

ISLAND LAB PROJECTS

Behavioral Research and Instructional Neuroscience
B.R.A.I.N. Laboratory
Carnegie 304, Phone: 503-352-1537
Heide Island, Ph.D., Thesis Advisor
Cell Phone: 503-729-2552
Website: <http://undergraduatementoring.wordpress.com>



Otter Laboratory Group

DESCRIPTION

Research is an on-going process it doesn't stop and start with the academic year. In fact, much of the most important work occurs during the calendar year when there is no class. During this time, the winter and summer months, investigators have more dedicated time to: read the literature, write strong bibliographies and introductions for papers, submit Institutional Review Board proposals, collect data on nonhuman subjects, and conduct analyses. This project investigates captive behavior of the Southern sea otter and how they use their enclosure space. We're investigating their activity budgets, the effect of enrichment items, visitor number, and visitor affect how the otters use their enclosure space.



1. Sea Otter Research (PRISM Grant Funded)

- a.) **Oregon Zoo Activity Budget** (Southern Sea Otter) – enclosure utilization, stereotypy, and visitor impact in behavioral patterns
- b.) **Northern Sea Otter Population Scans** (Awaiting Confirmation from Deanna Lynch)
 - U.S. Fish and Wildlife Service Northern Sea Otter Survey – Ground sea otter
 - population scans in the Ozette area of the Olympic National Park, WA. See the appended maps for both the Olympic National Park where Ozette is as well as the map for driving (though if you have GPS on your phone, that will no doubt be easier).
 - **Dates:** *June 22 – June 26.* Monday and Friday are travel days via rental car (to be reserved).
 - You have reservations at the Straitside Resort, 241 Front St., Sekiu, WA 98381, 360-963-2100 Sekiu, <http://www.straitsideresort.com>. This is almost a 6-hour trip, so leave early in Monday morning.
 - **Per Person Packing Check List (i.e., you should both have these):**
Note: You will be packing most of this stuff 3-4 miles/day so travel light without compromising needs. I did similar scans in the early 1990s in Glacier Bay of harbor seal populations so I can help you with what you will need, much of it will be the same. The Outback will also rent some of this to us.

- Binoculars (magnification power to be determined, at least 10+)
- Backpack
- Water bottles (a couple)
- Warm clothes
- Rain gear
- Field chairs
- Snacks for the field (e.g., GORP, dried fruit)
- Aspirin and allergy medication
- Bug spray (serious bug spray – get this at REI)
- Anti-itch ointment (REI)
- Sunscreen

Plan B Oregon Aquarium Weekend Trips

- There is a possibility that the Oregon Zoo observations will be cut short. The Stellar Cove enclosure is getting remodeled over the summer, supposedly starting with the sea lion enclosure and then the sea otter enclosure. It is possible this will also extend into the fall (sigh – fingers crossed it doesn't); in that event, we need to come up with some alternatives for you. This may be to look into the Oregon Aquarium. Fortunately, Hannah's mom lives in Newport, so potentially you will have a place to stay for a couple weekend trips. Conceivably, you could choose a weekend each month to go there and observe their otters (all males) both in the summer and then in the fall (should we need to). If you were there all day on Saturday and Sunday that would be essentially 12 hours of observation. It would make for an exhausting weekend, but productive and condensed. We could then review, enter and analyze your data and also compare their population with the Zoo data we already have.
- I have contacted them to get biographical profiles on their all-male raft, I'm awaiting their reply, hopefully they are more accommodating than the Zoo.
- Oregon Aquarium Link: <http://aquarium.org/exhibits/sea-otters>

2. North American River Otter Research

- a.) **Oregon Zoo Activity Budget** (North American River Otter) – enclosure utilization, stereotypy, and visitor impact in behavioral patterns – Establish an ethrogram
- b.) **Tilly and Little Pudding – Surrogacy and Bonding Strength**
 - Compare the pair bond between T and LP relative to Thelma and Juno (Sea Otters)
 - Stereotypies? Suckling/Flehmen response?
 - Establish Weekly (preferably two): Observation Visits

Checklist

- ✓ Zoo Research Pass
- ✓ Trimet Pass

READING LIST

Text

Larson, S., Bodkin, J.L., VanBlaricom, G.R. (2015). Sea Otter Conservation. San Diego, CA: Academic Press.

Articles – To Be Updated

- Ballachey, B. E., Monson, D. H., Esslinger, G. G., Kloecker, K., Bodkin, J., Bowen, L., & Miles, A. K. (2014). 2013 update on sea otter studies to assess recovery from the 1989 Exxon Valdez oil spill. *Prince William Sound, Alaska: U.S. Geological Survey Open-File Report, 2014-1030*, 1–40.
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- Estes, J., Tinker, M., Williams, T., & Doak, D. (1998). Killer Whale predation on Sea Otters linking Oceanic and Nearshore Ecosystems. *Science Magazine*, 282, 473-475.
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- Hasenjager, M. (2011). Effects of increased feeding frequency on captive N. American River otter (*Lontra Canadensis*) behavior. *Zoo and aquarium management*, Michigan State University, 1–84.
- Hosey, G. R., Hill, S. P., and Leber, M. L., (2012). Can zoo records help answer behavioral research questions? *Zoo Biology*, 31, 181–196.
- Hosey, G. R. (2009). Zoo animals and their human audiences: What is the visitor effect? *Animal Welfare*, 9, 343–357.
- Jameson, R. & Johnson, A. (1993). Reproductive characteristics of female sea otters. *Marine Mammal Science*, 9 (2), 156-167.
- Leon, M. (1983). Chemical-communication in mother-young interactions. Pheromones and Reproduction in Mammals, 39–77.
- Morabito, P. and Bashaw, M. J. (2012). A survey of abnormal repetitive behaviors in North American river otters housed in zoos. *Journal of Applied Animal Welfare Science*, 15, 208–221.
- Packard, J. M., & Ribic, C. A. (1981). Classification of the behavior of sea otters (*Enhydra lutris*). *Canadian Journal of Zoology*, 60, 1362–1373.
- Riedman, M. & Estes, J. (1990). The sea otter (*Enhydra lutris*): Behavior, Ecology, and Natural History. *Biological Report*, 90 (14), 1-117.
- Schramm, Y., et al. (2014). New evidence for the existence of southern Sea Otters (*E.I. nereis*) in Baja California, Mexico. *Marine Mammal Science*, 30 (3), 1264–1271.
- Shimek, S. & Monk, A. (1977). Daily activity of sea otters off the Monterey Peninsula, California. *Journal of Wildlife Management* 41 (2), 277-283.
- Swaisgood, R. and Shepherdson, D. (2005). Scientific Approaches to Enrichment and Stereotypies in Zoo Animals: What's Been Done and Where Should We Go Next? *Zoo Biology* 24:499-518.
- Tinker, M., et al. (2012). Structure and mechanism of diet specialization: Testing models of individual variation in resource use with sea otters. *Ecology Letters*, 15, 475-483.
- Walker, K. A., Davis, J.W., and Duffield, D.A. (2008). Activity Budgets and Prey Consumption of Sea Otters (*E.I. kenyoni*) in Washington. *Aquatic Mammals*, 34 (4), 393–401.
- Wyatt, T.D. (2014). Pheromones and reproduction in social groups: Control or cooperative signaling? In *Pheromones and Animal Behavior: Chemical Signals and Signatures*. Cambridge, England: Cambridge University Press. Pp. 133–148.
- Yeates, L.C., Williams, T.M., and Fink, T.L. (2007). Diving and foraging energetics of the smallest marine mammal, the sea otter (*Enhydra lutris*). *Journal of Experimental Biology*, 210, 1960-1970.
- Zapico, T.A. (1999) First documentation of flehmen in a common hippopotamus (*Hippopotamus amphibius*). *Zoo Biology*, 18:5, 415–420.

B.R.A.I.N. Lab Relevant Dates

DATE		To Submit
Friday August 14, 2015	Student End-of-Summer Report - As per your PRISM Award	Report
Friday August 24, 2015	AZA Poster Due to Cheryl Wallen: cwallen@aza.org	Poster
Monday August 31, 2015	Week I: First Day of Fall Semester	
Tuesday September 1, 2015	Week I: First Lab Meeting at 11:30 – 12:30 pm (2nd and 4th Tuesday of each month)	Pac Thai or 1910 Main
Saturday & Sunday September 19 th & 20 th	2015 AZA Annual Conference https://www.aza.org/annualconference/	Salt Palace Convention Cntr, Salt Lake City, UT
Tuesday Nov. 10, 2015	PRISM Conference, MPR 3:30 – 6:00	
Wednesday, Nov. 11, 2015	American Evaluation Society Conference: http://www.eval.org/Evaluation2015	Chicago, IL
Nov. 16, 2015	WPA Abstract and Registration deadline: http://westernpsych.org/convention/	Abstract and Registration
Monday February 1, 2016	OAS Abstract, Registration Due via Email http://www.oas.pdx.edu	Abstract Due and Registration
Friday February 19	OAS Presentations Deadline	OAS PowerPoint
Saturday February 27, 2016	Oregon Academy of Science (OAS) Conference http://www.oas.pdx.edu	Pacific University Forest Grove, OR
Friday April 15, 2016	WPA Poster Deadline	Posters Due
Thursday April 21, 2016	SPD PowerPoint Presentation Deadline	Presentations Due
Friday April 22, 2016	Senior Project Day Presentation Practice, Round I	Presentations
Monday April 25, 2016	Senior Project Day Presentation Practice, Round II	Presentations
Wednesday April 27, 2016	Senior Projects Day	Presentations
April 28 – May 1, 2016	Western Psychological Association Conference http://westernpsych.org/convention/	Westin Long Beach, CA

Other deadlines

Graduation Registration	TBA
SPD Registration	TBA
SPD Abstract Submission	TBA
CAS Research Awards	TBA

Otter Resource Links

Oregon Zoo

<http://www.oregonzoo.org/discover/animals/north-american-river-otter>

<http://www.oregonzoo.org/discover/animals/southern-sea-otter>

<http://www.kgw.com/story/news/local/animal/2015/05/08/sea-otter-thelma-is-oregon-zoo-mom-of-the-year/26995799/>

<http://www.oregonzoo.org/news/2014/10/rescued-sea-otter-pup-wrestles-old-timer-eddie>

Defenders of Wildlife (2000). Southern sea otter summary. Retrieved 02/10/2015.

http://www.defenders.org/sites/default/files/publications/southern_sea_otter_fact_sheet.pdf

Doroff, A. (2014). Sea Otters (*Enhydra lutris*): an update on the species status. U.S. Fish and Wildlife Service. Marine Mammals Management Office (Region 7-Alaska).

http://www.otterspecialistgroup.org/Library/Colloquium_10/Presentations/10-10-14-55_Sea_Otter_Doroff.pdf

U.S. Fish and Wildlife Service (2008). Southern sea otter (*E.I. nereis*):

<http://www.fws.gov/ventura/endangered/species/info/sso.html>

U.S. Geological Survey (2013). California's Sea Otter Numbers Continue Slow Climb.

<http://www.usgs.gov/newsroom/article.asp?ID=3687#.VUmjltrBzGc>

Northern Sea Otter Population Survey Areas

