

Ellen Chenoweth Ph.D.

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EDUCATION

Ph.D. Fisheries, University of Alaska Fairbanks. College of Fisheries and Ocean Sciences 8/2018
Fairbanks, AK. *Bioenergetic and economic impacts of humpback whale depredation at hatchery release sites in Southeast Alaska.*
Co-advisors Drs. Megan McPhee and Shannon Atkinson
B.A. Biology Cum Laude, Kalamazoo College. Kalamazoo, MI 6/2008
Study Abroad: Oaxaca, Mexico 6 months 2006-2007

PROFESSIONAL EXPERIENCE

Assistant Research Professor University of Alaska Fairbanks. 12/2022 - present

Principal Investigator Rural Alaska Students in One-Health Research. 7/2022 - present

A National Institutes of Health STEM Education Partnership Award (SEPA) award. Sitka, AK. (July 2019 -June 2024).

This program is a partnership with the Southeast Alaska Tribal Ocean Research Network to mentor students in rural Southeast Alaska in One-Health research programs in their communities. More about the program is available at <https://rasor.alaska.edu/>.

Duties include: Program and course design, course instruction, personalized research mentoring, research project development, budgeting, reporting, compliance (FERPA, IRB, Minors on campus, Title IX), marketing, outreach and recruitment, coordinating with grant partners, running meetings, supervising program coordination, outreach, data analysis, website maintenance, cross-cultural communication.

Affiliate Collaborating Assistant Professor of Biology, University of Alaska Southeast. Juneau, AK 2019 – present

Program Director Rural Alaska Students in One-Health Research. 2019 – present

Research Advising and Mentorship Professional BLaST (Biomedical Learning and Student Training) 2018 – present

University of Alaska Fairbanks College of Natural Sciences and Math. Under the National Institutes of Health (NIH) Building Infrastructure leading to Diversity (BUILD) award known as Sitka, AK.

Duties include: research mentoring, academic counseling, course design and instruction, running professional development seminars (academic publishing 2021; mentorship training 2019; personality in career planning 2019).

Volunteer NOAA Marine Mammal Stranding Network. Sitka, AK & Juneau, AK 2009 – present

Laboratory Instructor University of Alaska Southeast. Juneau, AK 2012

Writing and Biology Tutor University of Alaska Southeast 2011-2013

Research Technician J. Straley Investigations/University of Alaska Southeast. Sitka, AK. 2009-2011

Seasonal Research Technician Glacier Bay National Park. Gustavus, AK 2007 & 2008

Volunteer Laboratory Technician Michigan State University. East Lansing, MI 2006

Writing Tutor Kalamazoo College, Kalamazoo, MI 2007-2008 & 2005-2006

PUBLICATIONS

Chenoweth EM, Houston J, Huntington KB & Straley JM (2022) A Virtual Necropsy: Applications of 3D Scanning for Marine Mammal Pathology and Education. *Animals* 12.

Burford BP, Wild LA, Schwarz R, **Chenoweth EM**, Sreenivasan A, Elahi R, Carey N, Hoving HJT, Straley JM & Denny MW (2022) Rapid Range Expansion of a Marine Ectotherm Reveals the Demographic and Ecological Consequences of Short-Term Variability in Seawater Temperature and Dissolved Oxygen. *Am Nat* 199:523–550.

Segre PS, Gough WT, Roualdes EA, Cade DE, Czapanskiy MF, Fahlbusch J, Kahane-Rapport SR, Oestreich WK, Bejder L, Bierlich KC, Burrows JA, Calambokidis J, **Chenoweth EM**, Di Clemente J, Durban JW, Fearnbach H, Fish FE, Friedlaender AS, Hegelund P, Johnston DW, Nowacek DP, Oudejans MG, Penry GS, Potvin J, Simon M, Stanworth A, Straley JM, Szabo A, Videsen SKA, Visser F, Weir CR, Wiley DN & Goldbogen JA (2022) Scaling of maneuvering performance in baleen whales: larger whales outperform expectations. *J Exp Biol* 225.

Chenoweth EM, Boswell KM, Friedlaender AS, McPhee MV, Burrows JA, Heintz RA, and Straley JM (2021) Confronting assumptions about prey selection by lunge-feeding whales using a process-based model. *Functional Ecology*. 35(8), 1722–1734.

Chenoweth EM, Criddle KR. (2019) The economic impacts of humpback whale depredation on hatchery-released juvenile salmon in Southeast Alaska. *Marine and Coastal Fisheries* 11(1): 62-75.

Werth A, Kosma MM, **Chenoweth EM**, Straley JM (2019) New views of humpback whale flow dynamics and morphology during prey engulfment. *Marine Mammal Science* 35 (4): 1556 – 1578.

Chenoweth EM (2018) Bioenergetic and economic impacts of humpback whale depredation at salmon hatchery release sites (Doctoral dissertation) University of Alaska Fairbanks.

Wild LA, **Chenoweth EM**, Mueter FJ, Straley JM (2018) Evidence for dietary time series in layers of cetacean skin using stable carbon and nitrogen isotope ratios. *Rapid Commun Mass Spectrom* 32:1425–1438. (cover)

Chenoweth EM, Straley JM, McPhee M, Atkinson S, Reifensstuhl S (2017) Humpback whales feed on hatchery-released juvenile salmon. *R Soc Open Sci* 4: 170180.

Brewer RS, Norcross BL, **Chenoweth E** (2017) Temperature- and size-dependent growth and movement of the North Pacific giant octopus (*Enteroctopus dofleini*) in the Bering Sea. *Mar Biol Res* 13:909–918.

Burrows JA, Johnston DW, Straley J, **Chenoweth EM**, Ware C, Curtice C, DeRuiter SL, Friedlaender AS. (2016) Prey density and depth affect the fine-scale foraging behavior of humpback whales (*Megaptera novaeangliae*) in Sitka Sound, Alaska. *Marine Ecology Progress Series*. 561: 245–260.

Straley JM, Schorr GS, Thode AM, Calambokidis J, Lunsford CR, **Chenoweth EM**, O’Connell T, Andrews RD. (2014) Depredating sperm whales in the Gulf of Alaska: local habitat use and long distance movements across putative population boundaries. *Endangered Species Research*. 24, 125–135.

Chenoweth EM (2013) Trend lines to Headlines: A scientist’s foray into the world of journalism. *Fisheries* 38 (11): 510-511. (cover)

Witteveen BH, Straley JM, **Chenoweth EM**, Baker CS, Barlow J, Matkin C, Gabriele CM, Neilson J, Steel D, von Ziegeler O, Andrews AG, Hirons A (2011) Using movements, genetics and trophic ecology to establish distinctions between regional inshore and offshore aggregations of humpback whales in the Gulf of Alaska. *Endangered Species Research* 14, 217-225.

Chenoweth EM, Gabriele CM, Hill DF (2011) Tidal influences on humpback whale habitat selection near headlands. *Marine Ecology Progress Series*. 423, 279-289.

Currently in Review:

Chenoweth EM, Cotter P, Lanphier K, Straley JM. (in review) Community-based, culturally relevant STEM: Engaging rural and Indigenous students through partnerships, institutional flexibility, and One Health. *Journal of STEM Outreach*

Cotter P, Gildehaus L, **Chenoweth EM**, Straley JM, Hueffer K, Reynolds AJ (in review) Engaging Northern Rural and Indigenous Students: Case Studies Using One Health and Principles of Educational Resilience. *Education in the North*.

PERMITTED FIELDWORK

Marine Mammal Research Field Procedures

I am NOAA fisheries permitted as a co-Investigator in Alaska Waters (NOAA Fisheries #18529) for the following

Vessel operation: unsupervised

I have operated vessels around over 1000s of marine mammals in Alaskan waters including seals, sea lions, humpback whales, minke whales, harbor porpoises, killer whales and sea otters since 2007.

Biopsy Sampling: expert

I have deployed suction cup tags on two humpback whales and assisted with tagging efforts adding up to approximately 28 days of tagging on different trips resulting in deployments on over 15 different animals

Suction-cup tagging: unsupervised

I have deployed passive acoustic recorders (animal-borne tags on whales or autonomously) to record whale sounds of a few occasions

Acoustic, sonar for prey mapping: unsupervised

I have operated vessels around over 1000s of marine mammals in Alaskan waters including seals, sea lions, humpback whales, minke whales, harbor porpoises, killer whales and sea otters since 2007.

Observation or behavior monitoring: expert

I have operated vessels around over 1000s of marine mammals in Alaskan waters including seals, sea lions, humpback whales, minke whales, harbor porpoises, killer whales and sea otters since 2007.

Photograph/Video photo Identification: expert

I have operated vessels around over 1000s of marine mammals in Alaskan waters including seals, sea lions, humpback whales, minke whales, harbor porpoises, killer whales and sea otters since 2007.

Collect, remains for predation study: expert

I have collected live and dead prey from humpback whales and other marine mammals.

Responsible Conduct of Research

expires 2022

Offered by UAF BLaST Program required by National Institutes of Health

FELLOWSHIPS

Dissertation Completion Fellowship

2017 - 2018

National Science Foundation Graduate Research Fellowship (\$132,000)

2012

Marine Ecosystem Sustainability in the Arctic and Subarctic (MESAS) Fellowship, a National Science Foundation Integrative Graduate Research and Engineering Traineeship (NSF IGERT) (\$84,000)

2011

AWARDS and HONORS

Student graduation speaker. University of Alaska Southeast Sitka Campus	2018
University of Alaska Fairbanks Biomedical Learning and Student Training (BLaST) (\$12,000) Co-development a stable isotope techniques lesson for dual-enrolled students at Mt. Edgecumbe High School and the University of Alaska Southeast.	2016
Alaska Marine Science Symposium, Best oral presentation Ph.D. student https://prezi.com/zeecygbbosyy/amss-2015/	2015
Alaska Press Club, Best Science Story (Radio) Humpback whales a Deep Dive [1 st part of 4-part series]	2015
American Fisheries Society Alaska Chapter Student Symposium. Received an award for an excellent oral presentation. \$50	2014
Alaska Sea Grant Research grant \$105,000 (PI Jan Straley to fund fieldwork for my dissertation)	2013
Winner NSF IGERT Video and Poster Competition (\$2,000 and a trip to Washington D.C.) http://www.youtube.com/watch?v=iG6yyWkKtH8	2013
Walt Cunningham Educational Award scholarship to attend WhaleFest in Sitka, AK	2008
Honors on biology comprehensive exams Kalamazoo College Biology Department Including A+ on the oral portion.	2008
Diebold Award Kalamazoo College Biology Department For outstanding oral presentation of senior thesis	2008
Robert Byzda Prize Kalamazoo College Biology Department For demonstrated interest and ability in marine biology	2008
On the Spot Award <i>National Park Service</i> —recognition of quality job performance.	2007

PROFICIENCIES

Data Analysis

I process and analyze data using bomb calorimetry, stable isotope analysis, accelerometer visualization with **Trackplot**, hydroacoustic data analysis (**Echoview**), frequentist regression (linear models, GLM, GAM, hoteling models, including work with dependent data and zero-inflated data), deterministic modeling, economic modeling, and Leslie Matrix analysis. Coding original statistical analysis, process simulation and data management in **R**. Data analysis with **Matlab**. Symbolic Regression with **Eureqa**. I am also proficient in **ArcGIS** and **MapSource**.

Coding example:

Chenoweth, Ellen et al. (2020), Confronting assumptions about prey selection by lunge-feeding whales using a process-based model, Dryad, Dataset, <https://doi.org/10.5061/dryad.7sqv9s4r0>

3-day Echoview Analysis Workshop. San Diego, CA.	June 2013
CATS Tag Data Processing Toolkit Workshop (virtual)	Nov 2020

Field Research

Acousonde animal-borne tag deployment, hydroacoustics, biopsy sampling (rifle and crossbow), photographic identification, CTD deployment, prey sampling, behavioral observation, vessel operation and maintenance. I have conducted research at sea during at least eight multiday cruises in Southeast and Southcentral Alaska in nearshore and offshore waters as well as 50+ day trips.

I also assist with remote necropsies accessed by float planes or Coast Guard flyovers and the necropsies or sample collection from a harbor porpoise, killer whale, three humpback whales, two sea lions, a gray whale and a sea otter.

Volunteer NOAA Marine Mammal Stranding Network. Gustavus, AK; Sitka, AK & Juneau, AK	2007 – present
Small Vessel Operator Course, University of Alaska Southeast	Spring 2019
Outboard Motor Maintenance, University of Alaska Southeast	Spring 2019
Aviation Egress Training	July 2017

Diversity Equity and Inclusion

Alaska Native Dialogues on Racial Equity Project Description. First Alaskans Institute	Mar 2022
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Ensuring Equitable Student Success. Harvard Graduate School of Education. Professional Course. Oct 6 – 29 th	Oct 2020
Introduction to Tlingit (1 cred course) University of Alaska Southeast	Fall 2020
Indigenous Cultures of Alaska (3 credit) University of Alaska Fairbanks	Fall 2019
Racial Equity Team Training. Racial Equity Consultants LLC. Seattle, WA. Nov 28 th – Dec 1st	Nov 2018

Permit Management

NOAA marine mammal permit application and permit reporting
IACUC and IRB application and permit reporting
Alaska Department of Fish and Game collection permit application and reporting

Languages

Spanish (Advanced). Study Abroad 2005- 2006 in Oaxaca, Mexico.

Journalism

Science Multimedia Journalism Intern. Sitka Sound Science Center. Sitka, AK	Summer 2012
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COURSES TAUGHT

I specialize in developing original research designed for dual-enrollment students, Alaska Native, and rural Alaska students. I focus particularly innovative solutions for active learning distance delivery.

One Health Perspectives Marine Mammals of Alaska University of Alaska Southeast, Nome, AK Nome Jumpstart Program	2022
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Introduction to Biological Research Techniques I University of Alaska Southeast. Sitka, AK UAS Rural Alaska Students in One-Health Research (RASOR) (virtual) <i>Various projects</i>	2020 - 2022
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Entering Research: Undergraduate Research Experience. University of Alaska Fairbanks. With Natalia Podlutsкая and Andrew Cyr Rural Alaska Honors Institute (RAHI) (virtual) <i>Students tested hypotheses about the stable isotopes of local, wild and store bought foods.</i>	2020-2021
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Introduction to Stable Isotopes in Research. University of Alaska Southeast with Lauren Wild. Mt. Edgecumbe High School (Boarding School for Rural Alaska Students) <i>Students tested hypotheses about stable isotopes of their friends and classmates when at home and at boarding school</i>	2017 - 2018
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Current Topics in Marine Research. University of Alaska Southeast Sitka Whalefest / UAS Rural Alaska Students in One-Health Research (RASOR) Students attend a science symposium,	2018 - 2022
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Biological Research Practicum. University of Alaska Southeast Various projects	2019
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Biology Independent Study. University of Alaska Southeast Danny, Khor: Effects of Trickle and Mass Releases on Humpback Whale Depredation of Hatchery Salmon Fry in Southeast Alaska	2019
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Introduction to Biology Part II Laboratory Instructor University of Alaska Southeast. Juneau, AK	2012
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ORAL PRESENTATIONS

(1st author only)

Chenoweth EM, Houston JJ, Straley JM (Aug 2022) Eyes in the Sky: 3D Scanning a Dead Humpback Whale with UAS Photogrammetry and Lidar Biennial Conference on the Biology of Marine Mammals, Tampa, FL. Speed Talk.

Chenoweth EM (2021) Rural Alaska Students in One Health Research: Launching Research from Home Shores. International One-Health Symposium. University of Alaska Fairbanks (virtual).

Chenoweth EM (2021) Rural Alaska Students in One Health Research: Launching Research from Home Shores. One-Health Seminar Series. University of Alaska Fairbanks, 2021 (virtual)

Chenoweth EM (2017) Humpback whale predation at salmon hatchery release sites. Alaska Fish Culturists Conference, Sitka AK.

Chenoweth EM (2016) Humpback whale predation at salmon hatchery release sites. 20th Annual Sitka Whalefest, Sitka AK.

Chenoweth EM, Straley JM, Boswell K, Friedlaender A, Reifenstuh S. (2015) Humpback whales are preying on juvenile salmon at hatchery release sites. Biennial Conference on the Biology of Marine Mammals. San Francisco, CA.

Chenoweth EM, Straley, JM (2015) Humpback Whale Predation at Hatchery Release Sites. Alaska Sea Grant Annual Meeting. Anchorage, Alaska. Nov.

Chenoweth EM, Straley, JM (2015) Humpback Whale Predation at Hidden Falls. Northern Southeast Regional Aquaculture Association Board Meeting. Sitka, Alaska. Nov.

Chenoweth EM, Straley JM, Baker DN, Reifenstuh S. (2015) Individual differences in humpback whale foraging behavior at salmon hatchery release sites. Alaska Marine Science Symposium. Anchorage, AK.

Chenoweth EM, Straley JM, Garrison L, Reifenstuh S, Watson B, Gray A Modeling Humpback Whale Predation at Salmon Hatchery Release Sites. (2014) American Fisheries Society Alaska Chapter Student Symposium. Juneau, AK.

Chenoweth EM, Straley JM, McCauley AE, Sheridan T, Garrison L, Moran J, Riley H, Thrower F, Contag B (2012) Humpback Whale Predation at Salmon Enhancement Facilities. Pink and Chum Salmon Workshop. Juneau, AK.

Chenoweth EM, Straley JM, McCauley AE, Sheridan T, Garrison L, Moran J, Riley H, Thrower F, Contag B (2010) Humpback Whale Predation at Salmon Enhancement Facilities. American Fisheries Society Alaska Chapter. Juneau, AK.

POSTERS

Here I only show student projects that were presented in professional conferences. All RASOR presentations and posters can be found at <https://rasor.alaska.edu/student-presentations>.

* Indicates a mentored student.

Williams C*, Hooge T*, Loggins R*, Seay B*, Williams A, **Chenoweth EM**. Which Gustavus community beach has blue mussels with the highest saxitoxin levels? (2021) International One-Health Conference. Fairbanks, Alaska (virtual). April 6 – 11th 2021.

Peterson M*, Djaker K*, Peterson W, **Chenoweth EM**. (2021) The Utility of a Blue Mussel Cage for Paralytic Shellfish Toxin Monitoring. International One-Health Conference. Fairbanks, Alaska (virtual).

Masterman R*, LaBounty K, **Chenoweth EM**, Goff M, Baluss G, (2020) Are sex, year, and banding station predictors of Oregon Junco wing length? Diversity Program Consortium Symposium. (virtual).

Khor D*, **Chenoweth EM**. (2019) Effects of Trickle and Mass Releases on Humpback Whale Depredation of Hatchery Salmon Fry in Southeast Alaska. Science by the Shore Whitney Marine Lab, St. Augustine, Florida. (Best poster).

Chenoweth EM, Friedlaender AS, Burrows JA, Boswell K, Straley JM. (2017) Calculating the most efficient prey patches for humpback whales. Biennial Conference on the Biology of Marine Mammals, Halifax NS, Canada.

Chenoweth EM, Straley JM, McPhee M, Wooller M, (2015) Pilot study of humpback whales that prey on hatchery-released juvenile salmon. Biennial Conference on the Biology of Marine Mammals, Stable Isotope Workshop. San Francisco, CA.

Chenoweth EM, Straley JM, Garrison L, Reifenstuh S, Watson B, Gray A, Friedlaender AS, Johnston DW, Burrows J. (2014) Don't feed the whales: Humpback whale predation at Alaska's salmon hatcheries. Alaska Marine Science Symposium. Anchorage, AK.

Chenoweth EM, Straley JM, Garrison L, Reifentuhl S, Watson B, Gray A, Friedlaender AS, Johnston DW, Burrows J. (2013) Don't feed the whales: Humpback whale predation at Alaska's salmon hatcheries. 20th Biennial Conference on the Biology of Marine Mammals. Dunedin, New Zealand.

Chenoweth EM, Gabriele CM, Hill DF (2012) Tidal influences on humpback whale habitat selection near headlands. Alaska Marine Science Symposium.

Chenoweth EM, Straley JM, McCauley AE, Sheridan T, Garrison L, Moran J, Riley H, Thrower F, Contag B (2011) Humpback Whale Predation at Salmon Enhancement Facilities. Alaska Marine Science Symposium. Anchorage, AK.

Chenoweth EM, Gabriele CM, Hill DF (2009) Tidal influences on humpback whale habitat selection near headlands. 18th Biennial Conference on the Biology of Marine Mammals, Quebec, QC, Canada.

SCIENCE OUTREACH

4D Virtual Whale Necropsy

2021

Conceived and produced an online necropsy experience using annotated 3D scans of a dead humpback whale during the necropsy process. Funded by the UAF BLAST program.
<https://sites.google.com/alaska.edu/virtual-necropsy/home>

Assistant Producer and Writer: Whales in the Wild Video

2020

<https://www.youtube.com/watch?v=79M-Qd35b7w>

Whale Math: How High School Trigonometry Helps Us Study Whales

Vashon Public High School. Vashon, WA (virtual)

2020

Invited Speaker

Sitka WhaleFest, Annual Community Science Festival Sitka, AK
 Craig Whalefest, Annual Community Science Festival Craig, AK

Nov 2016
 2012, 2019

H.S. National Ocean Science Bowl Southeast AK Region Competition Coordinator

Just-for-fun ocean science trivia competition for high school students attending Sitka Whalefest

2016, 2018 - 2022

Created a 50+ piece phylogenetically accurate mobile

2018

On display in the University of Alaska Southeast main atrium and used it teach phylogenetics.

Gustavus School. Gustavus, AK

2016

Tikigak School. Pt. Hope, AK

2015

St. Paul Island School. St. Paul, AK. Bering Sea Days and Summer Science Camp

2015

Energy in Action Lesson

Developed a 3 day lesson as part of the Scientists in the Schools Program where students do a calorimetry lab and visualize biologging data to examine foraging behavior.

Angoon High School. Angoon, AK

2014

Tenakee Springs, AK (video conferencing)

2014

Mt. Edgecumbe High School. Sitka, AK

2014 - 2019

Founder and coordinator WhaleFest Film Fest.

2013 - 2015

A free public screening for amateur and independent filmmakers about marine research in Alaska, an official event of Sitka WhaleFest.

H.S. National Ocean Sciences Bowl Coach Sitka Sound Science Center

2010-2011

SCIENCE JOURNALISM AND WRITING

Chenoweth EM (2021) Experience a 4D Whale Necropsy from the Comfort of your Computer. Alaska Marine Mammal Stranding Newsletter Fall: 24–26. <https://www.fisheries.noaa.gov/resource/document/alaska-region-marine-mammal-stranding-network-newsletters>

Chenoweth, EM “Alaska Programme launches research careers from home shores.” World Wildlife Foundation The Circle. World Wildlife Foundation Arctic Program. July 13, 2020 <<https://arcticwwf.org/newsroom/the-circle/a-new-deal-for-the-arctic/alaska-programme-launches-research-careers-from-home-shores/>>

Waldholz R, Chenoweth EM (2015) “Humpbacks and the Endangered Species Act: A deep dive” [4-part radio series]. <<http://www.kcaw.org/2015/01/06/humpbacks-and-the-endangered-species-act-a-series/>>
Aired in full on KCAW Raven Radio in Sitka.
Abbreviated segments aired on *Alaska News Nightly*.

Chenoweth, EM “Scientists look for ways to kill Sitka tunicate”
<<http://www.kcaw.org/2012/09/24/scientists-look-for-ways-to-eradicate/>>
KCAW Raven Radio. Sitka, Alaska. Sept 24, 2012
Alaska Public Radio Network. Statewide Alaska. Sept 27, 2012
Alaska Fisheries Report. Oct 5, 2012

Chenoweth, EM “Goat DNA inspires Tlingit weaver” KCAW Raven Radio. Sitka, AK July 23, 2012.
<<http://www.kcaw.org/2012/07/23/goat-dna-inspires-tingit-weaver/>>

Chenoweth, EM “Sitka Intertidal Sites Longtime Study Spots” *Daily Sitka Sentinel*. August 16, 2012.

Chenoweth, EM “Otter study to examine habitat differences in Southeast” KCAW Raven Radio. Sitka, AK. June 29, 2012
<<http://www.kcaw.org/2012/06/29/otter-study-to-examine-habitat-differences-in-southeast>>

PRESS COVERAGE

<https://www.juneauempire.com/news/to-the-rescue-volunteers-stand-ready-to-help-stranded-marine-animals/>
https://www.nytimes.com/2017/07/12/science/humpback-whales-salmon-alaska.html?_r=0
<https://www.newscientist.com/article/2140340-whales-sneak-into-shallow-water-to-eat-salmon-from-hatcheries/>
<https://www.sciencenews.org/blog/science-ticker/whales-feast-when-hatcheries-release-salmon>
<https://www.adn.com/alaska-news/science/2017/07/13/clever-humpback-whales-move-in-for-a-meal-at-alaska-salmon-hatcheries/>
<https://www.facebook.com/TheWeatherChannel/videos/10155647897765921/>

REFERENCES

Ms. Jan Straley, Professor Emerita of Marine Biology, University of Alaska Southeast
Principle Investigator. UAS RASOR grant (2019 – June 2022)
Dissertation Committee member (2011 – 2018),
Supervisor, research mentor and collaborator (2009 – 2011).
jmstraley@alaska.edu; (907) 747-7779

Dr. Arleigh Reynolds, Professor of Clinical Nutrition; Director of One-Health. University of Alaska Fairbanks
Co-Principle Investigator. BLAST Program (an NIH BUILD grant) and RASOR program collaborator.
ajreynolds@alaska.edu; 907-474-1928

Dr. Megan McPhee, Associate Professor School of Fisheries and Ocean Sciences University of Alaska Fairbanks
Dissertation committee Co-Chair (2011 – 2018).
Mvmcphee@alaska.edu; (907) 796-5464