

JAY F. PENNIMAN

Curriculum Vitae

EDUCATION: B.S. Portland State University in Natural Sciences, with emphasis on Wildlife Biology and Native American Studies

WORK HISTORY:

2006 – Present

Project Manager: Maui Nui Seabird Recovery Project, University of Hawai'i, Pacific Cooperative Studies Unit

- Develop strategies and programs to recover endangered seabirds and to ensure survival of native seabirds.
- Identify, pursue and obtain funding to carry out seabird protection and enhancement projects.
- Provide staffing and operations management.
- Discover and protect seabirds on the islands of Maui Nui. Delineate colony areas, initiate breeding biology studies. Initiate predator control projects. Plan and implement habitat restoration projects.
- Work with statewide seabird recovery project group to develop and coordinate inter-agency efforts to carry out research and management of Hawaiian petrels (*Pterodroma sandwichensis*), Newell's shearwater (*Puffinus newelli*), and Band-rumped storm-petrel (*Oceanodroma castro*).
- Design, implement and manage compliance monitoring at industrial wind energy facilities and mitigation activities on Maui.
- Document project methodologies and results for grant funding reports, technical reports and peer reviewed journals.
- Provide education and outreach to inform the public about seabirds and their habitats, threats to their survival and opportunities for volunteer involvement.
- Retrieve downed seabirds, provide necessary assessment and stabilization, and release or transport to rehabilitation facility.
- Direct Save Our Seabirds Program for Maui Nui working in cooperation with DLNR/DOFAW, Maui Electric Company, County of Maui, Haleakalā National Park, Auwahi (Sempra) Wind, TerraForm Power, and Alexander & Baldwin.
- Work collaboratively with Maui District Division of Forestry and Wildlife.

2006 - 2013

- Designed and implemented habitat restoration projects for endangered Hawaiian petrels and threatened Newell's shearwater and the Lāna'i watershed. Used Integrated Pest Management approach to improve the degraded state of the island's watershed.
- Monitored and provided predator protection for Hawaiian stilts (*Himantopus mexicanus knudseni*) and Hawaiian coots (*Fulica alai*) at Lāna'i Wastewater Treatment Facility.
- Satellite tagged adult Hawaiian petrels on Haleakalā and Lāna'ihale to determine at sea foraging range. In cooperation with federal agencies.
- Deployed and retrieved geo locator tags on Hawaiian petrels on Haleakalā and Lāna'i to determine season distribution at sea outside of the breeding season.
- Collected samples for genetics and stable isotope analysis. Cooperated and coordinated with USGS, Smithsonian Institution and Michigan State University.

2006 – 2007

- Designed and implemented monitoring and protection strategy for Blackburn's sphinx moth (*Manduca blackburni*) in the Kanahā Ponds Wildlife Sanctuary.
- Provided response and recovery of Blackburn's sphinx moth larvae where host plant destruction was imminent.
- Provided consulting and inventory services to developers needing to understand the presence and distribution of the Blackburn's sphinx moth on properties slated for development.
- Provided consulting services to federal and state agencies for development of management plans for Blackburn's sphinx moth.

1989 – Present

Natural Resources Consultant – Larix Consulting

- Provide professional services to the County of Maui, Wastewater Division. Conduct surveys at holding ponds for Hawaiian stilt and Hawaiian coot.
- Provided professional services to Hawai'i Department of Land and Natural Resources including first responder to reports of exotic felines and other invasive species on Maui.
- Provided volunteer professional services to Maui Invasive Species Committee (MISC). Crew leader – searches for veiled chameleons (*Chamaeleo calypttratus*). Remote field operations, Lāna'i, control fountain grass (*Pennisetum setaceum*).
- Provided professional services to Auwahi Restoration Group. Night search and destroy Jackson Chameleon (*Chamaeleo jacksonii xantholophus*) in the Auwahi dry forest restoration site.

- 2005 - Annual Nēnē Survey. Search area from Ukumehame to Launiopoko.
- 2003 - Annual census and banding of Wedge-tailed shearwater (*Ardenna pacifica*), 'ua'u kani).
- 1992 -1994 - Newberry Geothermal Pilot Project. Provided habitat assessment and wildlife population estimates for preparation of Environmental Impact Statement (DOE/EIS-0207).
- 1991 - Baseline Surveys of Lacustrine Wetland Vegetation and Waterfowl Use of Silver Lake, Cowlitz County, Washington, prior to introduction of triploid grass carp for aquatic weed control.
- 1988 – 1989 – Conducted research on the Harlequin Duck (*Histrionicus histrionicus*) for the Selkirk-Priest Basin Association. Worked with Idaho Fish and Game and the U.S. Forest Service to improve cooperation and funding for further investigation of Harlequin Duck habitat and occurrence in the Idaho panhandle area.

1983-1989

Staff Biologist: Point Reyes Bird Observatory, Stinson Beach California.

- Conducted population and breeding biology studies on 12 species of seabirds, migrant land birds and three species of marine mammals.
- Managed natural resources of Farallon Islands National Wildlife Refuge in concert with U.S. Fish and Wildlife Service, U.S. Coast Guard and National Marine Sanctuary.
- Conducted at-sea surveys aboard NOAA research ships for seabirds and marine mammals from Point Sur, California to the Olympic Peninsula, Washington and in the Gulf of the Farallones.
- Tracked radio-collared harbor seals (*Phoca vitulina*) from Point Sur to Salt Point, north of Bodega Bay. Flew the coast and hiked to haul-out points. Operated small boat for netting, tagging and measurement of seals.
- Trained volunteers in Farallon Island research and maintenance operations. Conducted media interviews explaining Farallon Island wildlife biology, geology and history.

1981 – 1983

Co-Owner: Northwest Fence Company of Oregon

- Designed, marketed, and installed fencing for ranchers and farmers
- Worked with Oregon Department of Fish & Wildlife to facilitate rancher and farmer participation in fencing riparian corridors to protect and restore native salmonid populations

1979 – 1981

Member: Northeast Oregon Worker Owned Cooperative

- Contracted and performed forestry management activities including tree planting, tree thinning, controlled burning, and cone collection

1978-1979

Cartographer: Atlas of Oregon Indians

- Member of a five-person team that created the first atlas of Oregon Indians.
- Produced maps and graphics to illustrate three sections of the atlas; Anthropology, History, and Contemporary Society.

COMMUNITY SERVICE:

2008 – Present: Member, Seabird Hui. Statewide, multi-agency, recovery planning for Hawaiian petrel, Newell’s shearwater and Band-rumped storm-petrel

2008 – Present: Chairman, Save Our Seabirds Maui. Coordinate multi-agency and business support for public outreach and recovery of light-distracted seabirds in Maui County. Oversee recovery and triage actions for recovered birds

2015 – Present: Member, Kaho‘olawe Island Seabird Restoration Project

2013 – 2015: Member, Project Management Team. Kaho‘olawe Island Seabird Restoration Project Business Plan

2010 – 2013: Member, Working Group, Kaho‘olawe Feral Cat & Introduced Rodent Eradication Business Plan

2008 – Present: Member, Kaho‘olawe Island Faunal Restoration Working Group

CERTIFICATIONS:

2007 – Present: Hazardous Waste Site Worker (29CFR1910.120 (e) (8) and 49CFR172.704) (HAZWOPER) with additional certification in oiled bird response and recovery

2016 – Present: Certified Boat Operator, US Coast Guard/State of Hawai‘i, DLNR

2006 – Present: Certified Pistol Safety and Handling, National Rifle Association

2008 – 2018: Certified Commercial Applicator for Restricted Pesticides, State of Hawai‘i, Department of Agriculture

2006 – 2021: Wilderness First Aid, Child and Adult CPR, & AED, Wilderness Medicine Training Institute

2006 – 2020: Basic Aviation Safety (A-100) & External Load (A-219), US Dept. of Interior, Office of Aviation Safety

PUBLICATIONS:

Wiley, Anne E., Sam Rossman, Peggy H. Ostrom, Christine A. M. France, **Jay Penniman**, Cathleen Bailey, Fern Duvall, Elise F. Zipkin, & Helen F. James. (2019).

From ecologically equivalent individuals to contrasting colonies: quantifying isotopic niche and individual foraging specialization in an endangered oceanic seabird. *Marine Biology*. 166:39.

Longcore, Travis, Airam Rodriguez, Blair Witherington, **Jay F. Penniman**, Lorna Herf, & Michael Herf. (2018). Rapid assessment of lamp spectrum to quantify ecological effects of light at night. *Journal of Experimental Zoology*, 2018; 1–11.

<https://doi.org/10.1002/jez.2184>

Rodriguez, Airam, Nick D. Holmes, Peter G. Ryan, Kerry-Jayne Wilson, Lucie Faulquier, Yovana Murillo, Andre F. Raine, **Jay F. Penniman**, Veronica Neves, Beneharo Rodriguez, Juan J. Negro, Andre Chiaradia, Peter Dann, Tracy Anderson, Benjamin Metzger, Masaki Shirai, Lorna Deppe, Jennifer Wheeler, Peter Hodum, Catia Gouveia, Vanda Carmo, Gilberto P. Carreira, Luis Delgado-Alburquerque, Carlos Guerra-Correa, Francois-Xavier Couzi, Marc Travers, & Matthieu Le Corre. (2017). Seabird Mortality Induced by Land-based Artificial Lights. *Conservation Biology*. 31. 10.1111/cobi.12900

Duffy, David C., Daniela Dutra Elliott, Georgia M. Hart, Keren Gundersen, Joseph Aguon-Kona, Randy Bartlett, Jean Fujikawa, Patrick Gmelin, Cleve Javier, Larry Kaneholani, Tiffani Keanini, Joseph Kona, Julia Parish, **Jay F. Penniman**, & Aaron Works. (2015). Has the Small Indian Mongoose Become Established on Kaua'i Island, Hawai'i? *Pacific Science*, Volume 69, Number 4, October 2015, pp. 559-565.

VanZandt, Marie, Donna Delparte, Patrick Hart, Fern Duvall & **Jay Penniman**. Nesting Characteristics and Habitat Use of the Endangered Hawaiian Petrel (*Pterodroma sandwichensis*) on the Island of Lāna'i. *Waterbirds*, 37(1):43-51.

Wiley, Anne E., Peggy H. Ostrom, Helen F. James, Andreanna J. Welch, Robert C. Fleischer, Hasand Gandhi, John R. Southon, Thomas W. Stafford, Jr, **Jay Penniman**, Darcy Hu, & Fern Duvall, (2013) Millennial-scale isotope records from a wide-ranging predator show evidence of recent human impact to oceanic food webs. *PNAS*, 110, 22, pp. 8972–8977.

Welch, AJ, RC Fleischer, HF James, AE Wiley, PH Ostrom, J Adams, F Duvall, N Holmes, D Hu, **J Penniman** & KA Swindle. (2012). Population Divergence and Gene Flow in an Endangered and Highly Mobile Seabird. *Heredity*, 2012, 1-10.

Allen, Sarah G., **J.F. Penniman**, & D.G. Ainley. (1987). Movement and Activity Patterns of Harbor Seals at Drakes Estero, California, 1986-87. *Annual Report to the Marine and Estuarine Division, National Oceanic and Atmospheric Administration*.

Spear, L.B., T.M. Penniman, **J.F. Penniman**, H.R. Carter & D.G. Ainley. (1987). Survivorship and mortality factors in a population of Western Gulls. In J.L. Hand, W.E.

Southern and K. Vermeer, (Eds.), Ecology and Behavior of Gulls. *Studies in Avian Biology* #10. Cooper Ornithological Society.

Zucker, Jeff, Kay Hummel, Bob Høgfoss, Faun Rae Hosey, and **Jay Forest Penniman**. (1983). Oregon Indians. Culture, History, & Current Affairs, An Atlas and Introduction. Western Imprints, the Press of the Oregon Historical Society, Portland, Oregon.

PRESENTATIONS:

Penniman, Jay F. (2020). Dark Skies and Hawai'i's Wildlife. Oral Presentation to the Lyman Museum, March 9 & 10, Hilo Hawai'i.

Penniman, Jay F. (2020). Maui Nui Seabird Recovery Project. Oral Presentation to the Hawai'i Division of Forestry & Wildlife, Wildlife Core Group.

Adams, Josh, Jonathan Felis, **Jay F. Penniman**, Michelle Hester, Lindsay Young, & Max Czapanaskiy. (2020). At Sea Movements and Ranging Behaviors of Breeding Wedge-tailed Shearwaters (*Ardenna pacifica*) in the Subtropical Hawaiian Metapopulation. Oral Presentation 2020 Pacific Seabird Group Annual Meeting.

Penniman, Jay F. Jennifer K. Learned, Martin J. Frye, & Cecelia E. Frisinger. (2020). Seabird Restoration: Addressing Introduced Predators & Rapidly Rising Sea Level. Oral Presentation 2020 Pacific Seabird Group Annual Meeting.

Learned, Jennifer K., Sasha E. Smith, & **Jay F. Penniman**. (2020). Red-footed Boobies on Maui: First Breeding Account and Implications for Seabird Habitat Protection on High Hawaiian Islands. Oral Presentation 2020 Pacific Seabird Group Annual Meeting.

Frisinger, Cecelia, Jennifer Learned, Martin Frye, & **Jay F. Penniman**. (2020). Reproductive Success at Wedge-tailed Shearwater (*Ardenna pacifica*) Colonies in Maui Nui. Poster Presentation 2020 Pacific Seabird Group Annual Meeting.

Frye, Martin J., Jennifer K. Learned, Karla V. Trigueros, Cecelia E. Frisinger, & **Jay F. Penniman**. (2020). Re-Envisioning The Approach to Predator Control in a Unique Seabird Habitat. Oral Presentation 2020 Pacific Seabird Group Annual Meeting.

Penniman, Jay F., Christine C. Costales, & Dr. Fern P. Duvall. (2019). Restoring Seabirds in Hawai'i: Resilient Beings But Require Our Commitment to Recover. Oral Presentation, 2019 Hawai'i Conservation Conference.

Penniman, Jay F., Jennifer K. Learned, Martin J. Frye, & Karla V. Trigueros. (2019). One Petrel, One Shearwater, Stories of Progress in Restoration on Maui and Molokai. Oral Presentation, 2019 Pacific Seabird Group Annual Meeting.

Penniman, Jay F., Christine C. Costales, & Dr. Fern P. Duvall. (2019). Seabirds, Feral Cats, & People, Striving for Harmony. Oral Presentation, 2019 Pacific Seabird Group Annual Meeting.

Penniman, Jay F., Jennifer K. Learned, Nick Gonde, Katsu Che Frausto, Jeff Schlueter, & Matthew W. McKown. (2018). Acoustic Monitoring For Seabirds On Haleakalā, Maui Change Over Time, 2014 – 2017. Oral Presentation, 2018 Pacific Seabird Group Annual Meeting.

Learned, Jenni, Che Frausto, Martin Frye, Puakea Mo'okini-Oliveira, and **Jay Penniman**. (2018). Habitat characterization of the endangered Hawaiian petrel (*Pterodroma sandwichensis*) on leeward Haleakalā, Maui. Oral Presentation, 2018 Pacific Seabird Group Annual Meeting.

Mo'okini-Oliveira, Puakea, Fern Duvall, Russell Kallstrom, Jennifer Learned, Wailana Moses, and **Jay Penniman**. (2018). Prevalence and status of avian pox virus and implications for Wedge-tailed shearwater (*Ardenna pacifica*) colonies in Maui Nui. Oral Presentation, 2018 Pacific Seabird Group Annual Meeting.

Frye, Martin, Jenni Learned, Che Frausto, Puakea Mo'okini-Oliveira, and **Jay Penniman** (2018). Predator activity and Hawaiian petrel recruitment on leeward Haleakalā. Oral Presentation, 2018 Pacific Seabird Group Annual Meeting.

Frausto, Che, Jennifer K. Learned, & **Jay F. Penniman**. (2018), How to Pick up Chicks Anthropogenic Light at Night Distracts and Disorients Seabirds - A New Strategy To Locate and Recover Fallout Birds. Poster Presentation, 2018 Pacific Seabird Group Annual Meeting.

Penniman, Jay F., Jennifer K. Learned, Nick Gondek, Katsu Che Frausto, Jeff Schlueter, & Matthew W. McKown. (2018). 'Ua'u (Hawaiian Petrel, *Pterodroma sandwichensis*): Nakula Natural Area Reserve and Kahikinui Forest Reserve: Documenting Change Using Automated Acoustic Monitoring. Oral Presentation, 2018 Hawaii Conservation Conference.

Penniman, Jay, Jennifer Learned, & Matthew McKown. (2017). If A Seabird Calls In The Wilderness And No One Is There To Hear, Are Seabirds Still Breeding? Using Automated Acoustic Monitoring to Locate Seabirds in Remote, Difficult to Access Sites in Maui County, Hawai'i. Oral Presentation, 2017 Pacific Seabird Group Annual Meeting.

Frausto, Katsu Che, Jennifer Learned, Emily Severson, & **Jay Penniman**. (2017). Smart Conservation with Smart Devices: Identifying Effective Outreach Tools for Seabird Recovery. Poster Presentation, 2017 Pacific Seabird Group Annual Meeting.

Gallagher, Lynx & **Jay Penniman**. (2017). Techniques, Reflections and Care Practices for Conibear Style Mechanical Trapping in Arid Tropical Ecotypes. Oral Presentation, 2017 Pacific Seabird Group Annual Meeting.

Learned, Jennifer, & **Jay Penniman**. (2017). Early Success in Long-term Monitoring of Protected Hawaiian Petrel Breeding Habitat. Oral Presentation, 2017 Pacific Seabird Group Annual Meeting.

Pederson, Rebecca, Jennifer Learned, Fern Duvall, & **Jay Penniman**. (2017). Band Tracking of Wedge-tailed Shearwaters within Maui Nui. Poster Presentation, 2017 Pacific Seabird Group Annual Meeting.

Penniman, Jay F. Hannah Nevins, & Christine Sheppard. (2016) Seabirds and Human Infrastructure Lighting Conflict – A Review of Current Knowledge and Request to Develop and Implement Mitigating Technologies. Oral Presentation, 2016 Pacific Seabird Group Annual Meeting.

Penniman, Jay F. (2015) Seabirds and Human Infrastructure Lighting Conflict. Invited Spoken Presentation, Animal Responses to Light Roundtable Meeting, Midwest Energy Efficiency Alliance, DOE, Solid State Lighting Program, April 19, 2016, Chicago, Ill.

Penniman, Jay F. (2012) Lānaʻi Forest & Watershed Partnership. Oral Presentation, Forum, Hawaiʻi Association of Watershed Partnerships at 2012 Hawaii Conservation Conference.

Adams, Josh, David G. Ainley, **Jay F. Penniman**, Cathleen Bailey, Joy Tamayose, Fern Duvall, and Holly Freifeld, (2012). Anti-cyclonic Circulation and the Long-range Foraging Movements of Hawaiʻian Petrels (*Pterodroma Sandwichensis*) in the North Pacific. Oral Presentation, 2012 Pacific Seabird Group Annual Meeting.

Penniman, Jay F., Fern Duvall, Samuel Aruch, Christine Costales, David Duffy (2010). Hawaiian Petrel (*Pterodroma sandwichensis*) Endangered Seabird Management on the Island of Lānaʻi. Poster Presentation, 2010 First World Seabird Conference.

Penniman, Jay F., Fern P. Duvall II. (2010) Wedge-tailed Shearwater (*Puffinus pacificus*) on the Islands of Maui Nui. Oral Presentation, 2010 Hawaiʻi Conservation Conference.

Costales, Christine C., Mos Masicampo, Edward T. Morimoto, Roland Pili Gella, **Jay F. Penniman**, Fern P. Duvall II. (2010). Outreach and Public Education for Endangered Species and Watershed Restoration on the Island of Lanaʻi. Oral Presentation, 2010 Hawaiʻi Conservation Conference.

Adams, J., D.G. Ainley, **J. Penniman**, H. Freifeld, S. Flora (2010). Anti-cyclonic circulation and the long-range foraging movements of Hawaiian Petrels (*Pterodroma sandwichensis*) in the North Pacific. Invited Spoken Presentation. *Eos Trans. AGU*, 91(26), Ocean Science, Meeting. AGU Ocean Sciences 22–26 February 2010, Portland, OR.

Duvall, F.P., **Jay Penniman**, Brooke Mahnken, Christine Costales. (2009). Experimental Restoration of Lana‘ihale Montane Mesic forest for ‘Ua‘u (*Pterodroma sandwichensis*) Habitat and Watershed Enhancement. Poster Presentation 2009 Hawai‘i Conservation Conference.

Penniman, J.F., F.P. Duvall II, C.C. Costales, (2008). Hawaiian Petrel (*Pterodroma sandwichensis*) on the Island of Lāna‘i, Hawai‘i – A Previously Unknown Breeding Colony. Contributed Talk, Pacific Seabird Group Annual Meeting.

Penniman, Jay, Fern Duvall, Christine Costales. (2007). The Lāna‘ihale ‘Ua‘u colony: Management guided by Research Results. Oral Presentation 2007 Hawaii Conservation Conference.

Adams, J., D. G. Ainley, **J. F. Penniman**, and H. Freifeld. (2007). Summer movements of ‘Ua‘u (Hawaiian Petrel, *Pterodroma sandwichensis*) nesting on Haleakalā and Lāna‘i: can we use satellite tracking to gain new information and advise conservation management? Poster Presentation. 34th Annual Meeting of the Pacific Seabird Group. 7-11 February, 2007 Asilomar, California.

Penniman, Jay, Fern Duvall, (2006). Blackburn’s Sphinx Moth on Windward Maui. Poster Presentation. 2006 Hawai‘i Conservation Conference.

Adams, Josh, David G. Ainley, Holly Freifeld, **Jay F. Penniman**, Fern Duvall, Joy Tamayose, Cathleen Bailey, Nick Holmes, Megan Laut, Greg Spencer, (2006) Summer Movements of ‘Ua‘u (Hawaiian Dark-rumped Petrel *Pterodroma phaeopygia sandwichensis*) Nesting on Haleakalā & Lāna‘i: Can We Use Satellite Tracking to Gain New Information and Advise Conservation Management? Contributed Talk, The Wildlife Society 2006 Workshop – Seabird Conservation & Management in Hawai‘i.

Penniman, Jay F., Fern P. Duvall, (2006). ‘Ua‘u on Lāna‘ihale: History and Current Status. Contributed Talk, The Wildlife Society 2006 Workshop – Seabird Conservation & Management in Hawai‘i.