



Transient Juveniles Return To Wild After Eight-Year Research Project

“Go around the east side of the Center, through the locked gate, and when you get to the door at the top of the stairs, ring the bell,” are the directions from Dr. Jo-Ann Mellish to the SeaLife Center’s Juvenile Transient Steller Sea Lion Project (casually called “South Beach” for its location behind the Center). While the collection of pools and offices is not a secret, it’s in an area that few patrons or staff have ever visited.

And during the last week of July, this unprecedented eight-year program that captured, studied, and then released juvenile Steller sea lions came to an end.

From its conception to its conclusion, the project at the back of the Center has pioneered Steller sea lion research methods. The program brought groups of wild western stock sea lions, mostly from Prince William Sound, into temporary captivity for three months of study at a time. The number of Steller sea lions living west of 144 degrees has plummeted 80 percent since the mid-1970s, a decline that has landed the marine mammals a spot on the endangered species list. In an attempt to help identify reasons for this dramatic decline, researchers targeted young Steller sea lions (ages 1-4) in an experimental model that had never been tested before.

Mellish, a SeaLife Center scientist and associate professor at University of Alaska Fairbanks who headed the project, admits that because no work of this sort had been previously done, determining guidelines was difficult. For example, she says, “we weren’t sure how long it would be before the animals got too accustomed to humans, so we chose to keep them for a maximum three months of captivity,” which was enough time to get answers with repeated measurements. It took Mellish two years alone to obtain the unique permit from the National Marine Fisheries Service, which oversees sea lion studies, though once research began she declares it went “extraordinarily well.” She also credits the project’s success to “the tal-



Marine mammal research conducted under NMFS permits 881-1980 & 881-1745

ented team I have had working with me.”

“The amount of information and level of detail we’ve been able to gather from wild individual juvenile Steller sea lions is unsurpassed by any other field or captive program due to our unique capabilities,” says Mellish. Thirteen groups of two to four juveniles came through the facility, or a total of 55 sea lions. Over twenty investigators worked on the project, and lab data contributed to more than 30 scientific studies.

But the underwater capture of the animals is arguably the most exciting aspect of the project – at least to an outsider. In order to collect the sea lions, a team of 12 is dispatched on a 108-foot support vessel, with two smaller boats used for the actual capture event. Two divers infiltrate a group of juveniles (who like to “hang out” together), one with a literal fish-on-a-stick and the other with an honest-to-goodness lasso. The first diver lures the young sea lion in with fish, and when the mammal pokes his head through the lasso the second diver is able to

secure it.

Once at the South Beach site, the pinnipeds are housed in a suite of four pools with haul-out spaces. The facility is spotless, with a raised floor that allows staff access to all the plumbing. Pipes can be opened in order to deposit fish, which is then shot into the pools and effectively eliminates the wild sea lions’ association with humans and food.

In order to maintain a sterile environment, guests (as well as researchers) must shower and change clothes both before and after their visit. Though South Beach isn’t a full CDC-level quarantine, the staff

members are careful to screen for what Mellish calls “the big stuff” – such as pet hair – and issue coveralls and XtraTuf boots. The self-contained unit has its own showers, laundry, lab, and even a portable surgical unit, as well as only one entrance. After three months of captivity, the sea lions are released back into the wild. At the beginning of the project, the animals were taken back to where they were captured, but Mellish and her staff eventually discovered that the juveniles have such a large home range it doesn’t make a difference if they are released a distance away.

Though sea lions will no longer be collected for research, Mellish and her team will continue to collect and catalogue data from the formerly captive mammals, which have been implanted with Life History Transmitters (LHX). The devices will record data for upwards of 10-12 years, and measure the mortality event of the animal. Furthermore, Mellish is optimistic that because the program enjoyed such great success, the South Beach facility might soon house a similar program – perhaps for a different marine mammal.

On the release day of the final group of sea lions, weather in Seward prevented a discharge from the usual spot down Lowell Point Road. Instead, visitors were treated to a show just below the Center. As the temporary holding containers were opened, two sea lions nudged their way out. They lumbered towards the water and then, backed by applause from the crowd, entered Resurrection Bay and slowly swam away.



Human Connection to Marine Life Highlighted by Recent Loss

As the recent death of a rehabilitated sea otter pup demonstrated, it’s easy for both visitors and staff to become emotionally connected to wild creatures. People who raise or rehabilitate infant animals likely take losses the hardest, whether they work with fuzzy marine mammals or undulating invertebrates.

Says avian curator Heidi Cline, “One thing that comes up time and time again in the life of an aviculturist, especially in the breeding season, is the roller coaster of emotions that one is lead along. One moment we are on top of the clouds with gorgeous little hatchlings, to be thrown moments later into the depths of sadness with an unfortunate death of one. We have to very quickly pick ourselves up from that to take the utmost care of the remaining charges, without missing a step. This is a very challenging path for anyone to follow, and even after 26 years of doing this, it amazes me every year to find how difficult that is.”

Aquarist Nathaniel Charbonneau at first declares that he has a “farm mentality,” and doesn’t get too upset when an animal dies. But then he adjusts his opinion slightly: “It does upset me when I lose my jellies,” he admits. “If there’s a die-off or problems with the water chemistry, I get all stressed out and can’t sleep.” Charbonneau allows that because he raised and bred the jellies from a



single individual, he cares about them.

Husbandry director Brett Long points out that most people get into the animal-care industry because of a passion for animals over any other reason. “The pay and benefits are not always commensurate with the scope of work and the hours,” he says; therefore, it’s usually a love for and sense of connection with animals that draw staff.

animals longer just because you like them.”

Alaska SeaLife Center researchers, animal husbandry staff, and even employees in education and administration take pride in the facility’s high standards for animal care, and providing stewardship for marine wildlife is one of the Center’s core values. As such, a large portion of the staff was affected by Skittle’s death. Long notes that Skittle had an effect on more people in the Center than he anticipated. “We had never had this much Center-wide support,” he says. Skittle required round-the-clock care, and because of the demand for volunteers to help out, staff from all departments had a chance to get to know the sea otter.

But the outpouring of condolences, photos and videos of Skittle from the general public also shows the level of connection people can form. One SeaLife Center member wrote, “We visited the Center in June and for me Skittle was the highlight of the visit. Our time was limited, otherwise I would have spent the day watching him! A sad ending to a rescued animal who touched my heart.” While not every animal loss gets the same level of publicity and response as Skittle’s, staff members were heartened to learn how many people outside the facility understand and appreciate their efforts to care for Alaska’s marine wildlife.

STAFF HIGHLIGHT:

Tasha DiMarzio

The senior aviculturist at the Alaska SeaLife Center, Tasha DiMarzio, is an unabashed, self-described “bird nerd” and a key contributor to the research, exhibits, and fundraising for the avian department. DiMarzio has been at the Center since 2002, when she started as an interpreter and ticket salesperson. Two months later she received an internship in the avian department, and within weeks she was hired as a regular employee. She now supervises up to seven staff in a busy season.

DiMarzio studied fish and wildlife management at North Dakota’s Minot State University, but her passion for birds began much earlier. A 4H participant, she began her lifelong career of raising and studying birds when she was ten.

“I had three chickens, and two out of the three were killed by a raccoon,” DiMarzio recalls. “I was so devastated my mom let me order 25 from a hatchery, though the intent was always that I would give some away.” But 25 birds turned into 1000 by the time she finished high school – “I went from chickens to doves to quails to pheasants” – and she credits her avian obsession for keeping her out of trouble as a teenager.

DiMarzio has contributed significantly to several important projects for the avian department and the SeaLife Center. The most legendary is the collection of 10 horned puf-

fins and 10 common murre from the slick, slimy cliffs near Seward. “The Center was on a waiting list for [the birds], but it was taking too long,” DiMarzio recounts. Avian curator Heidi Cline obtained the permits necessary to collect eggs and chicks from public lands, and the avian team set out on boats to search for the birds. It took DiMarzio and SeaLife Center staff around three years to collect all 20. DiMarzio’s role was to rock climb the wet and algae-slicked cliffs, where burrows with eggs were hidden. “It was difficult and time-consuming to rope up and set top ropes, and often there were no trees,” DiMarzio says. Eventually she found it easier to simply free climb over the ocean (she never fell), though DiMarzio notes that she was more worried about dropping the eggs or babies than she was about herself.

The most visible of her brainstorms is the “puffin paintings,” framed pieces on which puffins have walked across paper with paint-covered feet. Inspired by a friend and former colleague who made similar “penguin paintings,” DiMarzio spent close to two years determining the best non-toxic paint and paper. The project has paid off – literally. The money raised from the sales of puffin paintings goes directly to the department and has funded a remodeling of the habitat area, nesting materials, and travel for scientists to present their work at conferences and staff

training courses.

Another of DiMarzio’s contributions is to the educational outreach “Puffin Experience,” where staff actually bring puffins to local hotels and classrooms. DiMarzio notes that the program is mutually beneficial for every person and creature involved. In the classroom, students pick up on DiMarzio’s passion for birds and often follow up on the ones that visited, while the birds also stay active during winter, which keeps them used to people when there aren’t any Encounter tours.

DiMarzio credits her project ideas to getting bored easily, and admits that she’s “not a routine person.” Her multitasking skills are obvious during our interview, when she simultaneously answers my questions, weighs and measures baby ducks, receives radio and phone calls, and manages to show me around the exhibit.

Though she treats the birds with obvious



Tasha DiMarzio

love, she has a hard time naming a favorite bird or species. “I have my favorite birds in the wild, and my favorite birds here,” she says, as she fusses over a fluorescent-beaked puffin that returns her gaze. When it’s suggested that perhaps all the babies might be her favorite, she is quick to correct, noting that she gets more attached to the adult birds: “You work all year to keep the birds happy and healthy so they’re able to reproduce in the spring,” she says. “It’s when they reproduce that you know you’ve done a good job.”

Steller’s Eider Ducklings Offer Unprecedented Research Opportunities

Even most avid birders have not seen a wild Steller’s eider, much less a Steller’s eider duckling hatch. But until a few years ago, eider researchers at the Alaska SeaLife Center hadn’t seen one of these threatened species hatch, either. “We are watching the eider flock at the Center very closely, and have been able to observe some very unique events, such as a hen laying an egg, and a duckling hatching from that egg,” says eider program manager and biologist Dr. Tuula Hollmén.



incubating females to measure conditions such as temperature, humidity, and how often females at the Center are turning the eggs and leaving the nest for breaks.

As this Steller’s eider population is the only research flock in captivity, much is being done to ensure their livelihood while also collecting as much information as possible from them. One successful experiment is the use of foster mothers, who care for the ducklings whose biological mothers are not

The first Steller’s eider bred in captivity in North America hatched at the Center in 2007. Since then, nine more of this threatened species have hatched, all in 2009. The fluffy babies, thick with down, are energetic and photogenic, squirming frantically in their handlers’ hands while their weights are recorded and delicate wings spread as new feathers are measured and photographed.

Under the direction of Hollmén and the Center’s avian curator Heidi Cline, these hatchlings offer a multitude of re-

search opportunities, from perfecting hand-rearing protocols to learning about the breeding behavior and biology of the rare species. Furthermore, this year the staff has been able to test different breeding pen layouts, pairings and incubation techniques.

“We would like to be able to replicate natural incubation as closely as possible with our incubators,” says Cline. In order to figure out just how to do that, staff are planning to use “data loggers” next year, fake eggs that will be placed under

showing interest in raising the babies themselves.

On a recent rainy day, Cline carries a small kennel with five ducklings out to the eider section of the outdoor laboratory. She opens a door into a fenced-in pool where a female Steller’s eider floats. When Cline opens the kennel the ducklings race to their foster mother, who greets them eagerly. Soon the babies are paddling in a line behind their new mom, looking every bit as healthy and at home as ducklings in the wild.



CONSERVATION

REHABILITATION

CONSERVATION

The first installation of what scientists hope will be a statewide network of harbor observation stations was completed in early July. The equipment, installed on the breakwater crest at Seward's harbor entrance, will monitor wind speed and direction, barometric pressure, humidity, solar radiation, water temperature, tide level, and wave conditions. Once implemented through Alaska's more than 100 harbor and boating facilities, the environmental monitoring system will also help observe the impact of climate change on coastal communities as well as report

Orson Smith, Richard Brown, and Howard Ferren in front of HarborNet in the Seward harbor entrance.



and forecast weather and other coastal marine conditions.

"The Alaska Harbor Observation network will collect data that can help us make informed decisions about coastal development," said Seward Harbormaster Kari Anderson. "This real-time reporting and forecasting of marine conditions will be valuable for recreational and professional mariners. It is fantastic that the Seward Harbor will be the test site for the initial prototype."

EDUCATION

Students enter a new realm in the Center's underwater viewing area.



The education department at the ASLC saw continued growth and success during the 2008-09 school year.

Distance learning alone reached over 7,500 students as far away as Vermont and Florida, a participation increase of 22% from the previous school year. For outreach programs, staff traveled to several Alaska Native villages to provide programs, as well as schools in the Kenai Peninsula, Mat-Su and Anchorage areas. Additionally, 1,000 students and chaperones attended the Center's Nocturne sleepovers, where students participate in hands-on marine science programs and bed down

between the seabird, Steller sea lion, and harbor seal habitats

The education department was also the recipient of a Coastal America Spirit Award, which "recognizes exceptional projects that demonstrate the 'spirit' of teamwork for group efforts that are poised to address our challenging coastal issues."

The Center is currently providing educational experiences for Elderhostel participants, which will continue into September.

REHABILITATION

The rescue and rehabilitation department has brought in nine harbor seals this summer. The pups have all been transferred to the outside quarantined area, where each enjoys its own haul-out spot and pool to swim in and dive for fish. The outside area also allows the pups to interact with one another, which encourages a more natural setting and ensures environmental stimulation. Milky Way-Midnight, the

first to arrive and now the most advanced, will be the first to be released back into the wild. He has already progressed into the "graduation pool," which is one of the final steps before release. Though not as sophisticated as Milky Way-Midnight, the rest of the pups are on speedy roads to release as well.

Unfortunately, despite the efforts of our staff, not every rehab animal can be saved. Two seal pups died due to

a condition that causes the regurgitation of undigested food. Staff members are still investigating the reason for this condition.

Jelly Bean the harbor seal, immediately after her rescue.



Justin Jenniges and Dr. Shannon Atkinson recover an EAR at Point McKenzie.



acoustic release (for retrieving the equipment), a C-POD, which records the presence or absence of high-frequency echolocation clicks, and the

Under the management of the Alaska Department of Fish and Game, ASLC biologist Justin Jenniges spent a month in and around Cook Inlet deploying "hydrophones," acoustic monitoring devices designed to detect marine mammals. The primary objective of the study is to learn more about the seasonal distribution of Cook Inlet belugas, including where the population spends the winter. The intricate equipment is moored with a piece of salvaged train track, a line of noise-free rope, an

Ecological Acoustic Recorder (EAR), which records lower-frequency whistles and calls.

In 2008, Cook Inlet belugas were listed as endangered under the ESA, a listing that requires the designation of "CriticalHabitat." In addition to discovering where these beluga whales "disappear to" in the winter, Jenniges hopes that the hydrophones will help assess what effect, if any, the expanding Port of Anchorage construction and the possible Knik Arm Bridge project will have on the population.

SCIENCE

MEMBERS' CORNER

Becoming an Alaska SeaLife Center member is the perfect way to experience Alaska's oceans while supporting the Center's mission and commitment to the marine ecosystem of Alaska.

In addition to unlimited free admission to the Center, members also benefit from a 10% discount in the Discovery Shop, a 20% discount on guests' admissions, and 20% off of Center Tours, including Behind the Scenes tours, and Puffin, Octopus and Marine Mammal Encounters. Visit www.alaskasealife.org to become a member or find out more info about membership.

Upcoming members-only events include:

Exxon Valdez Oil Spill, September 11, 6:30pm
Revisit the 1989 disaster during this 20th anniversary year to discover how and why it happened, and what we have learned.

VSI: Veterinary Sciences and Investigation, October 24, 10 a.m.
Take a look behind the scenes at some of the equipment and procedures used by the Center's highly specialized and dedicated veterinary staff.

Woody and Jabba the Hutt...



...separated at birth?

Notes from the CEO

Understanding our Visitors

Public education is a core part of the Alaska SeaLife Center mission. We greatly appreciate the opportunity to share, first-hand, the amazing diversity of life in Alaska's seas with our 160,000 annual visitors from Alaska, the Lower 48 and around the world. Clearly, a key motivation in visiting us is to see marine life up close in a way that is just not possible from a boat or the shore. As Alaska's only public aquarium and a leading coldwater research facility, we offer a unique opportunity to "get close" to marine animals and plants, and experience them in ways that are normally only available to divers.

This summer we are undertaking a survey of visitors to better understand what you like about your SeaLife Center experience, and we are delighted with initial feedback:

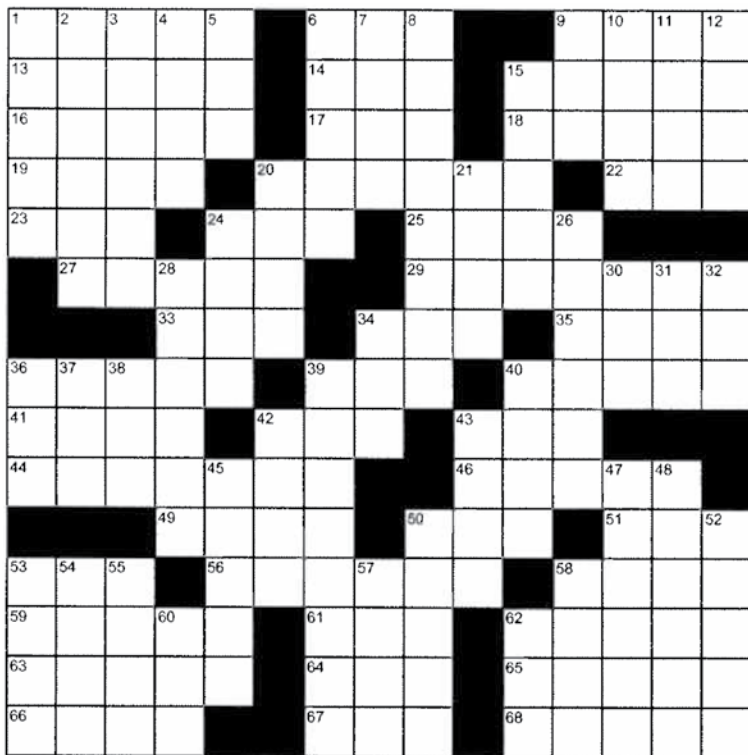
- 82% of visitors rate their SeaLife experience at least 9 out of 10!
- Not surprisingly, with Seward as a cruise ship destination, 74% are first-time visitors, but we have strong repeat visitation – more than 19% have visited more than 3 times!
- 40% of visitors hear about us from friends and relatives and 39% from tourism brochures; advertising and road signs are much less significant as promotional tools.
- The highest rated element of our experience is our helpful staff (86%); the lowest rating is the adequacy of our food and drink choices (27%).
- People love the animals – our "big three" (up until the loss of Skittle on July 22nd) are the sea birds (27% of visitors mention specifically), sea lions (23%) and sea otter (12.5%)
- Some 30% of visitors offered suggestions for new animals and exhibits – popular recommendations included killer and beluga whales, sharks, polar bears!

We'll make the full survey results available on our website at the end of summer and use your feedback to keep improving "the SeaLife Center experience". We'll also link this feedback with your input via letters, e-mails, meetings, Facebook and YouTube postings to guide our priorities for long-term Center development – we plan to kick off a 2020 planning process later this year.

Thanks to the 152 informants who have participated in the survey so far!

Dr. Ian Dutton
President and CEO

CROSSWORD



www.CrosswordWeaver.com

ACROSS

- 1 Harbor and ringed, eg.
- 6 Connective tissue of the knee, often hurt in sports injuries (abbr.)
- 9 Twofold
- 13 Charming trickery
- 14 Miner's goal
- 15 Wild dog of Australia
- 16 Saying
- 17 Scientific marker placed on a fin or flipper

18 ___water Viewing, SeaLife Center exhibit area

- 18 State of untidiness
- 20 Type of arctic ice seal
- 22 Not even
- 23 Annoy
- 24 Sports official (abbr.)
- 25 Killer whale
- 27 Fully satisfied
- 29 Sewing tools

- 33 Type of salmon or sea urchin
- 34 Astrological sign of August
- 35 Shed, as a sea lion does
- 36 Puffin family
- 39 SeaLife Center tour choice (abbr.)
- 40 Scatterbrained
- 41 Pocket fuzz
- 42 Pacific ___, Bering Sea food fish
- 43 SeaLife Center medical staff person (abbr.)
- 44 Country fully surrounded by South Africa
- 46 Lessened
- 49 Corner
- 50 Final word in a fairy tale, perhaps
- 51 Roman three
- 53 Alaska's country (abbr.)
- 56 In the direction from which a breeze is blowing
- 58 Sea ___, touch tank resident with many arms
- 59 One of the Center's female Steller sea lions
- 61 Lyric poem
- 62 20th century Mexican painter Frida
- 63 Hauls
- 64 Phase of sleep (abbr.)
- 65 ___ sea urchin, spiny touch tank resident
- 66 Aviation prefix
- 67 Month that kicks off Alaska's tourist season
- 68 Aviary residents

DOWN

- 1 Hindu religious leader
- 2 Family of sea ducks, some of which are endangered
- 3 ___ SeaLife Center
- 4 Seals use flippers instead of these to move about
- 5 Anchorage to Seward direction (abbr.)
- 6 Pattern
- 7 King or hermit, eg.
- 8 Tibia and fibula, eg. (2 words)
- 9 Noisy clamor
- 10 Reverse or annul
- 11 Mature, as with cheese
- 12 Yellow Irish ___, resident of The Deep Gulf exhibit
- 15 Wearer of a cone-shaped hat, perhaps
- 20 Salmon nest
- 21 Classic sandwich cookie
- 24 Type of grass or instrument
- 26 Confesses
- 28 Hairy ___, shelled touch tank resident
- 30 Parcel of land
- 31 Golfer Ernie
- 32 Pig pen

- 34 Inc., in the UK (abbr.)
- 36 ___ of the above
- 37 Fib
- 38 The brain and spinal cord in vertebrates (abbr.)
- 39 A person devoted to reading or studying
- 40 Deceased
- 42 Cut
- 43 Sell
- 45 Puffin and Octopus Encounters at the SeaLife Center, eg.
- 47 This or that
- 48 Used a rotary phone
- 50 Opposite of ally
- 52 Part of a set of golf clubs
- 53 Federal agency that inspects the Center's animal food prep areas (abbr.)
- 54 Definite
- 55 Gel derived from marine algae
- 57 Notion
- 58 Indian dress
- 60 In the past
- 62 Former USSR's secret police (abbr.)

For answers, please call 907-242-6890 or email susheelar@alaskasealife.org



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