

*Animal Training and Research,
International
&
SLEWTHS Project
Science, Learning, and Exploration
With the Help of Sea lions*

**END OF THE YEAR SUMMARY
2006**

*Animal Training
&
Research International*



Research

Helicobacter study:

Work continued this year on our ongoing *Helicobacter* research with our colleagues at MIT finally isolating the needed fifth isolate of our *Helicobacter* species allowing us to proceed with characterizing and formally naming the bacterium!! Work is now underway to genetically sequence and compare the phylogenetic relationship between our isolates in order to determine how they cluster genetically and to name them accordingly. We anticipate the naming of the bacterium *Helicobacter pinnipedum* sp. nov to proceed in 2007. Meanwhile, Dr. Hurley completed the first draft of a related paper on the epidemiology of the *Helicobacter* disease in the pacific pinniped population “Evaluating the prevalence and treatment of a novel *Helicobacter* species in pinnipeds”. We await the completion of the naming process to submit this follow-up paper.

Stomach Temperature study

Our research into the effects of food consumption on stomach temperature concluded in 2004 however, the work was finally published in the Journal of Experimental Biology this year by our colleagues Kuhn, C.E. and D.P. Costa.

Molting Dynamics:

Data collection continued throughout 2006 to study the molting patterns and dynamics of the California sea lion. Nancy Wenkel has continued to sample monthly each of the 4 initial animals in the study and for 2006 we were also able to train full sample collection with our youngest female, Cali. Cali's data enables us to look at molting at the earliest age thus far (2 to 3 yrs old). Our second juvenile female, Ariel has been slower to feel comfortable with the sampling procedure but at this point has finally learned to tolerate her first real sampling. We anticipate her full participation in the 2007 sample set. We will continue to photograph and collect shed hairs from now a collection of 3 males and 3 females for years to come in order to watch the development of molting and the affect of season, water and air temperatures, and body condition. Heather Yeager has completed the first analysis of the early yearly data collection and presented her findings as a poster to the 2006 IMATA meeting in November.

Preliminary results from the first round of analysis are that the annual molt in California sea lions occurs as follows: The front and rear flippers molt first, followed by the ventral surface (starting at the midline and forming a “Y” pattern as the molt moves to the sides of the body and the ventral surface). Molt progresses around the sides of the body to the dorsal surface; the head begins to molt, followed by the neck and chest. The timing of the molt seems to be correlated with age. Our two older sea lions (a 27-year-old male and an 18-year-old female) typically begin molting in early July, and stop molting in November. Our two younger males (both 9 years old) begin molting in late August/early September and stop molting in November. The results from our two young female sea lions have yet to be analyzed as we await at least two years of data.

Growth and morphometrics:

With the addition last year of two new juvenile sea lions (Cali and Ariel) to our collection, we continue to add weekly data collection on weight and length measurements

for our on-going, long term morphometrics data collection. Coupled with data collected in past years on our juvenile male sea lions, these efforts comprise a long term study on growth dynamics in California sea lions, contrasting male and female development.

Publications, Presentations, Proposals and Permits (P⁴)

Publications

- Dr. Hurley and co-presenter David Lichman of Parelli Natural Horsemanship, were honored to be asked to publish their Animal Behavior Management Alliance 05 conference presentation “Parelli Natural Horsemanship: Using species specific traits to enhance behavior modification” in the ABMA newsletter *Wellspring* Vol. 7, Issue 2 Spring 2006 pp.12-13.
- Our colleagues who we assisted in stomach temperature research over several previous years were able to finally publish a paper that on that work: Kuhn, C.E. and D.P. Costa (2006): Identifying and quantifying prey consumption using stomach temperature change in pinnipeds. *Journal of Experimental Biology* 209: 4524-4532.
- The staff as a whole wrote and published two volumes of our *Inspiring Minds* Newsletter (6/06 and 12/06).
- Dr. Hurley completed the first draft of an epidemiological paper to be submitted to *Diseases of Aquatic Organisms* Journal entitled “Evaluating the prevalence and treatment of a novel *Helicobacter* species in pinnipeds.”
- Jackie Rifkin, a SLEWTHS trainer, finally finished editing her children’s book based on the life of our sea lion Sake, entitled “The Fabulous Life of Sake the Sea Lion” and found a publisher (Print Media). The final formatting and page fittings are now underway and ATR anticipates publishing this book early 2007.
- Stefani Skrovan overhauled our SLEWTHS web site, adding links to videos, staff and animal updates, a complete publications page, and many other small improvements long overdue.
- Jennifer Gale worked with Dr. Hurley on developing a new ATR web site which is finally up and running at our newly acquired addresses: www.animaltraining.us and www.sealiontraining.com. With the help of Savannah Armstrong and Stefani Skrovan the massive project has loads of new photos, text, and functionality: including fair schedules, movie work and more.

Presentations and conference participation

- Dr. Jenifer Hurley, Stefani Skrovan, Jackie Rifkin, Siobhan Crosby, Jennifer Gale, and Isis Andrade all attended the 6th annual Animal Behavior Management Alliance meeting March 5-11 in San Diego, CA.
 - Dr. Hurley presented a formal workshop entitled “Foundations of training: Practical Skills to Train Behavior” at the request of the ABMA Board of Directors.
 - Dr. Hurley also coordinated and reviewed all abstracts for this meeting.

- Heather Yeager, Siobhan Crosby, and Jennifer Gale attended the 34th annual International Marine Animal Trainers Association conference held Nov 5- 10, 2006.

-Heather Yeager presented a poster entitled “Molting Patterns in California sea lions (*Zalophus californianus*)” based on her thesis research.

Proposals

- Submitted a “Sea Lion Encounters Wharf Attraction Preliminary Business Plan” proposal to the Monterey Planning commission at the request of John Pisto a restaurateur of the Monterey Wharf community.

Permits

-Renewed our APHIS exhibitor permit number 93-C-0626.

- Submitted an IACUC proposal entitled “Educational observations and training with pigeons” 4/06 and received an IACUC permit #887

Education and Public Outreach

Sea Lion Stewards Environmental Education Program and Beach clean-up activities

Conducted 15 Sea Lion Stewards half-day programs for over 444 participants who collected over 294 lbs of garbage from our local beach in the process.

We were able to provide full bus money funding for 4 of these groups thanks to a grant from the California Coastal Commission.

Jamie Mullins created a new *Stewards* pamphlet to help us advertise the program.

Sea Lion Encounters Public Outreach Program

Based on daily performance tallies an estimated 31,200 people attended 77 performances of *Sea Lion Encounters* in 2006.

Sea Lion Encounters was featured at

- The Chowchilla/Madera County, California Fair May 18-21, 2006
- The Jackson County, Oregon Fair July 18- 23, 2006
- The San Mateo County, California Fair August 11-20, 2006
- The California Speedway Fontana, California September 1-3, 2006
- The Central Washington State Fair September 22- Oct 1, 2006

ATR partnered with the Monterey Bay Aquarium’s sea food watch program this year and Isis Andrade created a display to distribute Seafood Watch cards to help direct people towards sustainable fisheries choices.

Tours for MLML, CSU, and other academic institutions

13 private tours and/or demonstrations were provided on-site by SLEWTHS

- 1/24/06 K. Coale tour with student
- 2/4/06 Donor tour and demo
- 5/3/06 Tour and demo for Marine Science class from Hartnell College
- 6/27/06 Tour and demonstration for CSU Chancellor and CSU Presidents
- 6/28/06 K. Coale tour
- 7/8/06 K. Coale tour
- 7/17/06 K. Coale tour with students
- 8/23/06 K. Coale tour with SJSU instructional development coordinator
- 9/9/06 Open house- two hours of public viewing and two live demonstrations
- 9/10/06 Open house- two hours of public viewing and two live demonstrations
- 9/21/06 J. Douglas and visiting scientist tour
- 10/5/06 K. Coale and SJSU site use committee tour
- 10/12/06 Provided a half day tour and elaborate training demonstration for Moorpark college's Exotic Animal Training and Management Program's class of 06.

Classes

-A total of 34 undergraduate students from the US and Canada attended 2 intensive immersion classes in marine mammalogy through CSUMB extended education department

Internships

- 34 day-long internships for students were conducted
- 6 multi-day internships were also provided.
- 4 Jr internships were provided for aspiring future marine mammalogists
- 8 Certificates of Completion in Marine Mammalogy were earned by people who successfully completed both classes and a week-long internship.

Student projects

- Heather Yeager completed an analysis of a year's worth of data collection for her CSUMB capstone thesis on molting dynamics in California sea lions and prepared a poster presentation on the work for this year's IMATA conference.
- Nancy Wenkel took over molting research from Heather Yeager to continue the project for another year with the addition of two new baby sea lions in the data collection.
- Siobhan Crosby performed her service learning requirement through CSUMB with SLEWTHS in the fall.

Media

- July 19th article in *Grants Pass Oregon Daily Courier* on Jackson Co fair featuring interviews and photos with JH and SW.

- August 18th article in *San Mateo County Times* on our attraction at the San Mateo fair with interviews and photos of our staff.
- Sept 25th article in *Yakima Herald Republic* on our attraction at the Central Washington fair featuring photos and staff interviews. Several local TV and radio shows also did interviews and reports.
- In early Oct we spent 2 days filming with a crew from the BBC in town filming a multiple part TV documentary on the Monterey Bay to air in England in 2007.

Consulting and Contract Work

- Dr. Hurley volunteered to head up the abstract committee for the 2006 and 2007 Animal Behavior Management Alliance meetings. She acted as the primary point of contact for all presenters at the meeting, collated all of the abstracts, formed a review committee, and prepared the abstracts for review and use by the board of directors, reviewed abstracts and corresponded with all presenters.
- As part of her duties as an IMATA editor, Dr. Hurley edited two papers for the IMATA publication, *Soundings*.
- In July Sake filmed an American Express commercial with Ellen Degeneres that aired nationally.

Facilities

Projects

- In the beginning of 2006 a massive storm hit the California coast and the 50mph winds tore apart the roofs of both our fish kitchen and office buildings. The staff spent the first weeks of the New Year completely re-shingling both buildings.
- In early 2006 we finally finished the south compound landscaping project by adding drainage, slope and tarping to the new back area and replacing the old pool with our newer and larger transportable one (T3) built last year. We built a couple of new deck pieces around the new, larger pool to allow the animals to stay on redwood decking as they enter and leave the enclosure.
- We added grip skid resistant strips to our stairs to reduce slipping.
- Despite our best attempts the fish kitchen in several areas was found to be rotting and subject to heavy water saturation, so in early 2006 we replaced areas of the doorway threshold and caulked and resealed areas along the interior walls and exterior trim.
- Randolph Skrovan built a new large, mobile stairway for the north face of N1 (our largest pool). The stairs double as portable bleachers for better viewing for children participating in our Sea Lion Stewards program.
- In April we finally resurfaced our two smallest pools (N2 and N3) with plastic wood to replace the old tearing-up black matting and create a smoother and easier to clean surface. In May we did the same for our first transportable pool, T1 (our newer transportable pool, T3, was constructed already from plastic wood). And finally in June we finished the project by resurfacing the largest and final pool N1. At the same time we repainted the interior posts of all the pools.

- We constructed in June a bridge mechanism to allow our animals to move easily from one pool to another when at the Sea Lion Encounters facility.
- In October we cleaned, primed and painted the entire exterior of the office building and trimmed the windows and door.
- In November we set-up a temporary fish kitchen and had a flooring company come and resurface our fish kitchen floors (the first ever contracted work we have had!). We completed the project by caulking the interior wall seams and repainting the freezer doors. The fish kitchen looks beautiful.

Acquisitions

- We purchased a new laptop computer and firewire for Stefani and our public outreach programs. The new system allows us to edit and download videos and replaces an antiquated old computer.
- Several wet suits were donated by an old staff member Kristi Leikvol.
- We designed and purchased a new large aluminum cage for transporting our male sea lions (it is nearly twice the size of our old cages).
- We designed and purchased SLEWTHS and ATR postcards for resale and gifts.
- We purchased two replacement pools- T1 and T2 to replace old pools that had torn.
- We purchased a new camper shell for SW's truck to allow us to transport 3 sea lions at a time.
- We purchased a large, 10 x 20 EZUP tent for merchandise at the fairs and to keep Stewards visitors dry on wet days.
- We purchased a sound mixer, speaker cables, speaker stands and microphone to complete our sound system for our Encounters presentations.

Animals

Behaviors started but not completed this year are called *started*, behaviors started and completed this year are called *learned*, work in progress behaviors neither started nor completed this year are called *working on*, and behaviors started in a previous year and finished this year are called *finished*.

Beaver

Beaver is in retirement where maintaining medical and husbandry behaviors are his primary objectives (and happiness).

- Started tooth brushing
- Finished verbal wave

Sake

- | | |
|------------------------------------|-----------------------|
| - Started yes | Finished painting |
| -Started breast stroke swim | -Finished look left |
| -Started down spiral | -Finished embarrassed |
| -Started walk on all four flippers | -Finished whiskers |
| -Working on slowly concept | -Learned high five |
| - Working on human hurdling | |

Nemo

Nemo was neutered in early 2006 in order to enable his housing with our females from time to time with out the risk of unwanted pregnancy. The surgery was very successful.

- | | |
|-------------------------|--------------------------------|
| - Started seal | - Working on throw |
| - Started “not” | - Working on balance handstand |
| - Working on tuck up | - Learned tumble left |
| - Working on water work | |

Jonah

- | | |
|--------------------------------|---|
| -Started spin-jump | -Working on Sea Lion Encounters performance |
| -Started seal | -Working on tongue |
| -Started balance handstand | -Finished tuck up |
| -Started “not” | |
| -Working on transport training | |

Cali

- | | |
|---------------------|----------------------------------|
| - Started pillar | - Started stomach tubing |
| - Started throw | - Started wave |
| - Started harness | - Started balance |
| - Started diving | - Started toothbrushing |
| - Started handstand | - Working on blood stick desense |
| - Started porpoise | - Working on truck |

- Working on 2nd person work
- Working on seat
- Finished heeling
- Finished take and retrieval
- Finished rollover
- Finished back-up
- Finished kiss
- Finished hands-in-mouth
- Finished hold-fish
- Learned interactions
- Learned float
- Learned spin
- Learned tuck up
- Learned dance
- Learned tumble
- Learned left salute
- Learned think

Ariel

- Started diving
- Started back up
- Started dance
- Started put
- Started left wave
- Started Stewards performances
- Working on heeling
- Working on water spirals
- Working on molting research
- Working on compound
- Finished lengths research
- Finished bark
- Finished hold fish
- Finished handstand
- Finished ball balance
- Finished seat
- Finished truck and transport
- Finished throw and catch
- Learned kiss
- Learned pillar
- Learned tumble left
- Learned float
- Learned spin
- Learned interactions
- Learned balance/handstand

Fluffy

We formally acquired “Fluffy Salt” a white fancy pigeon previously owned by Stefani Skrovan. Fluffy serves as a training animal on which our even our lower level training staff can practice their behavior modification skills by training Fluffy. She also serves other students as a class example for the training classes.

- Started wing lift
- Started foot hold
- Started nail trim
- Started hold
- Learned scale
- Learned crate
- Learned tactile
- Learned perch
- Learned hand
- Learned a to b
- Learned peck the green x

Smitty

- Working on Stand
- Working on bow
- Working on podium work
- Working on level 2 riding
- Working on bit training
- Working on Spanish Walk

Staff

8 new people were hired into *Animal Care*

(Anna Hild, Jennifer Pimentel, Chantel Todd, Allison Limbaugh, Sophie Darling, Jordan Richter, Shelby Peters, Matt Kedzie)

4 people left the project after an average longevity of 2.4 years

(Danielle Gurzi (1.3yrs), Savannah Armstrong (2 yrs), Jackie Rifkin (4.1 yrs), Jennifer Gale (2.3 yrs))

5 people became *Senior Animal Care*

(Ashley Regalia, Chantel Todd, Anna Hild, Jennifer Pimentel, Allison Limbaugh)

3 people became *Assistant Trainers*

(Isis Andrade, Chelsie Newbill, Ashley Regalia)

2 people became *Trainers*

(Siobhan Crosby, Coll Perske)

0 people became *Senior Trainers*

2 people received their *Multi-year Senior Trainer* anniversary Badges

(Heather Yeager, Gini Paolini)