduce seabird bycatch in longline fisheries*. In partnership with NOAA Fisheries and University of Washington Sea Grant, 2015
- Contributor to the Bering Sea Project that received the Department of Commerce Gold Medal Award for *conducting a comprehensive, integrated ecosystem research program that reveals how climate cycles affect the Nation's largest fishery* 2015.

### **Patent Application**

- A Blade-Mounted System and Method for Detecting Interactions between Wildlife and Wind Turbines. Provisional patent, U.S. Patent and Trademark Office application no. 62313028. 2016.

### **Publications**

Refereed Papers (70 total, 18 as senior or equal authorship). Selected relevant publications listed below.

69. Danielson et al. 2022. Temperature variations in the northern Gulf of Alaska across synoptic to century-long time scales. *Deep Sea Research Part II: Topical Studies in Oceanography*: 105155
65. Shotwell et al. 2022. Synthesizing integrated ecosystem research to create informed stock-specific indicators for next generation stock assessments. *Deep Sea Research Part II: Topical Studies in Oceanography*: 105070
64. **Suryan et al.** 2021. Ecosystem response persists after a prolonged marine heatwave. *Scientific Reports*. <https://www.nature.com/articles/s41598-021-83818-5>
63. Arimitsu et al. 2021. Heatwave-induced synchrony within forage fish portfolio disrupts energy flow to top pelagic predators. *Global Change Biology* DOI: 10.1111/gcb.15556
62. Wietzman et al. 2021. Changes in rocky intertidal community structure during a marine heatwave in the northern Gulf of Alaska. *Frontiers in Marine Science* 8 10.3389/fmars.2021.556820
58. Piatt et al. 2020. Extreme mortality and reproductive failure of common murrelets resulting from the northeast Pacific marine heatwave of 2014-2016. *PLoS ONE* 15:e0226087
56. Melvin et al. 2019. Lessons from seabird conservation in Alaskan longline fisheries. *Conservation Biology* 33:842-852
48. Gladics et al. 2017. Fishery-specific solutions to seabird bycatch in the U.S. West Coast sablefish fishery. *Fisheries Research* 196:85-95
45. **Suryan et al.** 2016. Temporal shifts in seabird populations and spatial coherence with prey in the southeastern Bering Sea. *Marine Ecology Progress Series* 549:199-215
39. Paredes et al. 2014. Foraging responses of black-legged kittiwakes to prolonged food shortages around colonies on the Bering Sea Shelf. *PLoS ONE* 9(3):e92520, 10.1371/journal.pone.0092520

23. **Suryan** et al. 2009. Environmental forcing on life history strategies: Evidence for multi-trophic level responses at ocean basin scales. *Progress in Oceanography*, 81:214-222, doi:10.1016/j.pocean.2009.04.012
18. **Suryan** et al. 2007. Migratory routes of short-tailed albatrosses: Use of exclusive economic zones of North Pacific Rim countries and spatial overlap with commercial fisheries in Alaska. *Biological Conservation* 137:450-460
15. **Suryan** et al. 2006. Site-specific effects on productivity of an upper trophic-level marine predator: Bottom-up, top-down, and mismatch effects on reproduction in a colonial seabird. *Progress in Oceanography* 68:303-328
9. **Suryan** et al. 2002. Short-term fluctuations in forage fish availability and the effect on prey selection and brood-rearing in the black-legged kittiwake (*Rissa tridactyla*). *Marine Ecology Progress Series* 236:273-287
7. **Suryan** and Irons. 2001. Colony and population dynamics of black-legged kittiwakes in a heterogeneous environment. *Auk* 118:636-649
5. **Suryan** et al. 2000. Prey switching and variable foraging strategies of black-legged kittiwakes and the effect on reproductive success. *Condor*. 102:375-385
2. **Suryan** and Harvey. 1998. Tracking harbor seals (*Phoca vitulina richardsi*) to determine dive behavior, foraging activity, and haul-out site use. *Marine Mammal Science* 14:361-372

### Book Chapters

- Henkel, S.K., **R.M. Suryan**, B.A. Largerquist. 2014. Marine renewable energy and environmental interactions: Baseline assessments of seabirds, marine mammals, sea turtles, and benthic communities on the Oregon shelf. *In Marine Renewable Energy Technology and Environmental Interactions*. M. A. Shields and A.I.L. Payne (Eds.). DOI 10.1007/978-94-017-8002-5. Springer, Dordrecht.
- Jodice, P.G.R. and **R.M. Suryan**. 2010. The transboundary nature of seabird ecology. *In S.C. Trombulak and R.F. Baldwin (eds.), Landscape-scale Conservation Planning*, DOI 10.1007/978-90-481-9575-6\_8, Springer Science+Business Media B.V.

### Postdoctoral Advising

- Bia Dias, 2021-present. *Ecosystem Models of Prince William Sound and the Gulf of Alaska*
- Sarah Traiger, 2020-present. *Gulf Watch Alaska nearshore component synthesis*.
- Rachael Orben, 2015-2017. *Modeling 3-dimensional movements of seabirds*.

### Graduate Student Major Advisor

- Jane Dolliver, M.S. Department of Fisheries and Wildlife, Oregon State University, *Using satellite imagery to count nesting albatross from space*. 2015 - 2019.
- Stephanie Loreda. M.S. Department of Fisheries and Wildlife, Oregon State University, *Movement and habitat use of seabirds along the Oregon coast*. 2015-2018.
- Jessica Porquez, M.S. Marine Resource Management, College of Earth, Ocean, and Atmospheric Sciences, Oregon State University, 2013 - 2016, *Spatiotemporal drivers of seabird distribution at the Pacific Marine Energy Center off Newport, Oregon*.
- Cheryl Horton, M.S., Department of Fisheries and Wildlife, Oregon State University, 2011-2014, *Effects of bald eagle (Haliaeetus leucocephalus) disturbance on the common murre (Uria aalge) meta-population breeding in coastal Oregon*. (Co-advise with Dr. Katie Dugger).
- Amelia O'Connor, M.S., Marine Resource Management, College of Earth, Ocean, and Atmospheric Sciences, Oregon State University, 2011- 2013, *Distributions and fishery associations of immature short-tailed albatrosses, Pheobastria albatrus, in the North Pacific*.

Amanda Gladics, M.S. Marine Resource Management, College of Oceanic and Atmospheric Sciences, Oregon State University, 2009 – 2012, *Marine predator diets in the northern California current and responses to changing foraging conditions.*

Karen Fischer, M.S., Department of Fisheries and Wildlife, Oregon State University, 2005-2008, *Marine habitat use of black-footed and Laysan albatrosses during the postbreeding season and their spatial and temporal overlap with commercial fisheries.* (Co-advised with Dr. Daniel D. Roby)

### **Graduate Student Committees**

Michelle Kissling, Ph.D. University of Montana, 2020 - present, Predicting dynamics and viability of an ice-associated species, the Kittlitz's murrelet. (Advisor, Dr. Paul Lukacs)

Sam Stark, M.S., Department of Fisheries and Wildlife, Oregon State University, 2017 - 2019, *Seabird Recolonization: Mechanisms and Enhancement.* (Advisor Dr. Daniel Roby)

Peter Kappes: Ph.D., Department of Fisheries and Wildlife, Oregon State University, 2011 - 2019, *Reproductive ecology and population dynamics of the Adélie Penguin (*Pygoscelis adeliae*).* (Advisor, Dr. Katie Dugger)

Adam Peck-Richardson, M.S., Department of Fisheries and Wildlife, Oregon State University, 2014 - 2017, *Double-crested cormorants (*Phalacrocorax auritus*) and Brandt's cormorants (*P. penicillatus*) breeding at East Sand Island in the Columbia River estuary: foraging ecology, colony connectivity, and over-winter dispersal.* (Advisor Dr. Daniel Roby)

Marisa Litz: Ph.D., Department of Fisheries and Wildlife, Oregon State University, 2012-2016, *Fatty acids and stable isotopes of juvenile pacific salmon (*Onchorhynchus spp.*) prey: implications for salmon growth in the California Current Ecosystem.* (Advisor, Dr. Jessica Miller)

Juliet Lamb: Ph.D., School of Agricultural, Forest, and Environmental Sciences, Clemson University, 2013 - 2016, *Movement patterns, population dynamics, and risk factors for Brown Pelicans in the northern Gulf of Mexico* (Advisor, Dr. Patrick Jodice)

Norma Vazquez: M.S., Department of Fisheries and Wildlife, Oregon State University. 2011 - 2013. *Spatial and temporal distribution of juvenile Steller sea lion (*Eumetopias jubatus*) predation events in Prince William Sound, Alaska.* (Advisor, Dr. Marcus Horning)

Stephanie Collar: M.S., Department of Fisheries and Wildlife, Oregon State University, 2010 - 2013, *Reproductive behavior of Caspian terns in response to nesting habitat manipulation.* (Advisor Dr. Daniel Roby)

Stephen Meck: M.S., Department of Fisheries and Wildlife, Oregon State University, 2010 - 2013, *Steller sea lion movement patterns in the Gulf of Alaska.* (Advisor, Dr. Marcus Horning)

Caren Barcelo: M.S., Department of Fisheries and Wildlife, Oregon State University, 2010 – 2011, *Marine habitat use of loggerhead sea turtles.* (Advisor Dr. Selina Heppell)

Kirsten Bixler: M.S., Department of Fisheries and Wildlife, Oregon State University, 2008 – 2010, *Pigeon guillemot reproductive biology and foraging ecology in Prince William Sound Alaska.* (Advisor Dr. Daniel Roby)

Annie Pollard: M.S., Oregon Institute of Marine Biology, University of Oregon, 2006 – 2008, *Leach's storm-petrel reproductive biology on the southern Oregon coast.* (Advisor: Dr. Alan Shanks & Ms Janet Hodder).

### **Undergraduate Student Projects**

Alessandra Jimenez-Yap, National Science Foundation, Research Experience for Undergraduate program, *Spatial and temporal variation in the diet of the Common Murre (*Uria aalge*) in the California Current System: A macroscale comparison.* Summer 2014

Emma Nelson, National Science Foundation, Research Experience for Undergraduate program, *The hunger games: provisioning rates and implications for common murre (Uria aalge) chicks*. Summer 2012

Laura Filliger, National Science Foundation, Research Experience for Undergraduate program, *Interannual variation and seasonal changes in black rockfish (Sebastes melanops) diets*. Summer 2011

Leah Segui, National Science Foundation, Research Experience for Undergraduate program, *Species composition and energy density of black rockfish Sebastes melanops diets off Newport, Oregon*. Co-advise with Dr. Richard Brodeur, Summer 2010

Amanda Stewart, National Science Foundation, Research Experience for Undergraduate program, *Factors affecting intra-colony variation in reproduction of common murre, Uria aalge*. Summer 2009

Hannah Waters, National Science Foundation, Research Experience for Undergraduate program, *Common murre diets and effects of ocean conditions on breeding success*. Summer 2008

Amanda Gladics: Department of Natural Resources, Oregon State University, *Study of common murre at Yaquina Head*. Summer 2007

Kirsten Heesacker: Department of Fisheries and Wildlife, Oregon State University, *Outreach display for Oregon Sea Grant visitor center*. Summer 2007

**Invited and Peer-Selected Presentations** (24 invited seminars, 53 invited presentations, contributor on 180 oral or poster presentations)

### **Grants and Contracts**

*Awarded (\$26.4M total [57 awards]). Selected examples below.*

Exxon Valdez Oil Spill Trustee Council, Gulf Watch Alaska Long-Term Ecosystem Research and Monitoring Program 2022-2026. Co-Principal Investigator with over 30 Co-Principal Investigators from 17 sub-projects

NOAA Alaska Fisheries Science Center, Ecosystem variability and groundfish prey resources in the Northern Bering Sea. 2021. Principal Investigator.

Bureau of Land Management: Seabirds at BLM's Yaquina Head Outstanding Natural Area: Distinguishing Contributions Of Bottom-Up vs. Top-Down Control 2017. Principal Investigator

National Fish and Wildlife Foundation: Viewing Albatrosses From Space: Using Satellite Imagery To Count Nesting Birds. 2016. Principal Investigator

National Fish and Wildlife Foundation: Seabird Bycatch Outreach to Alaska Longline Fisheries. 2015. Co-Principal Investigator in collaboration with Ed Melvin (U. Washington)

National Oceanic and Atmospheric Administration: Analysis of Seabird Bycatch in Alaska Groundfish Observer Program Data. 2015. Co-Principal Investigator with Ed Melvin (U. Washington)

National Fish and Wildlife Foundation: Seabird Bycatch Reduction in West Coast Sablefish Fisheries. 2012. Co-Principal Investigator in collaboration with Ed Melvin (U. Washington)

Department of Energy: A Synchronized Sensor Array for Remote Monitoring of Avian and Bat Interactions with Offshore Renewable Energy Facilities. 2011. Principal Investigator with Co-PIs Dr. Roberto Albertani (OSU) and Dr. Brian Polagye (U. Washington)

NOAA Fisheries: Seasonal and Age Class-Specific use of Bering Sea Canyon and Shelf Habitat by Short-tailed Albatrosses: Implications for Fishery Interactions. 2010. Principal Investigator

## Research Cruises

**R/V Sashin:** Southeast Coastal Monitoring, Icy Strait Alaska, 2020, 2022

**NOAA Ship Oscar Dyson:** NOAA Alaska Fisheries Science Center's Recruitment Processes Alliance research, Gulf of Alaska, 2019

**R/V Elakha:** Newport Hydrographic Line, Oregon, monthly 2006-2007, 2013-2016, Pacific Marine Energy Center grid, 2013-2015

**R/V Pacific Storm:** WindFloat Pacific wind energy demonstration site, 2013

**M/V Pukuk:** Research with Japanese film crew, NHK, Aleutian Islands, Alaska, 2010

**F/V Kema Sue:** Albatross capture and satellite tagging, Aleutian Islands, Alaska, 2005, 2006

**F/V Predator:** Albatross capture and satellite tagging, Aleutian Islands, Alaska, 2003

**R/V Alpha Helix:** GLOBEC cruise on the Seward Line, Gulf of Alaska, 1999.

**F/V Shana Rae:** Marine bird and mammal surveys, Monterey Bay to Point Sur, California, 1994-1995.

**S/V Dariabar:** Marine bird and mammal surveys, Gulf of the Farallones, California, 1993-1994

**USS John Paul Jones (DDG 53):** Marine bird and mammal observations to ensure a clear range for ship shock trials, Southern California, 1994

**R/V Point Sur:** Plankton sampling, Monterey Bay, California, 1992