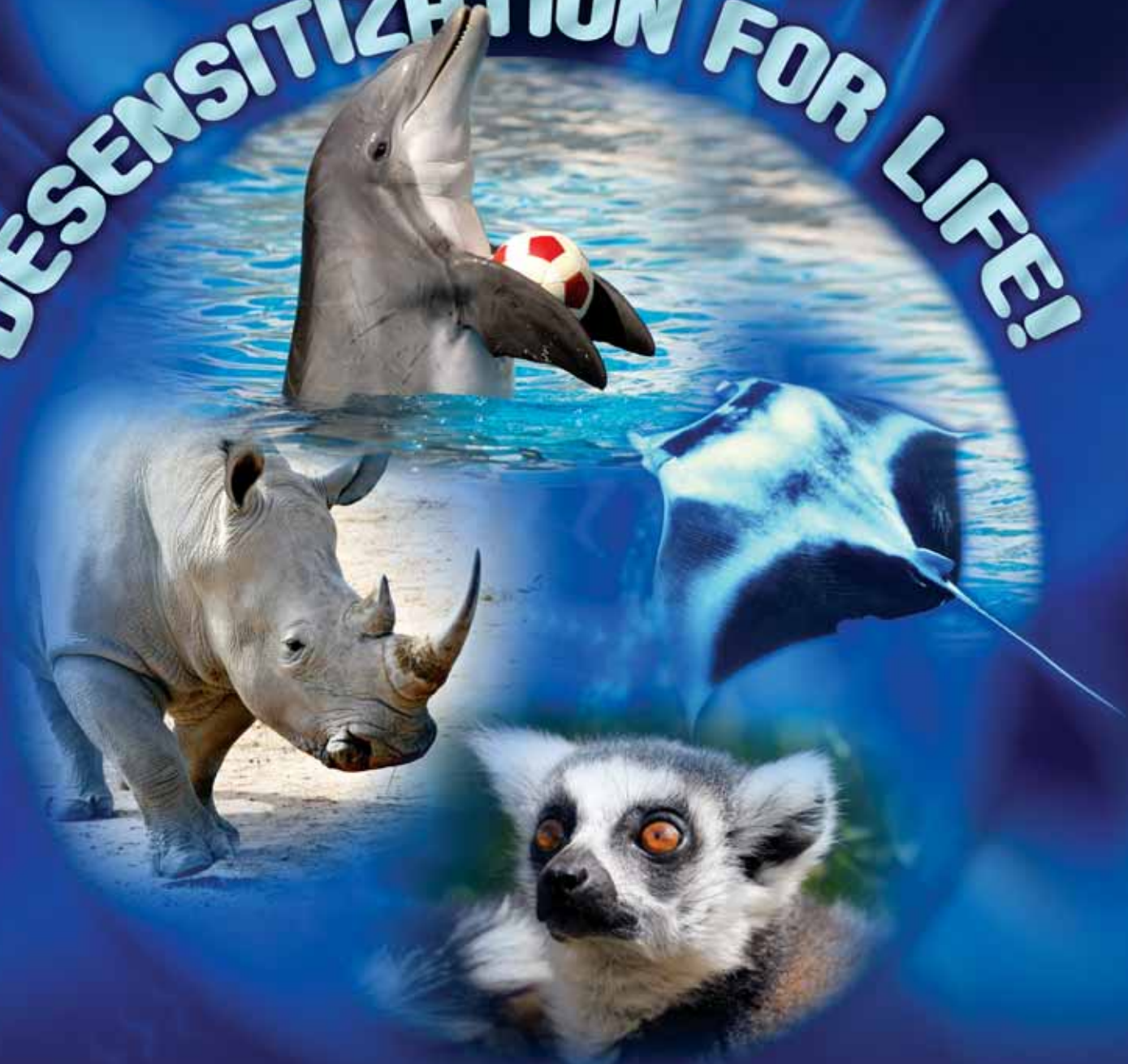




SOUNDINGS

Magazine of the International Marine Animal Trainers' Association

DESENSITIZATION FOR LIFE!



DEDICATED TO ADVANCING THE HUMANE CARE AND HANDLING OF MARINE ANIMALS BY FOSTERING COMMUNICATION BETWEEN PROFESSIONALS THAT SERVE MARINE ANIMAL SCIENCE THROUGH TRAINING, PUBLIC DISPLAY, RESEARCH, HUSBANDRY, CONSERVATION, AND EDUCATION.

Front Cover Photo Credit: Kelly Castillo

REGIONAL REPORTER CONTACT INFORMATION

| | | |
|-------------------------------|-----------------------|---|
| Associate Editor: | Beth Ament | baament@earthlink.net |
| Asia: | Phillip Wong | phillip.wong@oceanpark.com.hk |
| Australia/New Zealand: | Ryan Tate | rtate@zoo.nsw.gov.au |
| Canada: | Brian Sheehan | sheehab@vanaqua.org |
| Caribbean Islands: | Adrian Penny | adrian.penny@kerzner.com |
| Europe North Central: | Christiane Thiere | chriddel2@aol.com |
| Europe Northeast: | Sunna Edberg | sunna.edberg@kolmarden.com |
| Europe Northwest: | John-Rex Mitchell | jrmitchell@shedd-aquarium.org |
| Europe South Central: | Pablo Joury | pablowebs@yahoo.fr |
| Europe Southwest: | Monika Lechermeier | monika.lechermeier@marine-mammal-cognition.de |
| Japan: | Haruhiko Kato | dolphin@marinepia.or.jp |
| Mexico: | Alex Mata | amata@mail.dolphindiscovery.com |
| Middle East: | Tommy Wilken | tommy_wilken@yahoo.com |
| Pacific Islands: | Stephanie Vlachos | acacia@aloha.net |
| Russia/Ukraine: | Monika Lechermeier | monika.lechermeier@marine-mammal-cognition.de |
| South Africa: | Gabby Harris | gabby@seaworld.org.za |
| South America: | Miguel Marques | mg_marques@yahoo.com |
| U.S. Midwest: | Stacey Lonski | lonski28@hotmail.com |
| U.S. North Central: | John-Rex Mitchell | jrmitchell@shedd-aquarium.org |
| U.S. Northeast: | Beth Manning | fintrainer@yahoo.com |
| U.S. Northwest: | Cynthia Alia-Mitchell | dogonfun@teleport.com |
| U.S. South Central: | Shannon Ray | scharles-ray@okc-zoo.com |
| U.S. Southeast: | Sarah Graff | sgraff@msq.cc |
| U.S. Southwest: | Brittany Harris | brittany.harris@seaworld.com |

Soundings is published four times a year by the International Marine Animal Trainers Association (IMATA) as a service to its members. Submissions of manuscripts, photographs, and illustrations are welcomed and encouraged, but will be returned only if accompanied by a return envelope and adequate postage. Any material accepted is subject to such revision as is necessary in our sole discretion to meet the requirements of publication. *Soundings* is produced using Microsoft Word: the style manual followed is the fifth edition (2002) Publication Manual of the American Psychological Association. Electronic submissions are preferred and can be sent to IMATA *Soundings* Chief Editor, Patrick Berry, at: info@imata.org. (Typed submissions will also be accepted and should be double spaced on 8.5" x 11" paper.) Include the name, address, FAX number, and phone number of the author on the title page. Slides and hard copy or photographs can be color or black and white; photographs should be at least 3" x 5". Digital photographs are welcomed and should have adequate resolution when viewed on a computer screen. For all images, include captions, identify all recognizable persons, and include a photo credit. The act of submitting an article, photograph, or illustration constitutes an agreement that (1) the materials are free of copyright restrictions, (2) photo releases have been obtained, and (3) the material may be published by IMATA in *Soundings* or other IMATA publications. Deadlines for submission are 15 November, 15 February, 15 May, and 15 August. Submissions should be addressed to Patrick Berry, *Soundings* Chief Editor, email info@imata.org or mailed to IMATA, 1200 South Lake Shore Drive, Chicago, Illinois, USA, or faxed to (312) 939-2216. Address changes should be sent to IMATA's Secretary, Laura Yeates, at the same address. Address changes can also be made online at IMATA's web site, www.imata.org.

©Copyright 2011. All of the articles contained within *Soundings* are the personal views of the respective authors and do not necessarily represent the views of IMATA or its Board of Directors.

CONTACT US

1200 S. Lake Shore Drive, Chicago, Illinois 60605 USA
PHONE (312) 692-3193 FAX (312) 939-2216
info@imata.org or visit our website at www.imata.org

DESIGN & PRODUCTION

Lunar Cow
137 S. Main Street, STE 202 • Akron, OH 44308
(330) 253-9000 • www.lunarcow.com

Printed on recycled paper.



IMATA BOARD OF DIRECTORS

| | |
|--|--|
| PRESIDENT MICHAEL OSBORN Mystic Aquarium & Institute for Exploration | PAST PRESIDENT DAVE ROBERTS SeaWorld San Diego |
| FIRST VICE PRESIDENT BILL WOLDEN Dolphin Quest, Inc | TREASURER PATTY SCHILLING New England Aquarium |
| SECOND VICE PRESIDENT GRANT ABEL Ocean Park Hong Kong | SECRETARY LAURA YEATES U.S. Navy Marine Mammal Program |
| THIRD VICE PRESIDENT MICHELLE SOUSA Long Beach Aquarium | DIRECTOR-AT-LARGE CHRIS DAVIS A to Z Animal Management |
| PRESIDENT-ELECT SHELLEY WOOD Dolphin Discovery | |

COMMITTEE CHAIRS

| | |
|--|---|
| ACCREDITATION BILLY HURLEY Georgia Aquarium | HONORS AND AWARDS MIKE POOL SeaWorld San Antonio |
| ANIMAL TRAINING ADVISORY TODD COFFMAN SeaWorld Orlando | INTERNATIONAL SERVICES SUNNA EDBERG Kolmarden |
| DENNIS CHRISTEN Georgia Aquarium | LEGISLATION, INFORMATION, AND POLICY Michael Osborn Mystic Aquarium & Institute for Exploration |
| CENTRAL OFFICE KEN RAMIREZ John G. Shedd Aquarium | LIAISON DAVE ROBERTS SeaWorld San Diego |
| CONFERENCE ERIN CLARK New England Aquarium | NOMINATIONS AND ELECTIONS DAVE ROBERTS SeaWorld San Diego |
| CONSERVATION AND RESEARCH DEBI COLBERT Association of Zoos and Aquariums | MERCHANDISE ERIN CLARK New England Aquarium |
| EDUCATION/MEMBERSHIP SERVICES MADELYNN HETTIGER John G. Shedd Aquarium | PUBLICATIONS PATRICK BERRY Disney's Animal Programs, The Seas |
| FINANCE TRACI BELTING Seattle Aquarium | REGIONAL WORKSHOPS STACI LONSKI Indianapolis Zoo |
| HISTORIAN CHERYL MESSINGER The Dolphin Connection | SPONSORSHIP CHRIS SCULLION U.S. Navy Marine Mammal Program |

CHIEF EDITORS

| | |
|--|--|
| PROCEEDINGS HEATHER KEENAN Miami Seaquarium | WEBSITE BEAU RICHTER Long Marine Laboratory and Aquarium |
| SOUNDINGS PATRICK BERRY Disney's Animal Programs, The Seas | FACEBOOK MICHAEL HUNT Georgia Aquarium |



CHIEF EDITOR
PATRICK BERRY – Disney's Animal Programs, The Seas

EDITORIAL DIRECTOR
MICHAEL OSBORN – Mystic Aquarium & Institute for Exploration

ASSOCIATE EDITOR
SUZANNE SMITH – SAIC BioSolutions
BACK TO BASICS – Marcia Thissell
ENRICHING ENVIRONMENTS – Ben Schreiner
OFF THE SHELF – Michael Belshaw
PRODUCT PROFILE – Chris Scullion
TRAINER'S FORUM – Robert Roozendaal

ASSOCIATE EDITOR
BETH AMENT – Animal Behavior Consultant
REGIONAL REPORTS

| | |
|----------------------|-----------------------|
| Asia | Phillip Wong |
| Australia | Ryan Tate |
| Canada | Brian Sheehan |
| Caribbean Islands | Adrian Penny |
| Europe North Central | Christiane Thiere |
| Europe Northeast | Sunna Edberg |
| Europe Northwest | John-Rex Mitchell |
| Europe South Central | Pablo Joury |
| Europe Southwest | Monika Lechermeier |
| Japan | Haruhiko Kato |
| Mexico | Alex Mata |
| Middle East | Tommy Wilken |
| Pacific Islands | Stephanie Vlachos |
| Russia/Ukraine | Monika Lechermeier |
| South Africa | Gabby Harris |
| South America | Miguel Marques |
| U.S. Midwest | Stacey Lonski |
| U.S. North Central | John-Rex Mitchell |
| U.S. Northeast | Beth Manning |
| U.S. Northwest | Cynthia Alia-Mitchell |
| U.S. South Central | Shannon Ray |
| U.S. Southeast | Sarah Graff |
| U.S. Southwest | Brittany Harris |

ASSOCIATE EDITOR
DENNIS CHRISTEN – Georgia Aquarium
WHAT'S UP DOC – Jen DeGroot
CONSERVATION BRIEFS – Shelly Samm
EDUCATION FORUM – Jason Jones
INNERViews – Kevin Roberts
NOTICES & ANNOUNCEMENTS – Haley Merritt
RESEARCH BRIEFS – Beau Richter

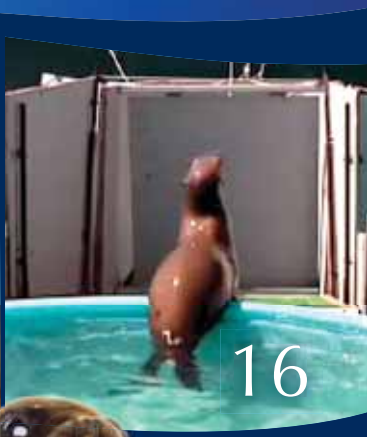
ASSOCIATE EDITOR
ERIKA PUTMAN – NMMMP Foundation
CONFERENCE COUNTDOWN – Bill Wolden
CONFERENCE SITE SELECTION – Staci Lonski
LIP SYNC – Mark Xitco
MEMBERSHIP UPDATES – Laura Yeates
MERCHANDISE – Erin Clark
NOMINATIONS & ELECTIONS – Dave Roberts
PRESIDENT'S CORNER – Michael Osborn
REGIONAL WORKSHOP REPORTS – Staci Lonski

ASSOCIATE EDITOR
NEDRA HECKER
FEATURE ARTICLES
Jennifer Alexander, Georgia Aquarium
Michael Belshaw, Marineland Antibes
Traci Belting, Seattle Aquarium
Linda Beverly, Indianapolis Zoo
Margaret Black, Mystic Aquarium
Sarah Brignac, Dolphin Research Center
Carmen Colitz DVM, Animal Eye Specialty Clinic
Matt Fripp, SeaWorld San Diego
Andy Johnson, Monterey Bay Aquarium
Nina Lambert, Theater of the Sea
Brett Long, Alaska SeaLife Center
Catherine 'CJ' Johnson, Knoxville Zoo
Patrick W. B. Moore, SAIC BioSolutions
Ken Ramirez, John G. Shedd Aquarium
Terry Samansky, DolphinTrainer.com
Patty Schilling, New England Aquarium
Grey Stafford, Wildlife World Zoo

PHOTO ARCHIVIST
MARK TODD - SAIC BioSolutions

FILLERS AND FACTOIDS
DENNIS CHRISTEN - Georgia Aquarium

PUBLICATIONS CHAIR
PATRICK BERRY – Disney's Animal Programs, The Seas



In This Issue

- FEATURES**
- 10 **DESENSITIZATION**
Desensitization for Life
 - 16 **REMOTE TRAINING OF A SPATIAL TASK**
Which Way Did I Go? Remote Training of a Spatial Memory Task to Assess the Effects of Domoic Acid Exposure in Stranded California Sea Lion (*Zalophus californianus*)
- IMATA BUSINESS**
- 4 **PRESIDENT'S CORNER**
You have a voice and what you say matters to us!
 - 6 **CONFERENCE COUNTDOWN**
It's time to make plans for the 39th Annual IMATA Conference being held in Miami, Florida, 18-23 September 2011
 - 26 **CANDIDATES FOR IMATA'S 2012 BOARD OF DIRECTORS**
Preview the nominees and cast your vote online



DEPARTMENTS

- 5 **CONSERVATION BRIEFS**
Features conservation tidbits from around the world
- 14 **ENRICHING ENVIRONMENTS**
How enriching is your environment?
- 20 **REGIONAL REPORTS**
Keep up on news from IMATA members around the world
- 25 **NOTICES & ANNOUNCEMENTS**
Information on conference dates and more
- 28 **TRAINER'S FORUM**
What is your stance on correcting superstitious behaviors?
- 30 **WHAT'S UP DOC?**
What should trainers look for when examining dolphins' eyes for abnormalities
- 31 **OFF THE SHELF**
John Widick reviews *Hope for Animals and Their Future* by Jane Goodall



President's CORNER



IMATA's Board of Directors, Committee Chairs, and Chief Editors met in Mystic, Connecticut, in early April 2011 to conduct IMATA business. Pictured are, front row (left to right) Becky Masuga, Grant Abel, Traci Belting and Brian Masuga. Second row (left to right) Mike Osborn, Madelynn Hettiger, Billy Hurley, Cheryl Messinger, Bill Wolden, Patti Schilling, Dave Roberts, Stacey Lonski, and Shelley Wood. Back row (left to right) Toni Loschiavo, Mike Pool, Erin Clark, Michelle Sousa, Shelley Ballmann, Laura Yeates, Patrick Berry, Debbie Colbert, Dennis Christen, Ken Ramirez, and Nedra Hecker.

You have a voice and what you say matters to us! IMATA is excited about formatting the website and conference events based on verbal feedback, surveys, and emails from you. If you have ideas on how the organization can serve the membership, please take the time to get involved - your participation makes a difference. Speaking of participation, if you are interested in running for a board position next year please contact me directly IMATApresident@imata.org. We will be filling positions for President, President-Elect, and Treasurer. We are also looking for cities and facilities to host the 2015 Conference, now is the time to speak with your managers to see if they are up to the challenge. It requires commitment and work, yet comes with priceless rewards.

The IMATA Mid-Year Board Meeting convened in Mystic Connecticut, 4-5 April, where board and committee chair persons reviewed IMATA business and continued to prepare for the annual conference in Miami. There were a total of 25 attendees at the meeting, committee members not able to attend were able to give their reports via Skype. It was fun to see a report delivered "virtually" on the big screen in the meeting room and it even gave us an opportunity to meet Sunna Edberg's dog, Rani, in Sweden. Other highlights of the meeting include:

- the Research and Conservation Committee, led by Debi Colbert, rolled out the application process for IMATA's Research Grant and Conservation Fund
- the Accreditation Committee announced 8 facilities have had their Trainer Development Program accredited by IMATA
- a rigorous workshop was held during the meeting in which we updated membership structure and benefits
- a live IMATA TV broadcast took place on sea lion training. This helped demonstrate virtual communication capabilities between international members. IMATA TV is under the direction of our Social Media Committee (committee chair, Michael Hunt). Toni Loschiavo was appointed chair of IMATA

TV operations. If you are interested in hosting a broadcast contact Toni using the link on the social media committee page of the website

- the ATAC committee continued production of the video glossary and welcomed aboard Dennis Christen as new co-chair, working along-side co-chair Todd Coffman
- First Vice President Bill Wolden gave an exciting review of 2011 Miami Conference, describing daily themed activities and announcing Wyland as the keynote speaker (WOW!). Keep up with the planning process by visiting the conference portion of IMATA website!
- Grant Abel is getting us pumped up for the 2012 conference in Hong Kong
- Michelle Sousa is gearing up for a unique format for 2013 in Las Vegas

The mid-year meeting was followed a week later by the meeting of the Alliance of Marine Mammal Parks and Aquariums in Alexandria Virginia, where some of IMATA's presidents, past, present, and future, took a moment for a group photo.

Thank you to all that have contributed to the relief fund for our colleagues in Japan. They are still struggling with after-shocks, limited resources (i.e. fuel, electricity, food, drinking water, etc...) and radiation. There is a link on IMATA website if you would like to contribute to the continued relief, along with updates from that region.

Feel fortunate for what you have, be kind to others, and try your best everyday!
-Mike



A few past, present, and future IMATA Presidents take a moment for a photo opportunity while attending this year's Alliance of Marine Mammal Parks and Aquariums meeting in Washington, DC. Front row, left to right, Shelley Ballmann, Shelley Wood, and Cheryl Messinger. Back row, left to right, Patrick Berry, Mike Osborn, Billy Hurley, Eric Gaglione, and Dave Roberts.

CONSERVATION BRIEFS

Manatees Aerial Surveys

In January 2011, biologists with the Florida Fish and Wildlife Conservation Commission (FWC) conducted the first aerial survey of the year on Florida manatees (*Trichechus manatus latirostris*). Twenty observers from 11 organizations tallied a preliminary count of 4,840 animals over a two day survey period. The numbers are encouraging, as 2010 saw an extremely high number of manatee deaths due to cold stress. Divided nearly even along the east and west coasts of Florida, the large numbers of manatees were sighted



Aerial view of manatees gathering at power plant in Brevard County, Florida. Photo Credit: FWC

in what was considered ideal conditions. For surveying manatees, best numbers are counted during a warming trend that follows a prolonged period of cold weather. In December of 2010, Florida had a number of cold snaps over several weeks. This type of weather causes the manatees to seek refuge in warmer areas, thus moving them to congregate in the warm springs with temperatures holding around 21 °C (69.8 °F) or power plant outflows where water that is used to cool the reactors is released out, creating a temporary warm source.

This synoptic survey, which is a count of manatees over a broad area, gives the researchers a minimum number of manatees in Florida waters, as well as a snapshot of distribution during the winter. It is not considered a population estimate, just a minimum count. Since 1991, the FWC has been required by Florida statute to conduct a survey at least once each year. (FWC release)

Baby Dolphin Deaths Spike Along Gulf of Mexico Coasts

An unusually large number of young dolphin deaths are being studied as possible casualties of the Deepwater Horizon oil spill which began in April 2010. An estimated 779 million liters (205.8 million gallons), equivalent to almost 5 million barrels of oil, spilled into the Gulf of Mexico over more than three months. Since January of this year, the bodies of over 40 infant and stillborn calves have been recovered on islands and beaches along a 320 km (200 mile) stretch of coastline from Louisiana east across Mississippi to Gulf Shores, Alabama. Found during the calving season of this region, the mortality rate is nearly 10 times the number typically found at this time of year. None of the carcasses had outwardly

signs of oil contamination; however toxicology samples were taken from tissues during the necropsies, which may determine if chemicals from the oil spill were a factor. Without the results, it is too early to draw the conclusion that is related to the oil spill. This unusual event follows an adult dolphin mortality total for this region that nearly tripled the normal numbers. (Reuters/National Geographic News)

Whale tracked in 5,300 mile ocean journey

A thirteen year old western gray whale (*Eschrichtius robustus*), dubbed Flex, has been tracked via satellite in a migration that has taken him over 8,480 km (5,300 miles). Tagged with a satellite transmitter in October 2010 off the coast of Russia, near Sakhalin Island, Flex was recently tracked passing central California in mid-February of 2011. Researchers calculate his average speed to be around 6.5 km/h per hour (4 mph), and estimate he traveled about 160 km (100 miles) each day. The information that is being gathered from Flex's



Western gray whales (*Eschrichtius robustus*). Photo Credit: Associated Press

travels is valuable as there are only 130 known individuals of his species. This is second only to the North Atlantic right whale (*Eubalaena glacialis*) in terms of large marine mammals approaching extinction. Little is known of their behavior except they spend the summers off the Russian coast to feed. (UPI)

SAVE ENERGY AND BE GREEN

Save water by investing in a rain barrel. As much as 40 % of a home's potable water is used for yard maintenance. A typical water hose dispenses roughly 38 liters (10 gallons) of water per minute. Watering a flower bed for two minutes could fill nearly 320 drinking glasses. A 228 liter (60 gallon) rain barrel can be filled within an hour during an average rainstorm. Check with your local water agency about any rain barrel subsidies or rebates in your area. You will also be saving energy as about 4% of the United States' power goes to water supply and treatment facilities. (National Geographic Green Guide)

CONSERVATION BRIEFS is compiled by **Shelly Samm**.



2011 CONFERENCE COUNTDOWN



By First V.P. Bill Wolden

The next IMATA Conference will be held in beautiful South Beach in Miami, Florida! We have a LOT of new and exciting things planned this year, and this article will help you get organized and plan your trip!

CONFERENCE DATES

Conference start date = **Sunday, September 18, 2011**

Conference end date = **Friday, September 23, 2011**

CONFERENCE HOTEL

Loews Miami Beach Hotel

- 1601 Collins Ave., Miami Beach, FL – located on South Beach
- Room rates = \$189/night
 - Single = \$189 (king bed)
 - Double = \$94.50 each (single king bed or two twin beds)
 - Triple = \$63 each (two twin beds or single king bed with pullout sofa twin bed)
 - Quad = \$47.25 each (two twin beds)



- You MUST request two twin beds if needed since these rooms are limited and not guaranteed
- Book your room early to ensure they don't sell out!!
- If you have a roommate, you must provide everyone's name when making the reservation otherwise they will not be able to check in
- Room rates apply three (3) days before and after the conference based upon availability
- Hotel reservations available by phone: 1-877-604-1601
- Be sure to tell reservationist you are with IMATA when making reservation by phone to receive special IMATA room rate
- Hotel reservations link available on-line at IMATA Conference Web site at www.miami2011.imata.org
- If making reservations on-line, you must use this direct link to receive special IMATA room rates

ROOMMATE FINDING SERVICE

- If you need help finding a roommate for the conference to help you lower your room rate please use our 'FIND A ROOMMATE' service located on the IMATA Conference Web site at www.miami2011.imata.org.

TRANSPORTATION

- Fly into Miami International Airport (MIA)
- Take a taxi to hotel = \$32.00
- Rental cars are not recommended, but if you must drive then definitely carpool
- Daytime parking at hotel = \$26.00 and overnight parking at hotel = \$37.00
- Cheaper option across street of hotel: overnight = \$16.00

CONFERENCE REGISTRATION RATES

| TYPE | PRE-REGISTRATION (UNTIL 1 AUGUST 2011) | REGISTRATION (AFTER 1 AUGUST 2011) |
|------------------------|---|---------------------------------------|
| Full week – Member | \$325 | \$400 |
| Full week – Non member | \$400 | \$475 |
| Daily – Member | \$100 | \$125 |
| Daily – Non member | \$125 | \$150 |

CONFERENCE REGISTRATION NOW OPEN!!!

- Register on-line at www.miami2011.imata.org
- Pre-registration rates extended until 1 August 2011
- Full pre-registration refunds available until 1 August 2011
- Full registrations include all nighttime events: Icebreaker, Informal Night, and the Honors & Awards Banquet, but daily registrations do not.
- Tickets to these events may be purchased separately for daily registrations and guests on-line at www.miami2011.imata.org.
- Full registration or corresponding daily registration is required to attend each Career Night function.

HOST FACILITY

- Miami Seaquarium
- 38-acre tropical paradise with dolphins, killer whales, sea lions, sea turtles, manatees, and more
- 8 different marine animal shows, daily presentations, and interaction opportunities
- www.miamiseaquarium.com



ANIMAL TRAINING SEMINAR

- Ken Ramirez will be conducting his Introduction to Animal Training Seminar before the conference
- Time = Sunday, 18 September 2011 from 9am to 6pm
- Cost = \$75/person
- Registration for seminar is available on-line NOW at www.miami2011.imata.org
- Space is limited so please book early!!!



NEW! OPENING VIDEOS x 5

- **DEADLINE EXTENDED!** – All video footage due by 15 May 2011
- We are doing five (5) Opening Videos this year, each with a different theme:
 - Dance! Love! Laugh! Train! Sing!
- A different music video compilation will be played at the beginning of each day of the conference
- Visit the conference web site at www.miami2011.imata.org for specific details on the types of footage recommended for each themed video
- Please submit only 5 minutes of footage for each theme (25 minutes total)
- Send footage in any of the following formats:
 - Mini-DV, standard DV and DVD (we cannot accept anything in VHS, PAL or Beta formats)
 - All footage tapes and discs will NOT be returned
 - All audio on your video will be erased
 - Do not send pre-edited footage with special effects (very difficult to use)
 - All submitted video footage must include a SIGNED RELEASE FORM allowing IMATA to use it
 - SIGNED RELEASE FORM available from Bill Wolden at bwolden@dolphinquest.com
 - Mail all footage and release forms to: Bill Wolden, Dolphin Quest, Inc., 1880 Harbor Island Dr., San Diego, CA 92101

FREE TRIP DRAWING

If you pre-register for the conference by 1 August 2011, then you are automatically eligible for the **FREE TRIP DRAWING** to be awarded at the Business Meeting during the conference. You must be present to win.



CONFERENCE SCHEDULE

(subject to change)

Sunday, 18 September 2011

- Animal Training class
- Conference registration
- Icebreaker

Monday, 19 September 2011

- Opening Video #1 = Dance!
- Opening ceremonies
- Keynote speaker: Wyland – World renowned marine life artist
- Formal presentations
- VIP Lunch Chat with IMATA Board members
- Workshops
- Career Night #1 – Resume Review and Interview Skills Workshop



DANCE

Tuesday, 20 September 2011

- Opening Video #2 = Love!
- Formal presentations
- Miami Seaquarium facility visit



LOVE

Wednesday, 21 September 2011

- Opening Video #3 = Laugh!
- Formal presentations
- Panel Discussion: Education Messaging in Programs and Shows
- VIP Lunch Chat with Panel Discussion members
- IMATA Game Show
- IMATA Business meeting
- Career Night #2 – Deluxe Job Fair and Job Interviews



LAUGH

Thursday, 22 September 2011

- Opening Video #4 = Train!
- Formal presentations
- Foreign language presentations
- VIP Lunch Chat with Facility Owners & Managers
- Poster Presentations and Art Contest
- Informal Night, Live Art Auction & Silent Auction with Ice Cream Social



TRAIN

Friday, 23 September 2011

- Opening Video #5 = Sing!
- Formal presentations
- 2012 Conference presentation
- Swim Test workshop
- Honors & Awards Dinner and Ceremony
- Dancing



SING

FORMAL PRESENTATIONS

- All abstracts due by 1 July 2011
- Criteria, instructions and forms for submitting abstract available on-line at www.miami.2011.imata.org
- Criteria snapshot:
 - 15 minute presentation
 - 5 minutes of questions
- Formal presentations will be pre-selected by 1 August 2011 or earlier

POSTER PRESENTATIONS

- All abstracts due by 1 July 2011
- Criteria, instructions and forms for submitting abstract available on-line at www.miami.2011.imata.org
- Criteria snapshot:
 - Maximum poster size is 1 meter x 1 meter (3.28ft. x 3.28ft)
- Poster presentations will be pre-selected by 1 August 2011 or earlier

NEW & IMPROVED! INFORMAL PRESENTATIONS

- All abstracts due by 1 July 2011
- NEW – You must submit an abstract for your information presentation and no walk-ins will be allowed during the week of the conference
- Criteria, instructions and forms for submitting abstract available on-line at www.miami.2011.imata.org
- Criteria snapshot:
 - 10 minute presentation
 - No questions afterwards
- Informal presentations will be pre-selected by August 1, 2011 or earlier

JOIN THE 2011 IMATA JUDGING TEAM

- If you are interested in becoming a judge for the 2011 IMATA Conference, please contact Mike Pool at HonorsAwards@IMATA.org immediately.
- Team of 6-8 judges will judge every paper and poster and then vote on who will receive awards
- We are looking for IMATA members with all levels of experience from novice to experienced
- Criteria needed to be met to be selected as a judge:
 - Be an IMATA member in GOOD standing
 - NOT presenting or authoring a paper or poster this year
 - Have NOT been a judge in the past 3 years
 - Able to attend ALL formal presentations and view all posters
 - Able to keep your identity as a judge a SECRET for entire conference
- If you meet these criteria, please contact Mike Pool immediately!
- All judges will receive a GIFT OF THANKS and will be recognized during the Honors and Awards Banquet

NEW & IMPROVED! SAIC BIOSOLUTIONS ART CONTEST



- Science Applications International Corporation (SAIC) is once again sponsoring this year's Art Contest which occurs on Thursday, 22 September 2011
- Criteria and instructions are available on-line at www.miami2011.imata.org
- Criteria snapshot:
 - All art submitted in one of three categories:
 - Humor
 - Art
 - Photography
- To enter the IMATA Art Contest, simply bring your art to the conference where we will be collecting and displaying all submissions
- Winners will receive monetary awards: \$200 (USD) for 1st Place and \$100 (USD) for 2nd Place and \$100 for Overall Winner

EDITOR'S CHOICE AWARD

- Given to the expanded abstract that most effectively and accurately follows the formatting guidelines for Proceedings and requires the least amount of editing.
- All submitted abstracts are automatically eligible for this award
 - Abstract criteria and award rules are available on-line at www.miami2011.imata.org
- Winner will receive monetary award of \$300 (USD) sponsored by Dolphin Connection

OUTERNET TECHNOLOGIES AWARD



- Recognizes the best or most innovative use of science and technology in training sessions, shows, play sessions, husbandry, conference presentations, or record keeping for any formal, informal, or poster presentation.
- All presentations are automatically eligible for this award
- Criteria for this award available on-line at www.miami2011.imata.org
- Winners will receive monetary awards: \$200 (USD) for 1st Place and \$100 (USD) for 2nd Place

SONNY ALLEN PROFESSIONAL ACHIEVEMENT AWARD



- Nominations due by 1 August 2011
- Honors an individual who has demonstrated a dedication to the field of marine mammal science, training, and service to IMATA
- Criteria for nominations available on-line at www.miami2011.imata.org
- Nominations submitted to our current IMATA President, Michael Osborn at President@IMATA.org



Come Meet Wyland!

KEYNOTE SPEAKER – WYLAND!

- Wyland, world renowned marine life artist, will talk about his work, his conservation fund, and will paint live on stage.
- His artwork will also be auctioned off during the Live Art Auction later in the week

EXCITING CONFERENCE HIGHLIGHTS

NEW! ESSAY CONTEST

- All essays due by 1 August 2011
- Write an essay that answers the following questions: "What does IMATA mean to you? How has IMATA helped or changed the lives of your animals or yourself?"
- Submit essay on-line at www.miami2011.imata.org
- Criteria snapshot:
 - 500 words or less
 - Current member of IMATA in good standing
 - Attending 2011 IMATA Conference in Miami
- Winner will receive a FREE CONFERENCE REGISTRATION and will present their essay during the Opening Ceremonies of the conference

NEW! LIVE ART AUCTION

- Bill and Billy are back to emcee a hilarious live auction focusing on one-of-a-kind marine themed art pieces including paintings donated by Wyland

NEW! PANEL DISCUSSION

- Panel of experts to discuss "Education Messaging in Animal Programs and Shows"
- Panel members to be announced soon



photo courtesy of Dolphin Quest

NEW! VIP LUNCH CHATS

- Bring your lunch and sit down to chat with a variety of interesting people:
 - IMATA Board members and Committee Chairs
 - Panel Discussion experts
 - Marine animal facility owners and managers



NEW! CAREER NIGHTS x 2

- Career Night #1 = Resume Review and Interview Skill Workshops
- Sign up for the Resume Review event now at www.miami2011.imata.org - space is limited.
- Career Night #2 = Deluxe Job Fair and Job Interview Room



NEW! FOREIGN LANGUAGE FORMAL PRESENTATIONS

- Three formal presentation will be conducted in their native language with English subtitles in their PowerPoint



NEW! SWIM TEST WORKSHOP

- Come join the fun to experience an actual Swim Test run by experts in the field
- Sign-ups will occur during the conference



NEW! ANIMAL WORKSHOPS

- Animal Workshops run by experts in the field
- Specific workshop topics will be announced soon



EXPANDED! EXHIBITOR HALL

- A large array of exhibitors will be located in a huge ballroom all week
- All coffee breaks, VIP Lunch Chats, and other events will also be located in this space to help you take advantage of these exciting exhibitors here to offer incredible business opportunities
- The Conference Sponsor and Exhibitor Packet is available on-line at www.miami2011.imata.org under the 'Sponsorship and Exhibit' and is filled with additional information.

SPONSORSHIP OPPORTUNITIES

- We are actively collecting sponsorships for this year's conference which allows us to provide a lower conference registration rate and include more food throughout the week
- If you are interested in becoming a \$2,500 Facility Sponsor – please let us know immediately by contacting Bill Wolden at bwolden@dolphinquest.com
- Current \$2,500 Facility Sponsors include:

| | |
|--------------------|----------------------|
| • Miami Seaquarium | • Dolphin Connection |
| • Dolphin Quest | • Mystic Aquarium |
| • Georgia Aquarium | • Amneville Zoo |
| • SeaWorld | |
- There are additional sponsorship opportunities available and to help you decide how to get involved, the Conference Sponsor and Exhibitor Packet is available now at www.miami2011.imata.org under 'Sponsorships' and is filled with useful information including our list of benefits for each sponsorship level.



2013 Conference Site Announced

Where can you find hundreds of showgirls, poker chips, Elvis impersonators, and the world's most dedicated marine animal trainers all in one place? The 2013 International Marine Animal Trainers' Association's 41st Annual Conference. That's right, we're headed to Vegas!

Las Vegas, Nevada is one of the top travel destinations in the world with over 37.5 million visitors each year. Combine that with an international airport just minutes away, average fall temperatures from 60-80 degrees F, and accommodations to fit every lifestyle, and Las Vegas becomes an ideal host city for our annual conference. Las Vegas is also centrally located to some of the top natural attractions in the US, including the Hoover Dam, Grand Canyon, and Death Valley National Park. IMATA's 3rd Vice President, Michele Sousa, is already hard at work to make this a great conference, we hope to see you there.

2011 Miami Florida with host Miami Seaquarium

2012 Hong Kong, China with host Ocean Park Hong Kong

for Life!

Grey Stafford, PhD

Recently, while reviewing a paper about zookeepers teaching animals cooperative behaviors, I was struck by the behavioral side effects that emerged from the experimental method used. The goal of the study was to condition behaviors that would facilitate artificial insemination in certain wild animals on public display—featuring species notorious for their difficulty in fostering successful reproduction. However, the authors noted their design created a few behavioral problems such as increased social aggression.

In the end, the biggest training challenge to come from this pilot study was the same one we all face—the need for greater desensitization training of our animals regardless of how timid or confident they may normally be. For it does not matter what breed or species, or what our ultimate behavior goals may be, active desensitization is a life long process we ought to pay attention to each and every day. Doing so will help prevent our pets from developing their own behavioral side effects such as aggression, avoidance, fear, anxiety, escape, stereotypy and so on.

According to the training glossary¹ of the International Marine Animal Trainers' Association (IMATA), desensitization is a "process of using time or experience to change an



For decades, desensitization training with positive reinforcement has improved bottlenose dolphin care, reproduction and survival through regular (e.g., monthly) voluntary blood sampling. Blood is usually collected through the tail flukes with the animal floating at rest, holding its breath and upside down.

animal's perception of a stimulus from a value, ... to neutral or no value." When trainers think of desensitization, they are usually concerned with reducing the aversive value of a stimulus, such as eliminating a dog's fearful reactions to thunderstorms by providing reinforcing consequences for calm responses. However, as an aside it's important to remember that desensitization cuts the other way, too. For example, leaving the same few dog toys out day after day can reduce the reinforcement value of those toys. Similarly, using a clicker repeatedly, tooting all day long on a whistle, or shouting "good boy" over and over again to mark precise behavior approximations (what dolphin trainers first called "bridging a behavior") without following those signals with meaningful reinforcement can weaken (i.e., desensitize) the effectiveness of those bridging stimuli. Since we need a strong bridge (in whatever form) to accurately and precisely reward improvements in the behaviors we want to teach, including reducing fearful and anxious responses, it is vital that we not inadvertently desensitize our animals to this key training tool through its overuse and under-reinforcement.

When dealing with the scarier things that may enter a pet's life, the importance of our commitment to unrelenting desensitization as part of any behavioral training plan cannot be overstated. We should consider it a full-time endeavor because every unfolding experience, planned or unplanned, from the exciting to the mundane, is an opportunity for animals to become less sensitive to subtle and not so subtle changes in their immediate environment. It's important because the converse is also very true. Neglecting desensitization opportunities can quickly turn what was once just a minor startled response to some environmental change into a full-blown behavior crisis. As proof, I offer the large number of pet behavior issues that frustrated TV viewers share with me each month that can be traced back to inappropriate or insufficient desensitization training. For example, a dog that incessantly barks at any and all disturbances such as doorbells, phones, other dogs, visitors, even the slightest environmental changes. Many pet owners simply do not see how their own immediate reactions to their pet's burgeoning behavior issues are interconnected.

On the other hand, trainers who early on recognize that desensitization forms the foundation of all future training goals tend to have animals that achieve success faster and maintain it longer. One of the best examples of the power of



Desensitization approximation of a juvenile female *Manta birostris* (approximately 12' disc width) following the target through a handling stretcher as part of the Georgia Aquarium's manta training program.

desensitization training with positive reinforcement is the growing trend of collecting voluntary blood samples from exotic animals. As every human child knows, drawing blood hurts! Momentarily anyway. Teaching an animal to reliably engage in a precision behavior that undoubtedly causes some temporary discomfort, especially when that animal is ill and not likely to be motivated by much, including food, requires a level of trust with the trainer that can only be attained with exclusive use of positive reinforcement.

One such species, the bottlenose dolphin, has been trained on voluntary venipuncture for decades. And there's good reason for devoting significant training resources to reliably achieving this task. In the wild, showing weakness leads to being singled out by potential predators. So like many species, cetaceans are good at masking any underlying illness or injury, often until conditions are life threatening. Thus, the capacity to consistently (e.g., monthly) collect blood from relaxed but still wild animals gives animal managers access to a host of baseline data for each individual animal, making early detection and successful treatment of infection or disease possible.

The foundation for this important behavior is regular (i.e., daily) desensitization training for each of the component approximations that comprise the complete task such as: offering attention, rolling over and presenting the tail flukes, alcohol swabbing, needle insertion, holding still during blood collection, accepting positive reinforcement at the behavior's conclusion and even immediately repeating the behavior if necessary—all the while remaining relaxed. I have known some animals to be so reliable at this behavior they voluntarily gave blood several days in a row during a serious illness when daily monitoring was required. If that doesn't impress you, remember that dolphins are air breathers just like us. They do all these steps while lying perfectly still upside down holding their breath!

While most dog trainers probably don't go to such lengths to

teach pets venipuncture, there are plenty of situations that may cause a similar temporary discomfort and/or fear response. Take a common behavior like trimming nails on a dog. Like many animals, it's not naturally a favorite thing for my German Shepherd dog to do. So I take every opportunity to touch, tickle, scratch, gently pinch and play with her feet, toes and the spaces in between at all times of the day and night. In some cases, just as we did with the dolphins above, I strategically plan out my positive reinforcements and approximations, taking into account my best estimate for what I think (i.e., educated guess) she can accomplish today. There's a clear picture in my mind of what "success" will look like and how long a duration I can expect: calm muscles, normal breathing, eyes open but not wide, extended and relaxed limbs with no withdrawing of paws, and no interference from her open mouth to my gentle manipulation of her feet!

Then there are times when we're both lounging on the couch or dog pillow and a formal nail trimming session is the farthest thing from her mind. That's when we seem to make some of the most significant progress! For every nail clipped she probably experiences 10 or more of these quick and casual desensitization sessions with



Minimizing the role of negative reinforcement while strategically providing positive reinforcement for calm, cooperative behaviors helps wild species under threat like this Ring-tailed lemur.

me calmly manipulating her toes and feet, with and without the trimmers in my hand. In order to keep the behavior response strong for a lifetime, that high ratio of desensitization training sessions to actual clipping is not likely to change much even as she becomes more



Desensitization training allows keepers to apply eye ointment to sensitive areas on one of the world's largest land mammals, a white rhino.

reliable at nail trimming.

The same scenario often plays out in a zoological setting. For all the detailed pre and post training session planning that goes into a typical zoo day, it is often the unplanned, spur-of-the-moment desensitization opportunities that reap the largest rewards, (so to speak) for the trainer alert enough to capitalize on such learning events. This is important because, in most cases, a keeper's time with and access to his or her charges is often measured in minutes, not hours. There simply aren't enough training opportunities to waste even one. If we aren't attentive to the details before, during and after, these limited encounters can quickly go awry!

Suppose, for example, a male ringtail lemur, with a history of aggression towards blond-haired people, begins to display agonistic behaviors at a new fair-haired keeper. The keeper, unaware of the animal's history and what these species-specific behaviors mean, carries on about his tasks outside the exhibit irrespective of the animal's actions. If the keeper, oblivious to the effect his presence is having on the lemur, should happen to depart at the height of the animal's duration, energy, and/or frequency of aggressive responses, then these agonistic displays will persist and likely worsen. Compare that outcome to when an alert keeper decides to hang around while the animal continues to display—not to overtly antagonize the lemur, but simply to calmly "wait it out" until the duration, energy (i.e., intensity), and/or frequency of aggressive outbursts subsides even a little. True, in extreme cases, these unwanted behaviors may not fully subside, but with patience, awareness and ideally, forethought, an alert keeper can keep these unwanted behaviors from escalating. Simply by paying attention to what the animal is doing before he/she departs, a keeper can improve the outcome for an otherwise aggressive animal in that specific (and daily occurring) topography.²

Of course, dog trainers know this happens (or not) because negative reinforcement is at play. When aversive things, events, stimuli or as in the previous example, blond haired zookeepers are removed (where the "negative" part of the term comes from) from an animal's immediate environment,

the behaviors the animal happened to be doing (at the point of removal) are reinforced. That's why it is so very important we pay attention to what we are doing around animals at all times—to avoid inadvertently [negatively] reinforcing unwanted, uncooperative, fearful or aggressive responses, however mild or severe. Negative reinforcement is powerful and often works insidiously to weaken the impact of any positive reinforcements we ought to be offering animals for approaching or otherwise responding calmly to scary things. Let's face it, even when we are paying attention, the environment can still be a formidable training foe!

Oh, there's one other beautiful side benefit of desensitizing animals for life. By teaching animals what's OK to ignore, we're also showing them what or rather who is important to pay attention to—and that's us.

Endnotes

1. IMATA.org behavior glossary. Grey is a contributor to this document.
2. Behavior is quantifiable—The DEFT model breaks down and tracks complex behaviors in terms of Duration, Energy, and Frequency, under various environmental conditions (e.g., home vs. dog park, carpet vs. tile floor, alone vs. group etc.) or Topography. By viewing complex behaviors as the compilation of simpler components (i.e., long or short, fast or slow, few or many, familiar setting vs. new, etc.) according to the DEFT model, trainers can readily communicate, recognize and reward incremental improvements to behaviors. Described in *ZOOMility: Keeper Tales of Training with Positive Reinforcement* (2007, iReinforce.com).

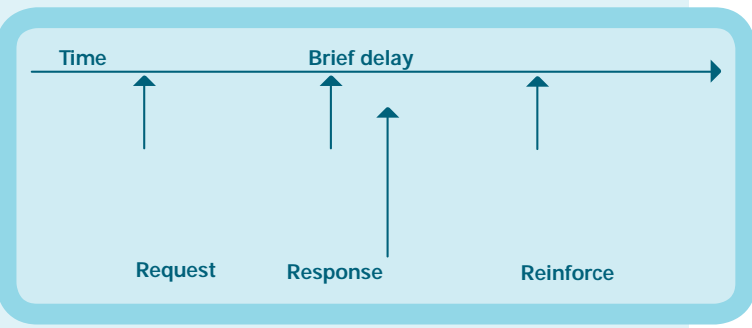
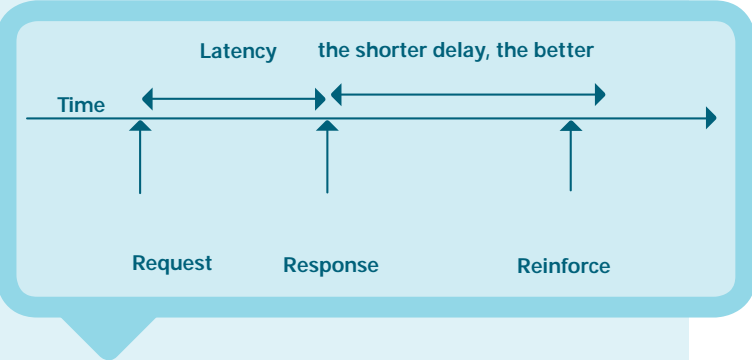
Grey Stafford, PhD began his career more than 20 years ago as a marine mammal trainer and is author of the pet training book, *Zoomility: Keeper Tales of Training with Positive Reinforcement*, featured on NBC's *Tonight Show* with Jay Leno. As Director of Conservation for the Wildlife World Zoo & Aquarium in Phoenix, he has appeared on CNN's HLN news network to discuss wild and zoo animal behavior and training. He has also made animal contributions to such programs as *Larry King Live*, *The Ellen DeGeneres Show*, *The Late Show with David Letterman*, *Martha Stewart*, and others. In addition to conducting 2-3 training seminars for zoo and pet professionals each year, Grey has been an invited speaker for national conferences and has co-authored award winning presentations and publications on animal behavior training techniques. Each week, Grey actively promotes wildlife conservation and positive reinforcement training through televised zoo and viewer call-in pet training segments.

This article has been reprinted with permission from the author and the Association of Pet Dog Trainers' (APDT) Chronicle of the Dog.

What Is a Bridge?

Animals learn best when a desired Response is immediately followed by positive reinforcement. A delay of even a few seconds between the desired Response and the presentation of a reward may change what behaviors the animal actually learns to associate with our behavior Requests (see figure at right*). Thus, one of the challenges pioneering marine mammal trainers faced while teaching dolphins distal behaviors was how to identify and communicate the instant the animal achieved a successful approximation despite being several hundred feet away from the trainer, during a mid-air jump, or with water rushing past their ears during a high speed swim. These trainers devised using whistles (as well as other visual or tactile signals) to mark the instant the animal achieved the desired Response criteria and to "bridge" the time delay (caused by physical separation from the trainer or source of reinforcement) between achieving success and receiving a significant reinforcement. Like any other conditioned reinforcer, the bridge as it became known, was paired with (i.e., followed by) other forms of positive reinforcement such as food, toys, play, praise, etc.

Today, such special conditioned reinforcers are widely used in such forms as a clicker, a whistle, a verbal "good" and so on. The most effective bridge is one that: is appropriate for the species, appears the same each time offered (e.g., "good" vs. "GOOD!" or "gooooooooooooo"), and is followed by other meaningful rewards most of the time it is offered. Trainers should be aware the environment can also inadvertently bridge animal behavior such as the opening of the cupboard where pet food is stored, the sound of an electric can opener, reaching into one's pocket for treats, etc.



Bridge
* Training with the 3R's: Request, Response & Reinforce taken from *ZOOMility: Keeper Tales of Training with Positive Reinforcement* (2007, iReinforce.com).

McRoberts Sales

specializes in the distribution of #1 Food Grade Frozen Fish and Seafood to Zoos and Aquariums around the world for animal consumption.

- No orders too small
- All items fit for human consumption
- Shipping domestically and internationally
- Product inquiries welcomed

With a vast inventory we can help you with your specialized dietary needs:

| | | | | |
|-------------|---------------|------------|---------------------|------------|
| Anchovy | Crevalle Jack | Lake Smelt | California Sardines | Squid |
| Blue Runner | Clams | Lobster | Spanish Sardines | Tilapia |
| Bonito | Glass Minnows | Mackerel | Salmon | Trout |
| Butterfish | Herring | Mahi | Shrimp | Tuna |
| Capelin | Pacific Krill | Mullet | Silversides | White Bait |
| Crab | Superba Krill | Pollock | Silver Smelt | Whiting |

Kathi L. Davis
President
kathi@mcrobertssales.com

Michelle Davis Garis
Secretary/Treasurer
michelle@mcrobertssales.com

McRoberts
SALES CO., INC.
SINCE 1968

PO Box 489 | Ruskin, FL 33575 | Phone 813.645.2561 | Fax 813.645.2565 | www.mcrobertssales.com

How Enriching is Your Enrichment?

Benjamin Schreiner Georgia Aquarium, Inc.

TOYS

DIFFERENT TEXTURES

ENVIRONMENTAL ENRICHMENT

FOOD DELIVERY

SENSORY STIMULATION

From the Egyptians who kept the first documented animals in a collection over four thousand years ago, to the zoos and aquariums that exist in the world today, mankind's interest in the animals we share this planet with, has been ever growing. As our knowledge about animal biology and behavior change, so do the facilities that house the world's living collections. No longer are animals in cages or concrete boxes, simply on display for the public. Keepers, trainers, and researchers around the world understand natural habitats and behaviors improve animal health and reproduction. One of the main ways natural behavior is achieved in living collections today is through environmental enrichment, which is more complicated than just a play time with boomer balls and garden hoses.

To understand the importance environmental enrichment plays in the lives of the animals we all love to work with every day, we first must understand what environmental enrichment actually is. According to one advisory group of the AZA, enrichment is the adding to, or changing of an animal's environment to stimulate behaviors similar to those of a healthy wild animal (Shepherdson, 1992). Ok, now we have a complicated definition, but what exactly does that all mean? In short, the purpose of enrichment is to evoke natural behavior from the animals.

Now, while keeping the goal of enrichment in mind, take a look at your program. Are you providing enrichment for the animal collection? Even if the answer is yes, are there behavioral problems that may benefit from the use of enrichment? Dr Amy Plowman, from Paignton Zoo Environmental Park, gives a brief list of some enrichment goals in her paper, "A Keeper's Guide to Evaluating Environmental Enrichment." Some of these goals include: reducing stereotypic behaviors, increasing diversity of behaviors, increasing use of enclosure space, and increasing physical fitness (Plowman, 2010). It should also be added that enrichment maintains an animal's mental fitness as well. Enrichment can fix simple behavior problems such as animals avoiding parts of their enclosure or exhibit, to more complicated ones, such as animals failing to interact with other animals of their social groupings.

In fact, a good environmental enrichment program has been determined to be so integral to an animal's psychological well-being, it is required for non-human primates in the Animal Welfare Act (AWA). Although marine mammals obviously do not fall under the non human primate category, that does not lessen their need for environmental enrichment. The AWA suggests providing complex enclosures, foraging/task oriented devices, and interaction with caretakers as acceptable means of enrichment

(AWA, 1985). All of those are very easy to achieve on a regular basis. And the effects of the enrichment on the animals is easy to track too.

One of the most common perceptions of enrichment is toys. Let's say you throw a boomer ball into a pool with dolphins. Eight hours later, the boomer ball is removed from the skimmer during final nightly checks. Has the boomer ball served its purpose as enrichment? Clearly by bouncing off the walls of the skimmer for the last eight hours, the ball has done nothing to entice natural behaviors out of the dolphins it was meant to enrich the lives of. That does not mean a boomer ball can never be enriching however. High energy behaviors such as tossing, chasing, and pushing the boomer ball are all natural behaviors, increasing exercise and non-repetitive patterns for the animal. But, in order for the ball to remain interesting to the animal, it cannot be left in the enclosure for extended periods of time. Removing the ball before it is left to the side of the pool, pairing the ball with primary reinforcers during sessions, or conditioning innovative behaviors and fading out primary reinforcers for continual new interactions are all ways to keep a boomer ball enriching.

What if a trainer puts a board along the side of the enclosure with different items/textures for sea lions rub against for a short period of time. The item provides a new surface for the animals to interact with, different from normal textures they may find in their enclosure. By leaving the item for a limited time, it remains novel to the animals, and will be interesting the next time it is used as well. Trainers and keepers fight a constant battle on inventing, discovering, and borrowing new enrichment items for the animals. Items, especially if left in for long periods of time, become uninteresting, simply new fixtures to their current living space. These evoke no more of a natural response than the walls that surround them.

Food delivery is another major way to enrich an animal's life. Foraging for scattered food is an easy way to break up an animal's normal routine; possibly limiting the time spent stereotypically pacing in one area of the enclosure. Puzzle feeders and even the amount of chewing of food required by the animal are effective ways of changing an animal's routine and preventing their daily lives from becoming mundane. Ice, gel, and gelatin are also easy ways to vary up an animal's foraging, and can easily be conditioned as secondary reinforcers!

Another important area of enrichment is sensory stimulation. Sounds and smells are two very important aspects of a wild animal's

daily life, and should not be forgotten about in human care either. From synthetic animal scent oils, to cooking spices, to recorded animal sounds, these are all easy ways to enrich most animal enclosures (with vet approval of course)! Sounds and scents are very cost effective ways to change an animal's daily routine in a big way, often evoking natural hunting, or even fight-or-flight behavioral responses. While it is important not to over stimulate the animals in a fight-or-flight response for obvious stress related reasons, some of those initial behaviors can be beneficial. Animals that have abnormal social interaction may shift to a more natural "herding" response if the appropriate stimuli are presented. While putting the animals in a state of anxiety is not healthy, nor appropriate, it is important to remember that caution and investigation are an important part of a wild animal's daily life, and can be a strong addition to any enrichment program if used properly.

Tracking the effectiveness of the enrichment program is necessary to ensure planned enrichment actually is enriching, and having positive effects on the behaviors targeted. Creating a pre-enrichment ethogram for target behaviors: such as pacing, pattern swimming, stereotypic chewing and biting, time spent isolated from social group, time spent in certain areas of an enclosure or pool, etc, should be compared to ethograms of the same behaviors during or after enrichment sessions. Some enrichment items will decrease the targeted behaviors, some may have no effect, and some may even increase them. This information can be very helpful when changing or adding to the enrichment program.

Now, take a step back and look at your enrichment program. Enrichment does not always have to be an expensive complicated series of ropes and pulleys. Even small changes can impact an animal's life in a big way. Toys floating in a skimmer or hidden away against a wall at the side of the exhibit are not serving their purpose. Rotate your toys, scents, sounds, foraging patterns to help keep the enrichment new, random and exciting for the animals. Challenge yourself to maintain the novelty of the enrichment you are providing your animals by keeping them interested. This will in turn maintain physical and mental health, as well as reduce stereotypic behaviors of the animal collection. Effective enrichment not only improves the animal's lives, but fellow team members and even the public will notice the positive change in the animals as well.

ENRICHING ENVIRONMENTS is compiled by Benjamin Schreiner.

REFERENCES:

AWA [Animal Welfare Act]. 1985. Food Security Act of 1985, Public Law 99-198. Washington DC: GPO.

Plowman, A. 2010. "A Keeper's Guide to Evaluating Environmental Enrichment." <http://www.biaza.org.uk/resources/library/images/EvaluatEnrichment.pdf>

Shepherdson, D. 1992. An introduction to behavioral enrichment. In Northeast Regional American Zoo and Aquarium Association Conference, hands-on workshop notes.

WHICH WAY DID I GO? REMOTE TRAINING OF A SPATIAL MEMORY TASK TO ASSESS THE EFFECTS OF DOMOIC ACID EXPOSURE IN STRANDED CALIFORNIA SEA LIONS (*Zalophus californianus*)

Peter F. Cook, Amy K. Bernard,
& Colleen Reichmuth
Long Marine Laboratory,
University of California,
Santa Cruz



the sorts of behaviors required for participating in the research task. In this paper, we aim to encourage trainers and researchers to remain open to opportunities involving wild animals in rehabilitation settings, and illustrate some of the challenges and potential benefits of working with these populations remotely, and under severe time constraints.

The main purpose of our research is to better understand the effects of domoic acid toxicity on wild sea lions. Domoic acid is a metabolite of increasingly frequent and widespread algal blooms, and is a looming concern in marine conservation. Fish eat the phytoplankton that produce this neurotoxin, then sea lions (among other higher-level consumers) eat the fish. Once in the blood, the toxin goes to the brain, where it can cause seizures and permanent brain damage. The damage occurs predominately in the hippocampus, a brain area important for spatial, working, and long-term memory in both humans and other animals (Goldstein et al., 2008; Eichenbaum & Lipton, 2008). Thousands of sea lions on the west coast of the United States are exposed to toxic levels of domoic acid each year. While many die, some do survive the initial exposure—we want to examine how brain damage impacts the survivors' long-term prospects in the wild. Further, we believe these sea lions can be used as an alternative to traditional laboratory animals in models of the behavioral effects of brain damage.

Our research focuses on two groups of subjects: animals showing signs of toxic exposure to domoic acid who, following treatment, are deemed stable, and control animals who have no apparent signs of toxic exposure. Each subject comes to us by way of The Marine Mammal Center in Sausalito, California. After medical treatment and acclimation to captivity, they are transported to our lab, where they spend about two weeks involved in training and behavioral testing. On completion of testing, they undergo magnetic resonance imaging (MRI) of their brains at AnimalScan in Redwood City before returning to The Marine Mammal Center for further rehabilitation or release.

Most of their time with us is spent learning to 'alternate' in a T-Maze. Our T-Maze is a chute descending from the animal's pool with two pairs of saloon doors at the end, one pair on the

left and one on the right. (Photo 1.) Our goal is to get the animals to voluntarily and repeatedly traverse the maze, switching doors each time in a left, right, left, right, etc. pattern. Theoretically, animals with healthy brains and animals with hippocampal damage should be able to learn this alternation pattern equally well. This type of repetitive motor learning in humans, such as learning to juggle, does not require the hippocampus. Once our animals learn to successfully alternate in the maze, we test their memory by instituting a delay—forcing them to wait for a short period at the entrance of the maze before each trip through. This is the condition where we expect to see a difference between control and brain-damaged animals. Humans with severe hippocampal damage cannot remember what they have just experienced (if you were to meet such a person they might seem normal, but leave the room and come back a minute later and they will act as if they have never met you before). Delayed alternation in the T-Maze is a way to ask the sea lions, without using language, if they can remember what they have just done. All of our subjects are potential release candidates, and should not learn to associate people with food, so all our training and testing is done remotely, with food dispensed from behind a large visual barrier.

Training begins as soon as the animal arrives and proceeds through three stages before testing. Sessions take place two to four times a day and the majority of the animals' daily allotment of fish is received during training and testing in the T-Maze. All training takes place in the animal's home pen, a large and somewhat isolated empty enclosure with a small aboveground pool.

and pointed toward the ramp. More fish is awarded when the animal reaches the bottom of the ramp. Then, fish is thrown to the side of the ramp and then into the pool to get the animal to return to the starting point, completing a circuit. Boxes on either side of the aboveground pool allow the animal to climb back into the pool without returning up the ramp. On subsequent repetitions of this circuit (henceforth referred to as a "trial"), we selectively approximate the animal closer and closer to the ramp from the pool before throwing the fish onto the deck. As soon as possible, we drop out baiting. Then the animal is rewarded only twice on each trial: for reaching the bottom of the ramp and for returning to the pool. Depending somewhat on the animal's motivation and health, about 20 trials constitutes one session. It generally takes the animal one to two training sessions (up to 40 trials) to reliably head down the ramp and back up to the pool without baiting. None of our wild sea lions has required more than 60 trials (1–2 days) to complete this phase of training.

2 Door Training

Once the animal is reliably completing trials with just the ramp, we train the animal to push through hinged saloon doors in the door-training phase.

The purpose of the door-training phase is to give the animal experience with opening saloon-style doors, which are critical components of the T-Maze. The T-Maze has two sets of doors, one leading to the left and

the other leading to the right. Each set comprises two hinged pieces of plywood that open outward. Many animals are at first hesitant to push through these apparent barriers.

During the door-training phase, we use just one set of saloon doors. This is placed centrally at the bottom of the ramp. Walls are also added to the ramp side so the animals cannot climb up or down from the side of the ramp. (Photos

3 & 4.) To begin the door training, one of the hinged plywood pieces of the pair is in

the closed position, while the other is in the open position. As soon as the animal is reliably completing ramp trials with one door closed, we approximate the second door closed on successive trials. Should the animal balk, we encourage the animal to push through by remotely opening the doors using a rope and pulley system. Fish is still provided for returning to the pool, unless the animal is slow to return to the pool, spending more than ~20 seconds on deck before returning. The door-training phase ends when the animal reliably approaches and pushes through the set of saloon doors at the bottom of the ramp. It

Most animal trainers do the majority of their work with long-term captive animals. Using positive-reinforcement based training with an animal over months and years promotes stimulus control and trust, and this foundation, in turn, clearly facilitates learning new and complicated behaviors. A great many successful collaborations between humans and animals follow this cooperative long-term model. Herein, we describe a successful, ongoing collaboration that does not fit the norm. In our research program at Long Marine Lab in Santa Cruz, California, we have trained more than 20 wild California sea lions (*Zalophus californianus*), to participate in a relatively complicated spatial memory protocol. At least half of these animals had incurred significant brain damage prior to stranding. Therefore, as not to interfere with potential release to the wild, all training has been conducted remotely, that is with no direct or visual contact between trainer and animal.

Our technique will be familiar to any trainer, comprising the most basic tenets of operant conditioning. In essence, we allow the sea lions to take part in self-guided exploratory behavior, and selectively reward them in such a way to develop



1 The T-Maze is a chute descending from the animal's pool with two pairs of saloon doors at the end.

2 A sea lion moving from the pool, down the ramp.



3 A sea lion learning to push through saloon doors.

4 A sea lion exiting ramp after pushing through saloon doors.

1 Ramp Training

Our first goal is to get the animal to climb out of the pool and walk down a ramp to receive fish. (Photo 2.) Later in training, the ramp will lead into the T-Maze, but in the early sessions, it leads down to the deck. We use a mixture of baiting and training by approximation during the initial stage of ramp training. First, fish is thrown into the pool to begin the session. Then, fish is thrown at the bottom of the ramp to get the animal out of the pool, but only when the animal's head is up



5 A sea lion moving through T-maze with saloon doors at the end. One set on the left as shown, and one set on the right.

6 A sea lion returning to the pool after exiting the T-maze.

has not yet required more than 2 sessions (40 trials, 1 day) for the sea lions to reliably push through the central set of doors at the bottom of the ramp on each trial without prompting.

3 T-Maze

The next phase is T-Maze training. The centrally located saloon doors used during Door Training are removed and the ramp now feeds directly into the T-Maze. The T-Maze consists of a chute flanked by two sets of saloon doors, one on the right and one on the left. (Photo 5.)

To begin, the sets of doors in the T-Maze are kept open. The animal is rewarded for heading down the ramp and into the chute. Some animals are nervous about entering the semi-enclosed chute—after receiving their first fish reward, some choose to walk back up the ramp to the pool without exiting via either set of doors. We do not provide a food reward for returning to the pool via the ramp.

When the animal is reliably coming down the ramp into the chute, we stop rewarding the animal at the bottom of the ramp, and begin baiting them through the doors. We do so in an alternating pattern, first baiting, for example, to the right, then to the left, then to the right, etc. It does not matter whether the animal begins to the right or the left, as the alternation pattern remains the same. This gives the animal roughly equal reinforcement history with both exits from the T-Maze. It also begins to establish the desired alternation pattern. At this point, we are leading the sea lion in a figure-eight pattern through the maze: down the ramp, through the chute of the maze, out one set of doors, back up to the pool, down the ramp, out the other set of doors, etc. (Photo 6.)

As soon as the animal is comfortably moving through the maze, which usually takes only one session (~20 trials), we close the two sets of doors at the end of the maze and stop baiting. To encourage the animal to continue alternating, we hold closed one set of doors on each trial, rewarding the animal for going through the open set. On the next trial, we switch which set of doors is held closed. At this point, the animal is rewarded when having moved all the way through the correct set of saloon doors. This allows us to close the doors behind the animal. This will be important at a later stage in training.

Getting the sea lions to reliably move through the opened doors usually takes only one session, and has never taken more than two

(~20–40 trials). When this is accomplished, we close both sets of doors. The animal must now push through a set of doors in the T-Maze to be rewarded, but we continue holding closed the incorrect set of doors on each trial. As we are able to remotely open the doors, we will open the correct set of doors to prompt the animal if he or she becomes frustrated. When the

animal is reliably pushing through the correct set of doors without prompting, which generally takes one to two sessions, and has never taken more than three (~20–60 trials), we leave both sets of doors closed, but stop holding closed the incorrect set of doors on each trial.

Now, for the first time in the training protocol, the animal is fully free to choose whichever door they like, either correctly or incorrectly. If the animal goes through the wrong set of doors, no reward is given. Most newly trained animals make a predictable pattern of mistakes; they perseverate by exiting via the set of doors (left or right) that they selected and were rewarded for on the first trial. To ease frustration following errors, we continue to provide fish rewards for returning to the pool to help keep up momentum in the session. It is important to note here that the animal receives fish in the pool whether completing a correct or incorrect trial. This could constitute a reward, albeit delayed, for selecting the incorrect set of doors. However, on a correct trial, they also receive fish reward immediately after exiting the saloon doors. Thus, there is a higher rate of reinforcement associated with going through the correct set of doors.



7 A sea lion waiting to access the T-maze during a delay Trial.

With early pilot subjects we attempted to train this phase without rewarding animals for returning to the pool, thus making a correct choice the only avenue to reinforcement. However, this approach, in conjunction with the perseveration in door-choice almost all subjects show, led to the animals' ceasing to participate. In other words, after five or six incorrect trials with no reinforcement what so ever, they would simply stop moving through the maze. By reinforcing for return to pool as well as a correct choice of doors, we are able to keep the animals participating long enough to learn the alternating pattern. The payment on return to the pool is gradually eliminated as the animal's success rate increases. The reinforcement history with both right and left maze exits likely helps during this transition from guided to free door selection as well. Most animals only choose the same set of doors six or seven times in a row before spontaneously switching to the other set of doors. If the animal simply will not switch and appears to be losing momentum/motivation, we will regress to the previous training phase, once again holding closed the incorrect set of doors and/or pulling open the correct set to prompt a switch.

Once the animal begins switching sides on their own, no more training manipulations are required. At this point, animals will often try to get back through a set of doors if they receive no reward, perhaps to try to exit through the other, "correct" set of doors. This is why we have to use doors that we can hold closed, once the animal has made a choice. Their only option on an incorrect trial is to return to the pool and try again. The mean number of T-Maze trials (not counting trials during ramp and door training) required to reach our testing criterion of two consecutive sessions (20 trials) at 85% correct or higher, is ~350 (~17 sessions, ~6 days). At this point most animals are reliably switching between sets of doors on each trial, following a consistent left, right, left, right, etc. pattern. In essence, we train them to go through the maze, but they learn to alternate properly merely by interacting with the maze with the reinforcement contingency we've established.

4 Testing

When the animal selects the correct set of doors on 85% or more trials in two consecutive sessions, we begin testing. The basic procedure is the same, except now we lower a gate at the entrance to the maze at the beginning of each trial. (Photo 7.) During this delay, the animal must actively remember which set of doors they went through on the previous trial in order to choose the other set during the up-coming trial, thus maintaining the alternating pattern.

We test the animals at two delay durations, 7 and 20 seconds. In the testing phase, each block of delay trials is run following a matched block of non-delay trials (exactly the same as those detailed in the T-Maze section). Our final measure is performance on delay trials in comparison to performance on matched blocks of non-delay trials. This gives us a measure of how impaired the animals are by the delay.

Conclusion

By the time the animal finishes testing, they have been with us for 12 to 14 days and completed anywhere from 400 to 800 trials overall. By comparing their performance from the delay and non-delay trials, and then comparing these results to the data on brain damage we get from the MRIs, we are learning about the unique challenges faced by sea lions when exposed to domoic acid in the wild. As of February 2011, we had completed testing on 20 animals. We plan to test at least another ten; as such, we do not have enough data to comment on results yet. We can report that the training has been successful, allowing us to obtain data from every subject we have acquired, even those with severe brain damage. Further, our training has not interfered with the animals' releasability—those animals we worked with that were healthy enough to be released have been, and with no apparent difficulty. Anecdotally, this training approach appears to be quite enriching, encouraging active engagement from a many otherwise sedentary individuals.

This project has already shown that training-intensive research can be conducted with non-habituated, releasable animals, remotely, in a very short period, using basic operant conditioning techniques. By carefully constructing the animals' environment and instituting clear rules of reinforcement instead of focusing on tight stimulus control, we have been able to successfully train all of our subjects to take part in a complex spatial memory task. We hope the success of this training can inspire confidence in trainers and researchers working under similar circumstances, and pave the way for other fruitful collaborations outside of the long-term captive setting.

Note: This research was conducted under authorization granted to the Marine Mammal Health and Stranding Response Program by NMFS scientific research permit 932-1489-10. This research has been approved by the Institutional Animal Care and Use Committees at both UCSC and TMMC.

References

- Eichenbaum, H, Lipton, P. (2008). Towards a Functional Organization of the Medial Temporal Lobe Memory System: Role of the Parahippocampal and Medial Entorhinal Cortical Areas. *Hippocampus*: 18, 1214-1324.
- Goldstein, T., Mazet J. A. K., Zabka T. S., Langlois G., Colegrove K. M., Silver M., Bargu S., Van Dolah F., Leighfield T., Conrad P. A., Barakos J., Williams D. C., Dennison S., Haulena M., & Gulland F. M. D. (2008). Novel symptomatology and changing epidemiology of domoic acid toxicosis in California sea lions (*Zalophus californianus*): an increasing risk to marine mammal health. *Proceedings of the Royal Society of Biological Sciences*: 7, 267–276.

Editors Note: This paper received the following awards during the 37th IMATA conference at Atlanta, GA: The Editor's Choice Award and the Animal Training Advisory Committee (ATAC) Award.

All photo credits to **Drew Wharton**

ASIA REGION

Philip Wong
Ocean Park
Hong Kong, China

DALIAN LAOHUTAN OCEAN PARK CO., LTD – Zhongshan District, Dalian of Liaoning Province, CHINA

Dalian Laohutan Ocean Park Co., Ltd is pleased to announce that female polar bear (*Ursus maritimus*); Nina gave birth to twins on 7 January 2011. The cubs had to be pulled out for hand rearing as their mother rejected them at birth. Currently, both of the cubs are doing well with the staff's intensive care.

The emperor chick (*Aptenodytes forsteri*) was fledged and then was successfully introduced to the colony.

The new arrival of 1.4 California sea lions (*Zalophus californianus*), Tossy, Sunny, Anoki, Ketou, Kinai and 1.1 walrus (*Odobenus rosmarus*) Matsa and Lena, are all progressing nicely in both their husbandry and interaction behaviors.

Around New Years day, the dolphin's team at LHT Ocean Park would like to extend a warm welcome to 3.5 bottlenose dolphins (*Tursiops truncatus*). In October, they will be moved to the new aquarium in Wuhan city of China which belongs to the same group with LHT Ocean Park and get involved in the interaction programs there.

Two spotted seals (*Phoca largha*) in Marine Mammal World are expected to deliver in late February. The staff at MMW has been preparing for the new pups birth.

OCEAN PARK – Hong Kong, CHINA

Ocean Park has recently opened its latest attraction called Aqua City with a new aquarium of 5.24 million L (1.36 million gallons). The aquarium ranks as the ninth largest in the world. Inside the Grand Aquarium, guests will encounter some 5,000 marine animals of over 400 species, including many that are new to the Park, such as the scalloped hammerhead shark (*Sphyrna mokarran*), manta ray (*Manta birostris*), Pacific bluefin tuna (*Thunnus orientalis*), Japanese skipjack tuna (*Thunnus orientalis*) and many more. The public can experience the aquatic life of diverse ecosystems ranging from the coral reef environment in the Reef Tunnel to the deep sea terrain in the Panoramic Ocean Gallery. The highlight of the aquarium is its 13 meters (42.6 ft) panoramic acrylic viewing panel.

Aqua City is the clearest expression of how the New Ocean Park seamlessly integrates conservation, education and entertainment through immersive designs, presentations and experiential encounters.

AUSTRALIA REGION

Ryan Tate
Taronga Zoo
Sydney

SYDNEY AQUARIUM – Sydney, AUSTRALIA

A few changes have been happening with Sydney Aquariums male and female dugong (*Dugong dugon*). Late last year the animals were separated as the female dugong had been losing weight and was sometimes being harassed by the male. Wuru had been receiving a course of iron supplement injections prior to the separation, and this combined with the separation from Pig seemed to bring about a big positive change in her condition and behavior. Pig was given a contraceptive implant, which is something untried for this species. The animals are now back together, eating over 100kg (220 lbs) of lettuce daily and both are in good condition with little negative interaction between them.

TARONGA ZOO – Sydney, AUSTRALIA

Taronga Zoo has had a busy holiday period with a pleasing number of 20 penguin chicks (*Eudyptula minor*) hatched and



Photo Credit: Taronga Zoo
Taronga Zoo's two Australian sea lions (*Neophoca cinerea*) Malie and Lexie.

made it to fledging into the penguin exhibit during one of Sydney's hottest Summers on record.

Taronga has also re-introduced two of Australian sea lions (*Neophoca cinerea*) Malie and Lexie, two great specimens who are stars to the Seal Show and are hoping to breed. As to be expected Malie was initially very protective over Lexie but they have now settled down and are working well in shows and often appear on stage working simultaneously.

UNDER WATER WORLD – Mooloolaba, QUEENSLAND

Underwater World recently received a male New Zealand fur seal (*Arctocephalus forsteri*) from AMWRRO (Australian Marine Wildlife Rescue and Research Organization). The pup is about a year old and only has one eye after suffering an injury before he came into human care. After a few months of care at AMWRRO he had doubled his weight and it was decided he needed a permanent home which Underwater World was happy to provide. He has been named Nelson after Lord Nelson and is proving to be a crowd favorite. Nelson has settled in very well into the facility and his husbandry training is progressing well. Nelson currently weighs 14kg (30.8 lbs) and is playing with the collection of fur seals and sea lions.

CARIBBEAN ISLANDS REGION

Adrian Penny
Atlantis Paradise Island
Paradise Island, Bahamas

DOLPHIN CAY, ATLANTIS – Nassau, BAHAMAS

Christmas came early for the staff at Dolphin Cay from December 2-22, 2010 as five successful births of Atlantic bottlenose dolphins. Four of the dames were first time Mom's, Naia, Tracey, Xtabay and Megara. The experienced mom in the



Photo Credit: Teri Corbett
Naia and calf Minas at Dolphin Cay, Atlantis.

group, Cherie gave birth to her second successful calf. Everyone is doing great. Since opening in 2007 this is the 9th successful birth bringing the collection to 14.22 Atlantic bottlenose dolphins.

Dolphin Cays Sea Lion Interaction program continues to grow and expand, with the capacity for the program reaching 60 people per day. This unique experience allows guests to interact in the shallow water with these playful animals. The newest addition of six juvenile South American sea lions (*Otaria flavescens*) and two juvenile California sea lions is the future of the programs. These new animals are integrating well in the social structure and becoming part of training and guest programs daily.

DOLPHIN QUEST BERMUDA – Dockyard, BERMUDA

At Dolphin Quest Bermuda the show season has just begun and this year a birthday guest will travel across the lagoon in a small boat alongside the dolphins.

The three calves, Cooper, Cavello and Marley who were



Photo Credit: Robyn Trainor
Marley (*Tursiops truncatus*) is learning a bow at Dolphin Quest Bermuda.

all born in April 2010 are developing their training skills and are taking on new behaviors with enthusiasm. They are continuing to participate in programs and create lasting connections with the guests.

EUROPE NORTH WEST

John-Rex Mitchell
Shedd Aquarium
Chicago, Illinois

WEST MIDLAND SAFARI & LEISURE PARK – Worcestershire, UNITED KINGDOM

Despite chilling winter temperatures of -150C (50F), the Marine Mammal Department at West Midland Safari & Leisure Park is gearing up for the new 2011 season. The young



Photo Credit: West Midland Safari & Leisure Park
Callum with some suspect looking feline companions at the West Midland Safari & Leisure Park.

Californian sea lion boys are training hard and playing even harder, spending hours everyday chasing each other about the habitat before engaging in dummy posturing battles over imaginary females. An 18-month-old male from Belfast Zoo will be arriving in the next few months to help strengthen the bachelor collection.

There is on-going research into base line cortisol level testing in the young males in conjunction with Southampton University, UK and a new research project starting on corneal opacity.

EUROPE NORTH CENTRAL REGION

Christiane Thiere
Tiergarten Nuremberg
Nuremberg, Germany

Ouwehands Dierenpark – Rehen, NETHERLANDS

After five years, sea lion theatre at Ouwehands Dierenpark had to say goodbye to Peter Giljam. Welcome to Carljin Bouwman who came back to the Netherlands from New Zealand.

Two female sea lions, Iris and Ilana, went to Karlsruhe Zoo in Germany. From Dublin Zoo came Ella a 2-year-old female and from Zoo Zagreb, a 3-year-old male named Enzo. The Sea lion theatre currently houses 2.6 California sea lions.

From private owners in the Netherlands, 1.1 blue and gold macaws (*Ara ararauna*) and 1.1 green wing macaws (*Ara chloroptera*) were added to the collection. The team is very happy with the additions and plans are made to start basic training with all the new animals.

In the autumn of 2009 the roof of the 40-year-old Sea lion Theatre had some serious leaks and will be renovated. The trainers of the Sea Lion Theatre initiated crate training with all the nine sea lions and the four macaws. The macaws are housed in the tropical house Uruuc, but for the sea lions a temporary pool was built behind the parks restaurant. Unfortunately for the public all animals are not visible at this moment. The renovations will last till the end of spring.

DOLFINARIUM HARDERWIJK – Harderwijk, THE NETHERLANDS

During a press conference 10th of December, the Dolfinarium Harderwijk in the Netherlands announced that the rescued orca (*Orcinus orca*), Morgan will not go back to sea. The Dolfinarium accepts the conclusions of the report which concluded the advice and the Dolfinarium will further research the best future for Morgan. The scientific report is examined by the Dutch Government. Dolfinarium initiated research including picture ID, DNA analyses, and acoustic ID analyses to confirm the birth group (matrilineal group) of Morgan. This information was the basis for the group of seven (inter)national researchers. The key question formulated was: The question this document aims to answer is if release of the rescued killer whale should be attempted bearing in mind the welfare and survival chances of the animal once released. Information is to be found at the Dolfinarium's website: www.dolfinarium.nl (in Dutch, the report is downloadable in English) or an article on the NAKID website: www.northatlantickillerwhales.com (English).

EUROPE SOUTH CENTRAL REGION

Pablo Joury
Amnéville Zoo
Amnéville, France

AMNEVILLE ZOO – Amnéville, FRANCE

It was a very cold winter at Amnéville zoo in east of France. Between snow and ice, the polar bears are happy to discover their new improvements. A new toy was made for them with three long wood logs with some holes tied by a rope hanging 3 meters (9.84 ft) high. The staff can put many items in the holes like clear honey, syrup, jam and meat juice. It's was a great success and the bears played for hours.



Photo Credit: Amnéville Zoo
The polar bears (*Ursus maritimus*) at Amnéville Zoo.

EUROPE NORTH EAST REGION

Sunna Edberg
Kolmarden, Sweden

KOLMARDEN – Kolmarden, SWEDEN

Kolmarden is having yet another cold winter which is challenging for all parties. The pinnipeds seem to have a lot of fun though with half of the pool surface frozen ice.

The Humboldt Penguins (*Spheniscus humboldti*) have begun to lay eggs and we are hoping for a good turnout after

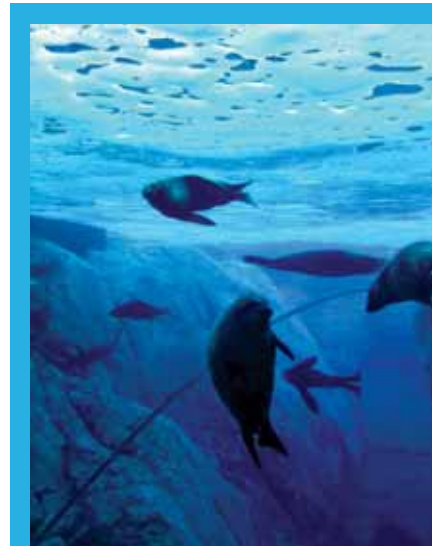


Photo Credit: Kolmarden
An underwater view of the pinniped pool at Kolmarden.

some years with very low or no success.

Kolmarden is coordinator for SAMBAH (Static Acoustic Monitoring of the Baltic Sea Harbor Porpoise) an international project involving all EU countries around the Baltic Sea, with the ultimate goal to secure the conservation of the Baltic Sea harbor porpoise (*Phocoena phocoena*).

PACIFIC ISLANDS REGION

Stephanie Vlachos
Waimanalo, Hawaii

DOLPHIN QUEST HAWAII – Waikoloa, HAWAII

At Dolphin Quest Hawaii Noelani, an Atlantic bottlenose

dolphin calf was born on 5 August 2010. From the moment she was born, trainers and guests have been incorporating her into the interactive environment. At such a young age, she is already eating fish, stationing, responding to points and taps with trainers, allowing various tactile behaviors and participating in full programs daily. Her spunk and curiosity are a joy to watch as she grows and learns at an exponential rate.

Kona, a 27-year-old Atlantic bottlenose dolphin and an amazing mother to several calves at Dolphin Quest, is expecting a baby in May.

DOLPHIN QUEST OAHU – Honolulu, HAWAII

Dolphin Quest Oahu and Dolphin Quest Hawaii are partnering with the National Institute of Standards and Technology (NIST) for the Bottlenose Dolphin Health Assessment Projects. Through long-term cryogenic storage of samples such as blood, skin, blubber, and milk, NIST is analyzing the effects of organic pollutants and trace elements.

Chosen as an indicator species, bottlenose dolphin samples from the wild and under human care will create baseline information and hopefully provide insight into cetacean health. By collecting samples from Dolphin Quest's Atlantic bottlenose dolphins, NIST will investigate how contamination exposure through diet and environment differ between animals in the wild and animals under human care. NIST is analyzing whole blood, plasma, milk and prey items for trace elements and organic pollutants to integrate these chemical measurements into the Dolphin Quest animals' life histories and diet information.

NIST has collaborations with the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA/NMFS), Sarasota Dolphin Research Program and other partners in support of marine animal health.

SOUTH AFRICA REGION

Gabby Harris
Durban, South Africa

BAYWORLD – Port Elizabeth, SOUTH AFRICA

Bayworld was extremely busy over the season with a higher guest attendance than 2009. Four green turtles (*Chelonia mydas*) finished their rehabilitation and were tagged and released off Bird Island in Algoa Bay. Bayworld received a female cape fur seal and her new born pup from Cape St Francis. Both mother and pup were in poor condition, the pup survived for 10 days before succumbing. The female received intensive veterinary care and recovered well. She was tagged and released at Bird Island three weeks later. The resident seals have started transport in preparation for redevelopment. They are being trained to crate and be comfortable when being transported by vehicle. Both trainers and the animals are enjoying this new challenge. Twenty surplus African penguin (*Spheniscus demersus*) juveniles were relocated.

SEA WORLD AT USHAKA MARINE WORLD – Durban, SOUTH AFRICA

In November, Sea World at uShaka lost a member of the South African seal family. Shadow was largely responsible for a great change in the manner that uShaka trains their animals succumbed after an illness. He was a rescued animal, after he was a victim of a shark attack sixteen years ago. He is sorely missed by staff and the public.

Dolphins took part in the specially scripted annual Dolphins by Starlight shows over the season. uShaka Sea World had record attendance over the December season. A new daily dolphin show was produced and is being very well received by the guests.

Four juvenile African penguins were transported to the Singapore Zoo. A trainer accompanied them, and Sea World



Photo Credit: Colette Bodenstaff

Sea World at uShaka in November lost a member of their South African seal (*Arctocephalus pusillus*) family, Shadow.

at uShaka would like to thank the Zoo, Jurong Bird Park and Sentosa Dolphin Lagoon for hosting her during her visit.

U.S. MIDWEST REGION

Stacey Lonski
Indianapolis Zoo
Indianapolis, Indiana

BLANK PARK ZOO – Des Moines, IOWA

The pinniped team at the Blank Park Zoo made it through a long cold winter.

All the pinnipeds continue to advance on their husbandry behaviors.

The Seal/Sea Lion exhibit will begin renovations this spring which will include new rock work, pool paint and a shade structure. The training team is very excited for the new training space and bringing zoo demonstrations closer to zoo guests.

MINNESOTA ZOO – Apple Valley, MINNESOTA

The 1.3 Atlantic bottlenose dolphins at the Minnesota Zoo were just recently reintroduced to one another. Semo, a male dolphin was introduced to the female calf, Tajjah. Tajjah was the winning name voted upon by the general public in an online contest. Allie and April, Tajjah's mother and grandmother were also reintroduced to Semo at the same time. Thus far things are going great, with all having reciprocated interest in one another.

Tajjah has begun eating pieces of fish in addition to ice and jello. In sessions we have seen her offer simple mimicked behaviors and she does well with foundation behaviors i.e. targeting and tactile.

ST. LOUIS ZOO – St. Louis, MISSOURI

In December of 2010, St. Louis Zoo acquired Dixi, a female California sea lion from Sea World San Antonio. Dixi is doing well with her training and she is incorporated into the animal programs during 2011.

U. S. NORTHEAST REGION

Beth Manning
Baltimore, Maryland

AQUARIUM OF NIAGARA – Niagara Falls, NEW YORK

The Aquarium of Niagara is excited about the progress that Diamond, a 23-year-old California sea lion has made following cataract surgery by Dr. Colitz and her team in September. Diamond developed cataracts eight years ago and lost her vision. The training staff is amazed on how well she has readjusted to her vision and the conditioned behaviors that she has regained following the procedure.

The staff is sad to report the loss of 24-year-old California sea lions, Julie and Squirt. Julie was born at the facility and

Squirt joined the pinniped group at the age of two from the Detroit Zoo. Both animals participated in daily educational demonstrations, encounters and research projects.

The two juvenile California sea lions, Kiah and Arie are progressing very well with training and incorporation into the daily presentations for guests.

The Aquarium of Niagara would like to bid a fond farewell to trainer Chelsea Neff in her future endeavors.

MYSTIC AQUARIUM & INSTITUTE FOR EXPLORATION – Mystic, CONNECTICUT

The Arctic Coast team at Mystic Aquarium and Institute for Exploration has been working with Greg Marshall from National Geographic Remote Imaging, on a research project testing attachments for beluga whale (*Delphinapterus leucas*) Crittercam deployment. Both females, Kela and Naku, took part in the research, which included wearing the Crittercam for a fixed amount of time and performing high energy behaviors with the Crittercam on various locations on the whale's body. Congratulations to the team for successful deployment test with only 2 ½ week training window.

The Arctic Coast team would like to welcome intern Rachel Krause.

The Pinniped and Penguin team transported female Steller sea lion (*Eumetopias jubatus*), Eden, to Alaska Sea Life Center (ASLC) in support of the Consortium efforts with breeding and research. Kyle Hurst, one of Eden's primary trainers, spent 10 days at ASLC to assist with her acclimation. Mystic Aquarium is excited about working with Steller sea lion trainers at ASLC, Vancouver Aquarium, Oregon Zoo, and Harderwijk, to support the advancement of animal management for the species.

Congratulations to the team on two successful SSP African penguin chicks being hatched this year.

The Pinniped and Penguin team would like to welcome interns Josh Davis and Thomas Britt.

NEW ENGLAND AQUARIUM – Boston, MASSACHUSETTS

Last fall at the New England Aquarium was busy with the preparation and hosting of the 38th Annual IMATA Conference in December. The New England Aquarium would like to thank everyone who attended and helped organize the 2010 Conference.

Since then, the animals and staff have been working through a tough winter with an unbelievable amount of snow. Repairs to the Northern fur seal exhibit (*Callorhinus ursinus*) anticipate to be completed in mid-April. The Training Department is excited to get all of the fur seals and staff back



Photo Credit: St. Louis Zoo

St. Louis Zoo acquired Dixi, a female California sea lion (*Zalophus californianus*) from Sea World San Antonio.

in one place. The Aquarium's new Shark and Ray Touch Tank is scheduled to open in April as well. This winter has also been particularly busy for the Rescue and Rehabilitation Department, as a record number of over 100 cold-stunned and stranded sea turtles came through the doors of the new Animal Care and Rehabilitation Facility.

In January, the staff welcomed Jamie Mathison as a full-time regular trainer.

PITTSBURGH ZOO AND PPG AQUARIUM – Pittsburgh, PENNSYLVANIA

The Pittsburgh Zoo & PPG Aquarium was chosen as one of Polar Bears International's Arctic Ambassador centers. The Zoo hosted a travelling exhibit, The Last Polar Bear, which featured photographs by Steven Kazlowski and illustrates the challenges wild polar bears face due to climate change. Polar Bears International President and CEO, Robert Buchanan helped unveil the exhibit with an inspirational presentation. The Zoo's leadership project is to work with staff, volunteers, members, school groups and corporations to reduce the carbon footprint.

The Water's Edge team welcomes Paul Moylett, Ashley Kidd, and Jaclyn Mazza. The staff looks forward to continuing to expand the training and enrichment programs for their 2.0 polar bears and 2.0 Northern sea otters (*Enhydra lutris kenyoni*).

The Zoo's sea lion trainers are busy conditioning all four adult California sea lion females for ultrasound exams to determine pregnancies. Zoey and Maggie, 16-year-old half-sisters, have done well with ultrasounds in the past; Summer and Calli, 6-year-olds, residing at the Pittsburgh Zoo from the National Zoo, are new to the process. Sidney, the pup born on 13 June 2009 is eating fish well and is participating in daily training sessions. Maggie's pup born 26 September 2010 is playing with capelin and squid and will soon be offered live fish.

SIX FLAGS GREAT ADVENTURE AND WILD SAFARI – Jackson, NEW JERSEY

Six Flags Great Adventure and Wild Safari opened up the 2011 season with a new animal area, Safari Discoveries. Safari Discoveries is an interactive walk-through exhibit showcasing the 1.2 California sea lions, a variety of birds, reptiles, and small mammals. The mission is to emphasize the vital role of safaris in the conservation of land, sea, and sky through entertaining and educational interactions with the diverse animal ambassadors.

At Dolphin Discovery, the staff presented a new show demonstrating the beauty, strength, and athleticism of 2.0 dolphins.

U.S. NORTHWEST REGION

Cynthia Alia-Mitchell
Tualatin, Oregon

OREGON COAST AQUARIUM – Newport, OREGON

Mojoe, a rehabilitated northern sea otter, born in March 2010, was recently added to the Oregon Coast Aquarium's sea otter exhibit. Mojoe, and the resident three males were trained for a controlled introduction. All four sea otters are now on exhibit and getting along well.

A 12-year-old northern sea otter, Aialik, has been recovering from the effects of sarcocystis since fall of 2009. The permanent damage included loss of the ability to express his bladder. He has had a catheter in place since that time, which was not intended to be a long-term solution. In January 2011, the veterinarians marsupialized his bladder, to eliminate the need for a catheter. This allows him to eliminate his bladder directly through the abdominal wall. This is the first time this procedure has been done in sea otters. Aialik is healing well.

Tazzy, a 1-year-old blind harbor seal (*Phoca vitulina*), was rehabilitated by Vancouver Aquarium and joined the Oregon Coast Aquarium last summer. She was kept off exhibit in the training pool until she was trained for basic behaviors. She has

now completed basic training and has been moved to exhibit with the pinniped collection and is adjusting well.

OREGON ZOO – Portland, OREGON

At the Oregon Zoo, Steller sea lion, Gus is recovering from a bacterial infection in his eye called pseudomonas which caused the cornea to melt. His eye remained closed for many weeks, but has now opened. He no longer appears to be in any discomfort.

We have started treating the Steller sea lions for arthritis pain and support with carprofen, Cosequin, and Misoprostol.

The southern sea otter, Eddie, has started showing signs of cataracts. A head cage was constructed and mounted to help address current and future sea otter eye concerns. We have been able to safely treat eyes and do Tonovet readings on the eyes.

SEATTLE AQUARIUM – Seattle, WASHINGTON

The Seattle Aquarium is busy preparing for the 7th biannual Sea Otter Conservation Workshop to be held March 25-27, 2011.



Photo credit: Carol Jackson/Seattle Aquarium

Aadaa, a male Alaskan sea otter (*Enhydra lutris*) at Seattle Aquarium.

U.S. SOUTH CENTRAL REGION

Shannon Ray
Oklahoma City Zoo
Oklahoma City, Oklahoma

OKLAHOMA CITY ZOO – Oklahoma City, OKLAHOMA

The Oklahoma City Zoo's training staff has enjoyed the winter break and has been busy planning the 2011 season. The Ozone renovation had a temporary setback and been re-assessed by an outside consulting firm to finish both marine mammal systems this summer.

Necropsy results came back regarding the recent loss of 25-year-old sea lion which did not show any traces of lung cancer but rather simply normal aging.

The training staff would like to bid a fond farewell to part time staff member Craig Whalen and would like to extend a warm welcome to new full time trainer Amy Andree.

SEAWORLD SAN ANTONIO – San Antonio, TEXAS

SeaWorld San Antonio is getting ready for a great start to the New Year.

The staff is producing and training for a rewrite of the Cannery Row Caper show, featuring California sea lions, Asian small-clawed otters (*Aonyx cinerea*) and Pacific walrus. Trainers have been working with a Broadway director who has worked with SeaWorld for a few years now, and are currently hard at work training new behaviors for the re-launch of the show.

Last year, Education & Conservation and Animal Ambassador departments teamed up to develop a new outreach program, SeaWorld Cares, in which staff discuss reasons animals may need help, both natural and human related causes. Staff shared some of their favorite rescue success stories, and students also have the chance to meet ambassador animals that have been part of SeaWorld Cares

conservation programs. In 2010 SeaWorld Cares contributed approximately \$1.2 million to help wildlife via organizations like the World Wildlife Fund. This spring, the program is getting ready to go on the road with SeaWorld Cares.

TEXAS STATE AQUARIUM – Corpus Christi, TEXAS

At Texas State Aquarium, Jason Slade, the new Curator of Birds and Mammals, and the WildFlight staff have been revamping their free-flight bird and small mammal show by utilizing operant conditioning techniques. The staff completed voluntary harness training on the African serval (*Felis serval*) and is close to completion with the White-nosed coati (*Nasua narica*). The staff is also working on new behaviors to incorporate in the WildFlight presentation and should be showcased by spring break.

The Dolphin Bay staff had a successful transport of their 3.0 Atlantic bottlenose dolphins from SeaWorld San Antonio to TSA after exhibit renovations were complete. The staff and dolphins had an easy transition back into the show and guest interactive programs. Again, TSA would like to extend gratitude to the SeaWorld San Antonio staff for their assistance with the animals, as well as sharing their facility by allowing staff to participate in their training and interactive programs. The camaraderie between facilities will have a lasting professional rapport.

U.S. SOUTHEAST REGION

Sarah Gruff
Miami Seaquarium
Miami, Florida

AUDUBON AQUARIUM OF THE AMERICAS – New Orleans, LOUISIANA

Audubon Nature Institute has been busy in response to the BP Spill. The Louisiana Marine Mammal and Sea Turtle Rescue Program (LMMSTRP) is a primary responder for the rehabilitation of marine mammals and sea turtles throughout Louisiana. As of January 2011, almost 200 turtles (*Lepidochelys kempi*, *Chelonia mydas*, *Caretta caretta*, and *Eretmochelys imbricata*) have been rehabilitated. All but 28 have returned to the Gulf of Mexico. The remaining turtles will be released when gulf waters have a chance to warm up. Several were released with tracking devices to monitor movements and contribute to studies.

Audubon Aquarium just celebrated Emma, the sea otter's, 13th birthday and is busy training novel behaviors with Buck



Photo Credit: Audubon Aquarium

Sea turtle oil spill clean-up at Audubon Aquarium.

and Emma. AAOA wishes farewell to Michele Kelley and welcomes Noel Sutton and Suzanne Smith.

The Audubon Zoo completed many projects in 2010 for their California sea lion exhibit; most notably, a shade structure covering most of the 257,408 L (68,000 gallon) pool. Training continues with the 1.3 sea lions, focusing on Lilli, a recently blind female. Lilli underwent surgery when lenses in both eyes luxated. She is doing well and most behaviors have been transferred to tactile cues.

The zoo welcomes Ashley Schweinhart and Daryl McGill.

CLEARWATER MARINE AQUARIUM – Clearwater, FLORIDA

On 11 December 2010, Harbor Branch Oceanographic Institute and Hubbs-Sea World rescued an orphaned female neonate bottlenose dolphin. The calf was rescued from the Indian River Lagoon and was estimated to be 6-weeks-old and weighed 26.3 kilos (58 lbs). Volunteers and staff have been working around the clock to rehabilitate the calf and now, at 34 kilos (75 lbs), she is thriving. She has begun bridge conditioning and is well on her way learning husbandry behaviors that include presents and mouth open. CMA has become her permanent home and future plans include introducing her to the resident females, Panama and Winter.



Photo Credit: Clearwater Aquarium

A rescued dolphin calf at Clearwater Aquarium.

Clearwater Marine Aquarium is also proud to announce the beginning of a \$12 million dollar expansion project. This project is intended to redevelop and expand rehabilitation areas and to provide new exhibits for the resident animals.

DOLPHIN CONNECTION – Duck Key, FLORIDA

Dolphin Connection has had a very exciting winter, complete with celebrity visitors and total makeovers. In mid-December, a pilot episode for a new television show was filmed at Hawks Cay resort including some scenes shot right here at Dolphin Connection. The training staff worked with all the animals prior to the filming in preparation for the Hollywood visitors. The television show, The Last Resort, stars: Sasha Jackson, Jonathan Bennett, George Hamilton and of course Nemo the dolphin.

At the end of December Dolphin Connection was honored with a visit from former United States President Jimmy Carter, first lady Rosalynn Carter and their family of over 30 members. As part of their stay at the resort the family participated in a dolphin encounter amid photographers and members of the secret service.

The first step in what will be a lengthy and multi-faceted project was completed when the new Dolphin Connection logo was debuted. A big thank you goes out to visual



Photo Credit: Dolphin Connection

Dolphin Connection was honored with a visit from former United States President Jimmy Carter, first lady Rosalynn Carter, and their family of over 30 members.

communications firm Lunar Cow for their assistance with the rebranding project.

DOLPHINS PLUS – Key Largo, FLORIDA

The Animal Care and Training Staff are sad to announce the passing of a founding male, Little Bit. LB introduced both trainers and guests to the marine world. He left behind many girlfriends, eight offspring and four grandchildren. His loss will be felt by many.

Dolphins Plus was invited to participate with Harbor Branch Oceanographic Institute in the location, acquisition, disentanglement and release of a dolphin calf in the Indian River Lagoon. Fishing gear, consisting of heavy monofilament line and weights were removed from the calf before it was successfully returned to its mother. Dolphins Plus is proud to announce the introduction of the new Marine Mammal Research Internship. This highly competitive program will provide participants hands-on experience needed to pursue careers involving animal behavior research.

The Staff would like to welcome Cassie Snider to the Animal Care and Training Team and congratulate Dr. Hollis Byerly on receiving her PhD in Experimental Psychology.

GEORGIA AQUARIUM'S DOLPHIN CONSERVATION CENTER AT MARINELAND – Marineland, FLORIDA

The exciting news from the Dolphin Conservation Center at Marineland is that it was purchased by the Georgia Aquarium on 1 January 2011. This acquisition provides not only a stable and exciting future for Marineland's dolphins, but also long-term genetic diversity for Georgia Aquarium's dolphin collection. The DCC at Marineland and Georgia Aquarium were already partners in a dolphin breeding loan as well as in the joint venture, Dolphin Conservation Field Station in the town of Marineland, so the familiarity and shared resources made this a natural union. At this point Marineland facility will go by the name Georgia Aquarium's Dolphin Conservation Center at Marineland, but a full rebranding is expected in March 2011. The Marineland facility will continue to be open to the public and offer interaction programs, but will also focus upon breeding and research in support of the parent company's world-class dolphin shows.



Photo Credit: Georgia Aquarium

Trainer Erica Zeno swims with Lily (*Tursiops truncatus*) in Georgia Aquarium's 1.8 million gallon dolphin habitat. The AT&T Dolphin Tales gallery and show opened 2 April 2011.

The staff is happy to welcome back Senior Trainer Cat Rust, while bidding a fond farewell to Caleb Rich.

GULF WORLD MARINE PARK – Panama City Beach, FLORIDA

Gulf World Marine Park is proud to announce the return of Ron Hardy and Brad Miller as park owners. They have owned the park for over twenty years and have brought in an overwhelming amount of excitement and change.

Gulf World is currently undergoing a major renovation. The entrance of the park and many animal habitats are undergoing complete makeovers.

Gulf World recently moved 1.3 rough-tooth dolphins (*Steno-Bredanensis*) to a new habitat directly in the front of the park. The dolphins have adapted extremely well and guests entering the park are enjoying the interaction. Striker and Jett, two six month old bottlenose calves are doing great and learning from their mothers.

The staff is currently participating in the rescue and rehabilitation of over 400 cold stun sea turtles just in this winter. Most have been successfully released however; close to 50 turtles are still under Gulf World's care until the weather and their health permits their release.

MEMPHIS ZOO – Memphis, TENNESSEE

The staff at the Memphis Zoo is currently reintroducing the 1.1 polar bears back together. They have been separated since July, in hopes that Haley was pregnant. Even though there was not a cub this winter, we learned a lot of valuable information, and are hoping the coming breeding season is a success. Memphis Zoo is also preparing for some minor repairs on the sea lion exhibit, which will require the sea lions to be off exhibit for about a month.

The Memphis Zoo would like to welcome Gary Couture, who will be caring for the zoo's water quality.



Photo Credit: Memphis Zoo

The staff at the Memphis Zoo is currently reintroducing the 1.1 polar bears back together.

SEAWORLD – Orlando, FLORIDA

This winter, SeaWorld Orlando turned to its friends around the world to help choose the name for the newest killer whale born at Shamu Stadium on 9 October 2010. For the first time in the park's history, the three name choices were polled on Facebook, and friends were asked to vote for their favorite. Garnering about 55% of the votes, Makaio was chosen as the favorite, new name for the baby killer whale. The name is Hawaiian for, gift of God.

In April 2011, SeaWorld Orlando will debut its new Shamu show titled, One Ocean. This new show will feature the majestic killer whales as ambassadors of the sea, and the ocean as the center of the natural world. At the core of the show is the unifying message that both animals and humans are part of one world, with one ocean, and its future is in our

hands to cherish and protect. It's the essence of what guests love about SeaWorld, thrilling entertainment that educates and inspires them to celebrate, connect and care for the world.

THEATER OF THE SEA – Islamorada, FLORIDA

The animal care staff at Theater of the Sea have conditioned and desensitized the resident nurse sharks (*Ginglymostoma cirratum*) for participation in interactive programs, including recalling, targeting, stationing and being held. The park received a new addition to the animal collection after taking in a displaced Patagonian Cavy (*Dolichotis patagonum*) from the Key West Zoo. Facility upgrades have been completed and include replacing chain link with aluminum for the sea lion area, a new pool in the dolphin lagoon to increase social interactions and housing variability, and the upcoming launch of a state-of-the-art website with Lunar Cuv.

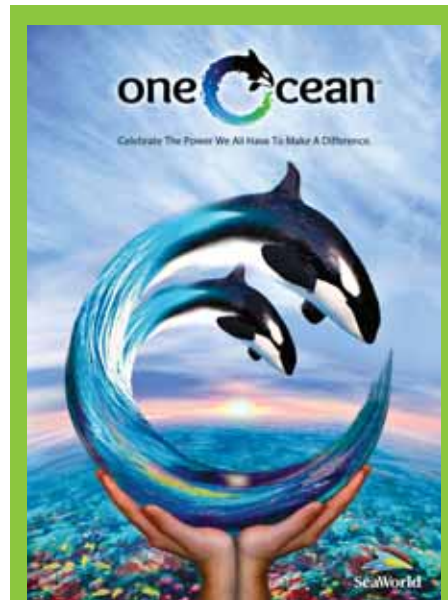


Photo Credit: SeaWorld Orlando

The One Ocean show opened 22 April 2011.

U.S. SOUTHWEST REGION

Brittany Harris
SeaWorld
San Diego, California

THE MIRAGE – Las Vegas, NEVADA

The Mirage's sister property, Mandalay Bay, will hold its annual Aquatic Medicine Seminar at Shark Reef Aquarium on 4-6 March 2011. The program consists of two full days of lectures on a wide range of aquatic health and medicine topics with an emphasis on elasmobranchs. The Mirage Animal Care staff will host an icebreaker event at the Dolphin Habitat on the evening of 4 March 2011.

The Mirage Animal Care staff is excited to host the International Association for Aquatic Animal Medicine (IAAAM) annual conference 7-11 May 2011. Weblinks: Conference Web Page: <http://www.iaaam.org/displayconvention.cfm>

The Mirage Animal Care staff would like to send a huge thank you to Chris Harris and Dan Blasko for their recent consulting services during the off season. They also would like to congratulate Amy Shulman on her recent promotion to the position of Curator of Education.

REGIONAL REPORTS is compiled by Beth Ament

Notices & Announcements

ABC DOLPHIN TRAINER ACADEMY 2011 WORKSHOPS

Learn the science of animal training while having fun working with dolphins, sea lions, and manatees. The 2011 workshops are hosted by Dolphin Discovery Puerto Aventuras, Riviera Maya, Mexico. Basic courses are scheduled for 30 May – 4 June 2011 and 5-9 September 2011, the advanced course is scheduled for 6-10 June 2011, and a combo package (basic and advanced courses) is scheduled for 30 May – June 10 2011. Further information is available at www.abcanimaltraining.com or email swood@animaltraining.com.

IAAAM ANNUAL CONFERENCE

The International Association for Aquatic Animal Medicine 42nd annual meeting and conference will take place 7-11 May 2011 in Las Vegas, Nevada. Updates on information about this conference can be found at www.iaaam.org.

PAAZAB CONFERENCE

The African Association of Zoos and Aquaria will be holding their 22nd Conference and Annual General Meeting in Pretoria, South Africa 17-20 May 2011. This event will be hosted by the National Zoological Gardens of South Africa. More information will be posted at www.paazab.com.

ASZK CONFERENCE

The conference of the Australian Society of Zoo Keeping will take place in Gold Coast, Queensland on 20-22 May 2011. This event will take place at the Greenmount Resort. Continue to check www.aszk.org.au/ for updates about this event.

BIAZA ANNUAL CONFERENCE

The 2011 annual conference for the British and Irish Association of Zoos and Aquariums will take place on 9-12 June 2011. This event will be hosted by the Fota Wildlife Park in Cork City. Updates for this conference will be posted on www.biaza.org.uk/.

ISAE ANNUAL CONGRESS

The 45th Annual Congress of the International Society for Applied Ethology (ISAE) will be held at the Hyatt Regency Hotel in downtown Indianapolis, IN on 31 July – 4 August 2011. See the congress website <http://www.ars.usda.gov/meetings/ISAE2011> for more information.

INTERNATIONAL CONFERENCE ON ENVIRONMENTAL ENRICHMENT

The 10th International Conference on Environmental Enrichment is being held in Portland, Oregon on 13-20 August 2011. Updates can be found at www.enrichment.org as information becomes available.

AAZK NATIONAL CONFERENCE

The American Association of Zoo Keepers has updated the information about their upcoming 2011 National Conference held on 24-28 August 2011. The conference will be hosted by the San Diego AAZK and held at the Westin Gaslamp Quarter. More information concerning presentation submissions can be found at www.aazk.org.

AZA ANNUAL CONFERENCE

Zoo Atlanta and the Georgia Aquarium will co-host the Association of Zoos and Aquariums 2011 annual conference 12-17 September 2011. More information can be found at www.aza.org.

EAZA ANNUAL CONFERENCE

The 2011 annual conference of the European Association of Zoos and Aquaria will be take place in Montpellier, France on 20-24 September 2011. Information will be posted at www.eaza.net as it becomes available.

TEWZA WORKSHOP

The 5th Training and Enrichment Workshop for Zoo Animals, presented by Active Environments and The Shape of Enrichment, is taking place at the Oakland Zoo in Oakland, California on 26-30 September 2011. More information can be found at www.enrichment.org/MiniWebs/International/tewza.pdf.

WAZA ANNUAL CONFERENCE

The 66th annual conference for the World Association of Zoos and Aquariums will take place on 2-6 October 2011 in Prague, Czech Republic. Registration information can be found at www.waza.org.

AAZV ANNUAL CONFERENCE

The American Association of Zoo Veterinarians annual conference will take place in Kansas City, Missouri on 23-28 October 2011. More information is available at www.aazv.org.

JOINT EAAM / IMATA REGIONAL WORKSHOP

The European Association for Aquatic Mammals and the International Marine Animal Trainers' Association are hosting a joint animal training and husbandry workshop in the Netherlands at Ouwehands Zoo and Harderwijk Dolfinarium 3-4 November 2011. Please visit www.animaltrainingworkshop.nl for more information

SMM BIENNIAL CONFERENCE

The 19th biennial conference for the Society for Marine Mammalogy will be held at the Tampa Convention Center in Tampa, Florida on 26 November -2 December 2011. Visit www.marinemammalogy.org for more information.

ICZ CONFERENCE

The 4th International Congress on Zoo Keeping conference will be held in Singapore in September 2012. Updates on information for this conference can be found at www.aszk.org.au/.

PHOTOS NEEDED

All IMATA members are invited to submit photographs and/or slides for use in Soundings magazine. Good quality digital images are encouraged, 300 dpi is preferred, width of 12.7 cm (5 inches), minimum 6.35 cm (2.5 inches) wide, no stipulation on height. Please identify the photographer for credit and mail your photos to "IMATA Photo Archivist" as well as "Soundings Chief Editor" at the IMATA Central Office, info@imata.org.

IMATA LIBRARY

Are you looking for an article from a past conference or an old issue of Soundings? IMATA's library is available online to Associate, Active, and Professional members! Go to imata.org and click Publications. Our searchable index is also found there.

CHANGING ADDRESSES, JOB TITLES, OR EMAIL?

Keep your information current on IMATA's website. You have the ability to update your information. It's as easy as 1, 2, and 3.

1. Log onto the member's section of the IMATA website with your username and password.

2. Click on edit profile and update your current information.

3. After updating your information, click on submit at the bottom of the page and recheck the information you just entered.

That's all you have to do. Your changes are immediately entered into the website. If you have any problems, click on feedback, and write your questions in the comment section.

WEBSITE

Visit us online at www.imata.org.

NOTICES & ANNOUNCEMENTS is compiled by Haley Merritt.



Nominations & Elections



BY DAVE ROBERTS,
IMATA PAST PRESIDENT

Candidates for IMATA's Board of Directors 2012!

It is with great pleasure that I introduce the membership to this year's candidates for the IMATA Board of Directors. They have all graciously offered their time and effort to the service of our organization. Once again, these individuals will bring a wealth of experience, professionalism, and enthusiasm to IMATA's Board of Directors positions. As defined in IMATA's bylaws, professional and active members are required to elect three professional members to the Board of Directors. The Board in turn will select officers for the three open slots on the Executive Committee at the conclusion of the next annual meeting in Miami.

The three slots up for consideration are:

★President Elect★

This position is a formal voting member of the Board and Executive Committee; provides input on policy decisions; assists the current president in his or her duties; assumes the office of President the following year and serves as Editorial Director of Soundings and all other IMATA publications. The President establishes the yearly agenda then serves as Past President and the Chairperson of Nominations and Elections Committee in the third year.

★Third Vice President★

This position is a formal voting member of the Board and Executive Committee; gives input on policy decisions; assists the 2nd and 1st Vice Presidents in planning and organizing the annual IMATA conference with help of the Conference Committee; succeeds to Second Vice President the following year while continuing to assist with conferences and planning; then succeeds to First Vice President the third year and is responsible for all conference planning activities.

★TREASURER★

This position is a formal voting member of the Board and Executive Committee; provides input on policy decisions; records, maintains and distributes, to all board members, minutes of meetings such as mid-year, annual and any interim meetings/discussions as requested by the president; maintains membership data (assisted by the Membership Committee and the website administrator); is involved in the agenda planning for both the mid-year and annual board meetings; serves as Director at Large in the third and final year of term as a voting officer and advisor to the incoming Treasurer.

The candidates are being presented in terms of the responsibilities they each aspire to on the Executive Committee. After being elected to the Board by IMATA's voting membership, each term runs for three consecutive years. So please, do your part and take a moment to vote.

**Voting is being conducted ONLINE. Please vote NOW at www.imata.org.
VOTING CLOSSES ON 30 JUNE 2011.**

The Nominations and Elections Committee is proud to present the following candidates for your consideration:

CANDIDATE FOR President



President NOMINEE

Nominee: Eric Gaglione Affiliation: Georgia Aquarium

Eric started his career in 1984 as a sea lion and dolphin trainer at the Aquarium of Niagara Falls while also earning degrees in Zoology and Wildlife Management at the State University of New York's Empire State College. While at the Aquarium of Niagara Falls, Eric developed his skills in animal training, husbandry, and public presentations. He assumed the role of Curator of Marine Mammals in 1990 and spent five years overseeing the aquarium's animal training and behavioral enrichment programs. In 1995 he joined the Mystic Aquarium as Curator of Marine Mammals & Birds. While at Mystic he gained valuable experience with a variety of marine mammals and birds including bottlenose dolphins, beluga whales, California sea lions, Steller sea lions, Northern fur seals, harbor seals, grey seals, Pacific walrus and African penguins. He was also responsible for the on-site animal care of Mystic's stranded marine mammal

program and assisted the rehabilitation of numerous whale, dolphin, and seal species. In 2005, Eric joined the Georgia Aquarium where he assisted the start-up of the facility. While in Georgia, Eric has continued to work with marine animals of a wide array of species including Asian small clawed and sea otters, as well as whale sharks. As Curator / Zoological Operations Eric is responsible for three aquarium galleries which include Georgia's marine mammal collection as well as several fish and invertebrate species. Eric has been a member of IMATA since 1985, has attended numerous annual conferences, presented several formal and poster presentations, and has assisted the ATAC, LIP and Conference Committees. He served as IMATA Vice President 2008-2010 and organized the annual conference in Boston. He is dedicated and passionate about the marine animal training field and would be honored to serve IMATA as President Elect.

CANDIDATE FOR Vice President



VICE PRESIDENT Nominee

Nominee: Mike Pool Affiliation: SeaWorld San Antonio

Mike began his animal training career 10 years ago at SeaWorld San Antonio, having worked there in various capacities, beginning in the Animal Care Department, serving in the Education & Conservation Department and then the Animal Training Department, where he now serves as a senior animal trainer. He began at Shamu Stadium, moved to the Whale and Dolphin Stadium where he worked in the Viva! show, worked for several years with the beluga and sea lion interaction programs, and currently trains and performs in the sea lion, walrus, and otter show. He has been fortunate to work with many species over the years, including Pacific white-sided dolphins, beluga whales, Hawaiian monk seals, California sea lions, Asian small-clawed otters, Pacific walrus, and various bird species. He has had the opportunity to work with and visit numerous zoological facilities around the country and abroad. In addition to training animals and mentoring staff, he took on various projects on behalf of the company, such as lecturing at Texas State University on behavior modification and its application at SeaWorld and organizing a trainer exchange and education program between SeaWorld San Antonio and the Specialized Search Dog (SSD) military dog

training squadron headquartered at Lackland Air Force Base in San Antonio. He utilized his fluency in Spanish as a spokesman for SeaWorld San Antonio on various Spanish media events, and has written and presented multiple training seminars for staff development in the Animal Training department. Mike's involvement with IMATA began several years ago, and has grown over the years. He has authored and presented work at the national conference and various regional workshops and currently serves as the chair of the Honors & Awards committee (a position he has held since late 2008). Mike organized and hosted a regional conference at SeaWorld San Antonio in 2008 that was attended by more than 70 zoological personnel from around the country, and has been a consultant for various regional conferences since. He created and is one of the administrators of IMATA's Facebook page, and has served on multiple committees in various capacities. He looks forward to the potential opportunity to serve IMATA as Vice President and give the membership a conference that will continue IMATA's tradition of excellence in zoological education and conservation.

CANDIDATE FOR Secretary



SECRETARY NOMINEE

Nominee: Jennifer Leach Affiliation: SeaWorld San Diego

Jennifer has been an IMATA member since 2001 after a spring at DolphinQuest Hawaii caused her to happily turn down veterinary school to pursue her dream of marine mammal training. Until then, she didn't think being a trainer was a job a shy snowboarder from Colorado could actually get! She graduated from the University of Colorado at Boulder with a degree in Biology, and immediately after graduation began working at Mote Marine Laboratory in Sarasota, FL with an amazing team who fostered her love for IMATA and became lifelong friends. There Jeni worked with the only two operantly conditioned manatees in the world, doing husbandry and behavioral research including many projects which have gone on to win multiple awards at IMATA conferences over the years as well as be published in several peer-reviewed journals. In 2005 Jeni moved to Northern California to work at Six Flags Discovery Kingdom and was promoted to Senior I in their killer whale and dolphin program. There she helped train new generations of trainers as well as found her passion for teaching others. Jeni continued her development with show and water work training and saw the immense possibilities within this field, the foundation of which is communication between facilities and trainers for the betterment of the animals in our care. Jeni began writing presentations for

IMATA, consolidated the records at the Killer Whale Stadium and saw the importance of sharing the knowledge we all have gained to be the best trainers and animal care experts possible, as our animals deserve no less! In 2009 Jeni made a big leap to SeaWorld San Diego where she currently works at the Dolphin Interaction area and feels like she has found her 'home'! She loves seeing the animals' progress and is able to both learn from others and teach from her experience. She is so grateful to be supported to run for Secretary and would be privileged to give back to an organization that has had such an immense impact on her life. Over the years she has gone from the quiet trainer in the back of the room at the 2001 Orlando conference, overwhelmed by all the talent present, to now being able to call some of those people her closest friends. She has gotten up the nerve to write, present, mediate and has been assisting with the Raffle and Auction for the last three years, and has been on the Sponsorship as well as Research and Conservation Committee for the last two years. She is excited and passionate about giving back and helping further IMATA's development and also helping others learn as she did. She would be honored to run as your Secretary.

TRAINER'S FORUM

QUESTION:

What is your stance on correcting superstitious behaviors at your location?

ANSWER 1 We use a proactive approach to superstitious behaviors and are very careful to avoid shaping them in the first place. Before training a behavior, we discuss it and decide on the criteria. Once we've done this, we then create a step-by-step training plan. Most of the time, we can recognize a superstitious behavior in the early stages of training. Through careful placement of our reinforcement and precise bridging, we can communicate to the animal that the superstitious behavior is not part of the criteria. On occasion, a superstitious behavior can add a unique flair to a behavior and create a special little trade mark for that particular animal. In this case, we may choose to incorporate the "superstitious" behavior into the overall criteria. By incorporating certain superstitious behaviors, everyone wins. Our shows or encounters have a distinct behavior and the trainers demonstrate flexibility by working with an animal's unique individuality.

**Dolphin Quest Oahu
Training Staff**

ANSWER 2 Here at Wild Seas, like any other training challenge that presents itself, we try and take a rounded approach to this issue. The superstitious behaviors we see often manifest when an animal is anticipating an SD, or actually performing a behavior which has been inadvertently chained or otherwise reinforced in the past. We take a proactive stance on this issue; looking for slight precursors during training sessions and setting the next session up to either avoid or extinguish any precursors (to unsolicited behaviours!) that we may see. This can include delivering SDs in a random order, varying reinforcement schedules, or working in unusual positions and areas. There is also an occasional need to be reactive i.e. try and correct a superstitious behaviour mid-session. Often, this simply means setting the animal up in the same scenario in which the animal offered the superstitious behaviour and looking for ways to reduce expectations or otherwise make it easier for the animal to understand what we want.

It's always best to set an animal up to succeed as this will ultimately keep training positive and reduce frustration. However, if the need arises, we will also occasionally be firm with the animal (firm voice, eye contact, LRS, T/O, etc), especially if it is a well-established behaviour which is deteriorating. In our experience, the more attentive the animals are, they are less likely to try and offer behaviours on 'autopilot' simply to gain reinforcement. Paying close attention to our own body language may also play a role in resolving these issues. To ensure consistency, all of our SDs are standardised. We have an SD list with descriptions and pictures for

reference, as well as plenty of constructive criticism after training sessions. Having a well rounded, holistic, and variable approach to our program helps keep the animals perky and inquisitive and gives us plenty of opportunities to reinforce high attention levels during almost every session we do. To quote a friend of mine, as long as we are 'consistently inconsistent' we'll keep those interest levels high, get good energy in our sessions, and have happier and healthier animals!

**Kenny Murray
Wild Seas
Melbourne Zoo**

ANSWER 3 That is an excellent question! At Dolphin Discovery, we consider superstitious behaviors to be like a virus. A virus is something you can catch very quickly without even noticing it and, if not treated properly, it can spread in a matter of seconds. Like a virus, if a trainer doesn't pay attention to behavior or bridges inappropriately, superstitious behavior can appear quickly and without warning. However, not all superstitious behaviors are undesirable. On occasion they may actually enrich the behavior by making them more attractive, and may become part of the new behavioral criteria.

Although some superstitious behavior is acceptable, we do encounter situations where superstitious behavior may need to be extinguished. Depending on the behavior to be extinguished here are a few of our favorite options. Differential reinforcement is a good technique that can be applied to extinguish behavior, for example, eliciting DRI as a physically incompatible behavior against the undesirable one. Another option may be to retrain a behavior, training it step by step with a different scenario as well as a new SD so that the subject will not associate the new behavior with the superstitious one. Another alternative is to accept the new behavior and put it under stimulus control. The behavior can either have completely new criteria, or better yet, place both behaviors-the old one and the new one with the superstitious behavior-under different SDs allowing for two separate behaviors.

Remember that prevention is the key to success in most behavioral situations. Properly training your staff in applying all the operant conditioning tools and being objective with your criteria will allow you to avoid these types of behaviors from appearing in the first place. Good luck and happy training!

**Animal Care and Training Team
Grupo Dolphin Discovery**

ANSWER 4 In order to prevent and correct superstitious behaviors, our facility focuses on the following procedures.

Observation: Reinforcement should come at the best timing to make sure the trainer is reinforcing only the desired behavior. For this we use the bridge to indicate the animal it has done well. If following a bridge one of our killer whales decides to chase another whale around, even for a few seconds, or hangs for a while at the bottom of the pool instead of coming straight back to the platform, it will not get directly reinforced and an LRS (Least Reinforcing Scenario) will be applied. Why? Simply because the delivery of reinforcement at this point does not match with the behavior previously bridged. What the trainer may reinforce is an aggression display or a slow response to the bridge. In both cases an undesired behavior that is likely to happen again or get worse if reinforced. That means that following a bridge we keep an eye on the animal until it is back to station to make sure the reinforcement is given for the correct (bridged) behavior. This is why, in order to minimize the risk of accidentally reinforcing something wrong, we are constantly aware of our surroundings and we clearly communicate with each other. During all kinds of sessions, trainers will help each other by indicating if any change or undesired behavior occurs by the animals that one would have missed. We will also make sure that the animals are not displaying any undesired behavior before starting any session which would, of course, be reinforcing to them. Observation is crucial to set everybody up for success and to avoid superstitious behavior.

Communication: Clear open communication and appropriate responses help us considerably to cope with superstitious behaviors. Sincerity and consistency amongst trainers are very important and we always strive to keep everybody on the same page. This tends to create a trustful environment where notes, remarks and talks are here to help. When working with animals, trainers sometimes (if not often) let their human feelings and emotions take the lead of their actions and decisions. We want our animals to succeed not only for themselves, but also for us and our own comfort. It is a hard thing to do but, at our facility, we always try to keep in mind that our actions, cheering and clapping for example, are supposed to stimulate and reinforce the animals, not ourselves. Trainers can also easily fall into habits, creating patterns and situations where they feel safe and secure, just because they have been reinforced by animals responding well to it on one or more occasions. This can develop another problem, trainer's discrimination. Again, at the Orca Ocean stadium it is very important for everybody to be on the same page. To do so, we keep our daily interactions challenging, motivating and stimulating for both animals and trainers. Most importantly we talk about any differences or changes observed in animals or trainers behaviors during our sessions. This often leads to passionate discussions!

Criteria: All trainers at Orca Ocean know all behavioral criteria. It is essential for us that all team-members work and interact with the animals in a similar way. A difference, for example, in the delivery of a SD or bridge can confuse the animal and lead to frustration and further on to aggression. As said above a trainer clapping his/her hands before sending a back dive or jumping around while asking for a front flip is technically not giving the proper SD and animals are much more sensitive to these details than we may think. Therefore we try to maintain the criteria of each behavior at its best by starting with the proper SD, before giving the proper bridge and finally the appropriate reinforcement. If we come to agree that an animal is enthusiastically responding to a stimulus added to the original SD we

might decide to use it as long as it is kept in a good balance. The criteria of the behavior should remain the same, whether that behavior was asked with or without the extra stimulus. We will also have this variation applied by all trainers working with the concerned animal.

We keep reminding ourselves that our animals do know their repertoire of behaviors and the consequences that follow. Once we accept this, there is not much need for extra stimulation, we just ask a behavior with the animal responding correctly or not.

Knowledge: We know our animals, the social structure of the group, what they like and dislike, their history, etc. We know that what may be reinforcing for one subject may be adverse for another. Knowing our animals well allows us to better understand their needs and better plan and manage our daily interactions with them. We also try as much as possible to look at the facts and leave the speculations aside. Was the behavior of good criteria? Did the animal respond well? We surely do the best we can to set our animals for success but we leave them with the choice to respond correctly or not. With this approach in mind, we believe that there are less opportunities for superstitious behaviors to arise.

**Julien Forestier
Orca Ocean Stadium
Loro Parque**

TRAINER'S FORUM is compiled by **Robert Roozendaal**.

ATLANTIC/PACIFIC
atlanticiapacificusa.com
Providing high quality fish & seafood for animal nutrition since 1991.

Always Competitively Priced
Always from Sustainable Stocks
Always Guaranteed for Quality

ACCREDITED BY THE ASSOCIATION OF ZOOS & AQUARIUMS & MEMBER OF IMATA
On-staff Marine Biologist and Food Scientist
Phone: (401) 294-9570 Fax: (401) 294-9005
atpnc@earthlink.net
Animal Nutrition is our ONLY business!

What's Up Doc?

W/ Carmen MH Colitz, DVM, PhD, DACVO
Aquatic Animal Eye Care, LLC
Animal HealthQuest Solutions, LLC
Adjunct Associate Professor, Ohio State University and North Carolina State University Colleges of Veterinary Medicine; Courtesy Faculty Appointment, Aquatic Animal Health University of Florida College of Veterinary Medicine

“Dr. Colitz, what should trainers look for when examining dolphins’ eyes for abnormalities?”

Ophthalmologic (eye) problems can occur in any aged dolphins. Since beginning my work with these beautiful animals, I have seen a variety of problems and many are from rough play.

The most common problems affect the cornea. The cornea is the outer clear covering of the eye and it is continuous with the sclera, or the white part of the eye. Covering the sclera is the conjunctiva. The conjunctiva is a thin membrane that often reacts non-specifically to diseases of the cornea, eyelids, and even the inner parts of the eye. The reaction is typically an increased red color, and sometimes it looks puffy or swollen. Normally, the cornea is clear because it is relatively dehydrated, it has no blood vessels, and it has no pigmentation or other opacities (Figure 1).

Often, the first hint of a problem is that the affected eye is held shut. Most do not want to open the eye due to pain so the trainers and veterinarians cannot see what has happened. When I first started working with dolphins, I was told that no treatment is necessary and the eye will eventually open and be able to see. Many of the animals I worked with initially did just that. However, many more opened their eyes with big scars, likely due to infections that progressed to cause perforation of the corneas. This is a very painful event and I now suggest treatment with oral medications can help control the infection and pain, and make the outcome less severe.

Any time a trainer observes an animal's eye becomes squinty; I urge them to please tell their facility veterinarian, curator, or medical director so

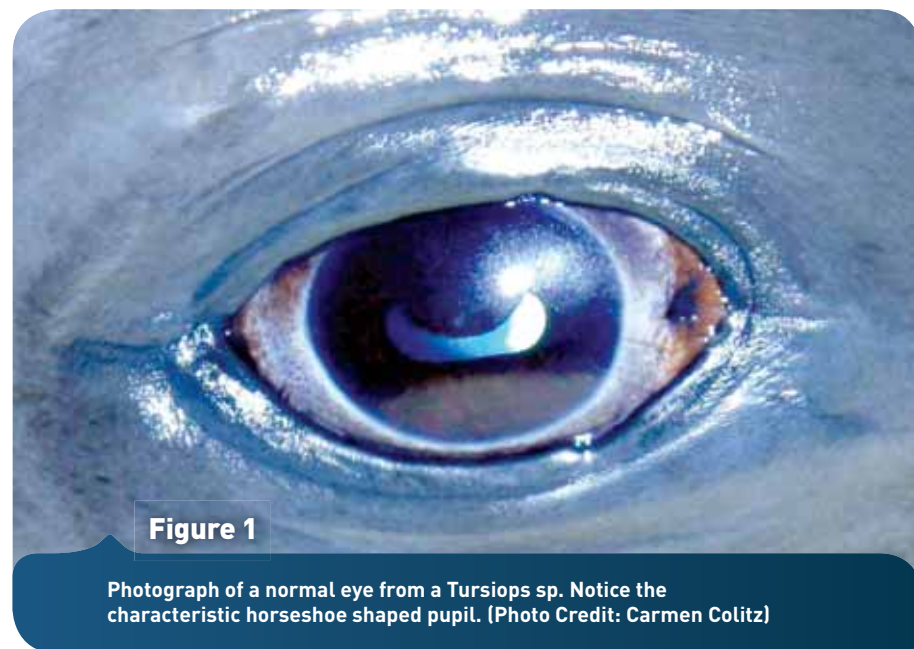


Figure 1

Photograph of a normal eye from a *Tursiops* sp. Notice the characteristic horseshoe shaped pupil. (Photo Credit: Carmen Colitz)

that it can be addressed quickly. And, so they can take photographs of the eye and I am happy to evaluate these images. These animals can be known for their rough play and easily traumatized eyes. Squinty eyes can be associated with pain and is typically a sign of infection in the eye.

Nutritional supplements can also protect our animals and trainers from the damaging effects of UV. The two that I have found to be most important are grape seed extract and lutein. Research from my laboratory at Ohio State University found that grape seed extract protects lens cells from the damaging effects of UV. Other research has shown the same to be true in skin. Lutein is a carotenoid found in spinach, marigolds, and egg yolks. It accumulates in the retina, the lens, and other eye structures, as well

as the skin. It has anti-inflammatory properties and protects against oxidative stress. The amount of lutein often found in common multi-vitamins is so low that it is not enough to even dose a mouse! High amounts of grape seed extract and lutein, in addition to omega-3-fatty acids, coenzyme Q10, and other nutrients will help us along with our animal friends to fight the daily bombardment of oxidative stress on the eyes. A

new product called Eye-SEA is now available with these and other safe and naturally occurring antioxidants for marine mammals. This is given with their multivitamin regimen and will complement their diets!

WHAT'S UP DOC? is compiled by Jen DeGroot.



Off The Shelf

HOPE FOR ANIMALS AND THEIR FUTURE

By Jane Goodall

Reviewed by John Widick

Negative forecasts for the environment and the survival of endangered species abound in recent global news and nature documentaries. Under these circumstances, it's understandable that conservationists would sound a call to arms, but one must wonder if too much bad news could take a toll on the morale of nature lovers. Too much doom and gloom and the public might just develop a sense of helplessness. One has to wonder if an injection of hope is necessary to keep the fight alive, allowing us to successfully pass the torch onto the next generation of wildlife advocates, and hope is just what Jane Goodall provides in her newest book.

In *Hope for Animals and Their World*, Goodall takes up the challenge of preventing this dangerous mindset by illustrating how twenty nine examples of animals which were desperately close to extinction, have since recovered. She does so along with six stories contributed by Thane Maynard, who's Cincinnati Zoo and Botanical Garden was recognized as the greenest zoo in America due to its assortment of in-house solar and wind power. *Hope for Animals and Their World* also serves as a source of inspiration for those of us who deeply value wildlife, demonstrating that with hard work and tenacity, great successes can be achieved for specific species, even in cases where species that were completely extinct in the wild when captive breeding began.

One of the greatest attributes of this book, in my opinion, is that it serves well as both light reading and as a starting point for genuine research about

husbandry and behavior. The text also provides much to think about for animal trainers. Among the more interesting stories in the book from a trainer's point of view involve two bird species, partly because the techniques used contradict each other. The whooping crane (*Grus americana*) in the U.S.A and the northern bald Ibis (*Geronticus eremita*) from Europe are both migratory species, which posed a unique difficulty for the breeders that hoped to release them. In both cases, ultra-light aircraft were used to teach the birds the migration routes, much as in the film *Fly Away Home* (1996, Columbia Pictures Corporation). In Maryland, the crane breeders donned cumbersome crane costumes with sophisticated mechanical beaks for feeding hatchlings, in the hopes that they would not imprint on humans. By contrast in Austria, breeders of the Ibis, which had been extinct in Europe for over 300 years, took no such measures. They interacted with their birds freely with no disguise. In both cases, migration routes were successfully taught with no cases reported of the Ibis interacting with humans in an unusual fashion. You might wonder if this renders the elaborate costuming unnecessary, until you read about Tex, a female crane who wouldn't mate until a costumed breeder completed the mating dance with her. She produced eggs for a human when she wouldn't for other cranes, and now her progeny still survives in the wild!

While the book provides plenty of detail on how the remnants of a decimated species were collected, coaxed to breed, and helped to survive the hardships of reintroduction, there is one key message that Jane Goodall and her contributors convey. Saving endangered species is not only possible, but it is possible at the eleventh hour. Hoping beyond hope has never been more worthwhile.

OFF THE SHELF is compiled by Michael Belshaw.



IMATA

International Marine Animal
Trainers' Association

1200 S. Lake Shore Drive
Chicago, Illinois 60605 USA



**PRE-REGISTER
NOW!!!**



The next IMATA Conference will be held in beautiful South Beach in Miami, Florida! We have a LOT of new and exciting things planned this year, check out the Conference Countdown article on page 6 to learn all the exciting details and to help plan your trip! Be sure to take advantage of pre-registration to enjoy the best savings. Also, if you are not a member but have been considering joining, now is the perfect time. Member conference rates offer additional savings and in some cases even pay for the cost of membership.

CONFERENCE REGISTRATION RATES

| TYPE | PRE-REGISTRATION (UNTIL 1 AUGUST 2011) | REGISTRATION (AFTER 1 AUGUST 2011) |
|------------------------|---|---------------------------------------|
| Full week – Member | \$325 | \$400 |
| Full week – Non member | \$400 | \$475 |
| Daily – Member | \$100 | \$125 |
| Daily – Non member | \$125 | \$150 |

For Conference Details and to Pre-Register, Please Visit miami2011.imata.org