

Spyhopper

ACS NEWSLETTER

SEPTEMBER 2018



LETTER FROM THE PRESIDENT CONFERENCE WHALING ISSUES ANTARCTIC TRIP OH MY...

Dear ACS Members,

With both a bit of nervousness and excitement, we are counting down the days to our upcoming ACS Conference in Newport Beach, California on November 2-4. Needless to say, we're hard at work on the final details to make this a wonderful memorable event. Remember, you can still register, acsonline.org/2018-conference.

As if that is not enough, as of this writing, ACS National Board Member, Sabena Siddiqui is attending the 67th Meeting

WHAT'S INSIDE

- 1** LETTER FROM THE PRESIDENT
- 3** 16TH INTERNATIONAL CONFERENCE
- 7** ANTARCTIC EXPEDITION
- 9** ACS CHAPTER REPORTS
- 21** HOW TO LUNGE FEED



KATLYN TAYLOR, DISCOVERY WHALE WATCH

Feeding frenzy with humpback whales, California sea lions and seabirds on Monterey Bay.

Letter cont.

of the International Whaling Committee (IWC) in Florianópolis, Brazil. There is a lot at stake this year as Japan wants to resume commercial whaling. Other issues like Aboriginal Subsistence Whaling and the South Atlantic Whale Sanctuary are also on the agenda. You can follow Sabena's excellent blog at iwcobserver.org and via our ACS social media platforms Facebook, Instagram and Twitter.

And don't forget our amazing Antarctic Peninsula trip in February 2019, in partnership with Cheesemans' Ecology Safaris, cheesemans.com/trips/antarctic-peninsula-feb2019. There are still openings for this once in a lifetime experience.

All of our ACS Chapters have again resumed their monthly meetings and outreach programs. As usual, you can read more about our chapters in this issue.

As you can see, we have our hands full. Please join us, or better yet, get involved.

A whale-sized thank you for your continued support and shared passion for cetaceans!

Uko Gorter, President

ACS NATIONAL BOARD OF DIRECTORS

Uko Gorter, President
Diane Glim, Secretary
Joy Primrose, Treasurer
Raphael Fennimore
Sabena Siddiqui, Student Coalition
Jayne Vanderhagen
Bob Wilson

Read more about our
Chapters and Board Members
at acsonline.org



STAFFBOX

EDITORIAL POD

Diane Glim
Raphael Fennimore
Uko Gorter, Illustrations
Rose Freidin, Graphic Designer

ON THE COVER

From Top to Bottom:
Breaching Southern Resident killer whale J32 "Rhapsody" with family by James Maya. Killer whale sighting from ACS San Diego's trip to Anacortes, Washington. A humpback whale flukes in the Santa Barbara Channel by Gregg Gentry.

WHALES & US

THE NEXT GENERATION



AMERICAN CETACEAN SOCIETY

16th International Conference

Newport Beach, California – November 2-4, 2018

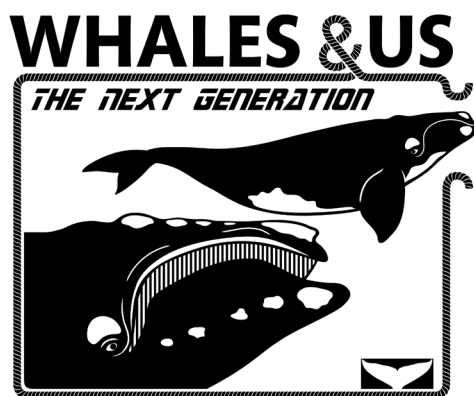
Hyatt Regency Newport Beach

WHALE WATCHING • WHALE ART • BOOK SIGNINGS • PHOTOGRAPHY CONTEST

SILENT AUCTION • POSTER PRESENTATIONS • WHALE FILM SCREENING

Special room rates are reserved for Conference participants at the Hyatt Regency Newport Beach.

RESERVATION book.passkey.com/go/AMCE18



PROGRAM SCHEDULE AT A GLANCE

MAY BE SUBJECT TO CHANGE

RESERVATIONS

book.passkey.com/go/AMCE18

FRIDAY, NOVEMBER 2

Whale Watch

8am-4pm

Whale Watch Trip with Davey's Locker. Transportation to and from the hotel and a boxed lunch is included.

Registration

5:30-6:30pm

Check-in or register for the conference, and receive goodies!

Welcome Reception

6:30-7pm

Reception and welcoming words.

7-7:20pm

Heirs To Our Oceans
Inspiring next generation leaders in marine conservation!

7:20-7:30pm

Aeon for Ocean

7:30-7:40pm

Sena Wazer

7:40-8pm

ACS student coalition leaders:
The Next Generation

8-9pm

Reception continues with a special musical guest performance by The Kinematics, featuring cetologists: John Calambokidis, Ari Friedlaender, Jeremy Goldbogen, and Brandon Southall.

SATURDAY, NOVEMBER 3

Registration Open

7am

Check-in or register for the day

Welcoming Remarks

8:45-9am

Uko Gorter, ACS National President

SESSION 1

9-9:25am

Ari Friedlaender
Better late than never: using recent advances in our understanding of baleen whales around the Antarctic Peninsula to aid in conservation and management efforts

9:25-9:50am

Ted Cheeseman
Sharing the Science: What 2500 Whale Watchers are doing for Research

9:50-10:15am

Kate Stafford
Listening in the dark to the winter songs of bowhead whales

10:15-10:45am

Morning Break
Refreshments, Poster Viewing, Exhibitors

SESSION 2

10:45-11:10am

Joy Reidenberg
Cetaceans Use Air To Boldly Go Where No Mammal Has Gone Before

11:10-11:35am

Jeremy Goldbogen
Whale TV: the development of whale-borne camera tags and how they change our understanding of whale biology

11:35-12pm

Dara Orbach
Tinder for cetaceans: Swerve left or right to select mates

12pm

Lunch

SESSION 3

1-1:25pm

Marc Webber
New Habitat for Humpback Whales: Foraging for Fish in San Francisco Bay

1:25-1:50pm

John Calambokidis
Threats to whales from ship strikes and entanglements

1:50-2:15pm

Giuseppe Notarbartolo di Sciarra
Important Marine Mammal Areas (IMMAs): as close as we can get to enable marine mammals to tell us where they want to be left in peace

2:15-2:45pm

Afternoon Break
Refreshments, Poster Viewing, Exhibitors

SPECIAL SESSION CETACEANS ON THE EDGE OF FOREVER PANEL DISCUSSION

2:45-4:30pm

Moderator:
Bernd Würsig

Panelists:

Brooke Bessenes
Shane Gero
Thomas Jefferson
Giuseppe Notarbartolo di Sciarra
Chris Parsons
Zak Smith

4:30-5:30pm

Poster Session

4:30-6pm

Photography Contest, Book Signing, Silent Auction

7pm

Banquet

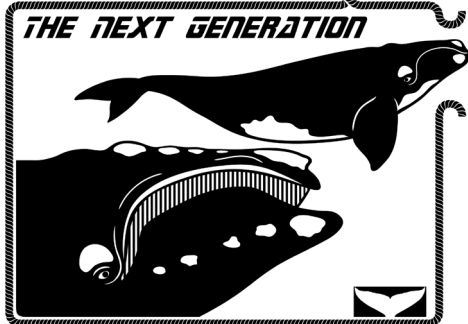
8pm

JOHN HEYNING AWARD PRESENTATION

KEYNOTE SPEAKER: Bernd Würsig
Whales, Dolphins, and Us: From Generation to Generation
sub-title: "shoulders"

WHALES & US

THE NEXT GENERATION



PROGRAM SCHEDULE

AT A GLANCE

MAY BE SUBJECT TO CHANGE

RESERVATIONS

book.passkey.com/go/AMCE18

SUNDAY, NOVEMBER 4

Registration Open

7am

Check-in or register for the day

Students Meet the Scientists

8am

A unique opportunity for students to ask scientists questions and gain advice about research and careers.

Opening Remarks and Awards

9-9:30am

Announcements and Student Poster and Photography Contest Award Winners announced.

SESSION 1

9:30-9:55am

Denise Herzing

Dolphins, displacements, and data collection during a changing climate

9:55-10:20am

Janet Mann

Matrilineal influence on cetacean culture

10:20-11am

Morning Break

Refreshments, Poster Viewing, Exhibitors

11-11:25am

Shane Gero

The Lost Cultures of Whales

11:30am

Lunch

Documentary Movie

1-3pm

Documentary movie screening followed by Q & A

3-3:30pm

Afternoon Break

Refreshments

Session 2

ACS and Beyond!

3:30-4pm

Alisa Schulman-Janiger

ACS/LA Gray Whale Census and Behavior Project: 35 Years of Citizen Science

4-4:30pm

Sabena Siddiqui

ACS behind the scenes of the IWC Meeting in Brazil

Conference Wrap-Up

4:30-5pm

Conference Discussion and Closing Remarks

HELP US MAKE A DIFFERENCE

We hold a silent auction at each conference, offering unique marine life items and other cool stuff for bid. You can help make a difference by donating items to be auctioned off. Think about what you would buy at a whale auction! Keep in mind that the conference is held in Southern California, but many of our conference attendees (our bidders) travel a long way to get there so try to resist locally redeemable items.

Your donation will be displayed prominently during the Silent Auction of this international conference. The auction will be open just before the banquet, where a world-renowned whale biologist will present.

TO MAKE ARRANGEMENTS CONTACT

Shari Bookstaff, Silent Auction Coordinator

sbookstaff@gmail.com

NEW ITEMS WE ARE LOOKING FOR

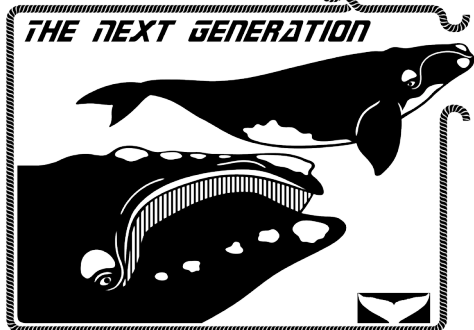
- Marine Life Clothing/Jewelry/Artwork
- Movie Passes (chain)
- Wine
- Glasses

- Wind Chimes
- Whale Watching Tickets
- Garden Decor
- Candles
- Stuffed Animals/Toys

- Sports Memorabilia
- Exotic Vacation
- Food Delicacies
- Chocolates
- Gift Certificates

WHALES & US

THE NEXT GENERATION



AMERICAN CETACEAN SOCIETY

16th International Conference

Newport Beach, California - November 2-4, 2018
Hyatt Regency Newport Beach

American Cetacean Society

Whales & Us: The Next Generation

Photo Contest Entry Form

Step 1 - Submit your entries and pay your entry fees before October 19 at

<https://www.acsonline.org/2018-conference>

Step 2 - Fill out a separate form for each entry. Step 3 - Attach a completed Entry form to the back of each photo prior to delivery at the Conference.

Thank you for your entry(ies) in the American Cetacean Society's 16th International Conference Photo Contest. Please fill out a separate entry Form for each photograph. If you have questions or need assistance, contact Jodi Frediani at jodifredi@aol.com. Good luck!

Please fill out a separate entry form for each photograph. Attach one form to back of each photo.

Select a photo category: ☐ Mysticetes ☐ Odontocetes ☐ Other Marine Life

Photographer's Name: _____

Mailing Address: _____

Phone: _____ Email: _____

Photo Taken On (Date): ____/____/____ Location Taken: _____

Please provide caption for the photo (one or two brief sentences to describe the scene/circumstances):

Please read Declaration and Sign:

I declare that I am the copyright holder of the photograph described here and submitted for entry in the American Cetacean Society (ACS) 16th International Conference Photo Contest. I declare that if I am not the copyright holder for this image, I have permission from the copyright holder to enter the photo in this contest. I understand that if this photo is chosen as a contest winner or is recognized for Honorable Mention, I grant the American Cetacean Society the right to use the photo (credited clearly to the photographer) on the ACS website and in the ACS publications and materials without receiving further compensation.

Signature: _____

Date: ____/____/____

If this photo does not win or receive honorable mention in this contest, would you like to give ACS permission to use the photo (credited clearly to the photographer) on its web site and in its publications, materials?

☐ Yes ☐ No

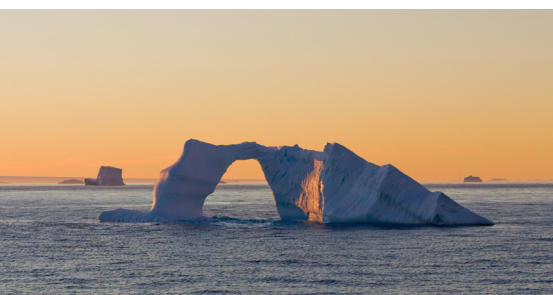
Would you like to donate the photo print to ACS? ☐ Yes ☐ No



ANTARCTIC PENINSULA WHALES AND LANDSCAPES EXPEDITION

FEBRUARY 16-MARCH 5, 2019

JOIN MARINE SCIENTISTS, POLAR SPECIALISTS
AND NATIONAL GEOGRAPHIC PHOTOGRAPHERS
ON THIS SPECIAL EXPEDITION



Landscape photography, time with Humpbacks, Antarctic Minke Whales, Orcas and visits to huge penguin colonies will surpass your wildest expectations. Our priority on this unique expedition is provide you the most time ashore and Zodiac cruising along with a special scientific component and opportunities to engage in citizen science.

HIGHLIGHTS

- Fly over the Drake Passage, with stunning views from above, saving two days of ship travel
- Get up-close and personal with Humpback Whales as they “spy-hop” out of the water to get a better glimpse of you!
- Be a part of the scientific research the marine scientists are conducting throughout the voyage via citizen science opportunities
- Experience beautiful sunrises and sunsets backlighting stunning landscapes
- With fewer than 100 participants, everyone can be on shore or Zodiac cruising together
- Our 16 leaders are marine scientists, polar specialists, photographers, and naturalists that will provide lectures, workshops, and guided excursions



SIGNUP TODAY

cheesemans.com • 800.527.5330

Itinerary, ship details and how to signup
cheesemans.com/trips/antarctic-peninsula-feb2019

In partnership with



**JOIN US
FOR THIS SPECIAL
TED CHEESEMAN
LAST EXPEDITION
25 YEARS IN THE MAKING**

ANTARCTIC PENINSULA WHALES AND LANDSCAPES EXPEDITION

FEBRUARY 16-MARCH 5, 2019



EXPEDITION LEADERS FOR MORE INFORMATION ABOUT ALL 16 EXPEDITION LEADERS VISIT
cheesemans.com/trips/antarctic-peninsula-feb2019



TED CHEESEMAN

Full-time Expedition Leader and Organizer, Conservation Biologist and Founder of Happywhale



DR. ASHA DE VOS

Marine Biologist, Ocean Educator and pioneer of Blue Whale research



DR. FRED SHARPE

Board Member and Research Biologist at Alaska Whale Foundation



JOE KAPLAN

Director and Biologist, Common Coast Research and Conservation



RAPHAEL FENNIMORE

National Board Member, American Cetacean Society and Ocean Advocate



DR. PHIL CLAPHAM

Director, Cetacean Assessment and Ecology Program at NOAA's Marine Mammal Laboratory



KATE SPENCER

Whales and Marine Life Guide, Illustrator and Researcher



DR. YULIA IVASHCHENKO

Research Associate, NOAA's Marine Mammal Laboratory



SIGNUP TODAY

cheesemans.com • 800.527.5330

Itinerary, ship details and how to signup
cheesemans.com/trips/antarctic-peninsula-feb2019



**FOCUSED ON WILDLIFE FOR
MORE THAN 35 YEARS**

Our trips emphasize maximum field time, action-packed photography, knowledgeable leaders, small groups, and custom itineraries.



CHAPTERREPORTS



GREGG GENTRY

A majestic blue whale makes a close approach to the Condor Express during the ACS/LA Summertime Blues trip in the Santa Barbara Channel.

Los Angeles

ANNUAL CHAPTER REPORT

Compiled by Kristen Kahl-Reno

A boatful of eager whale lovers boarded the Condor Express with Captains Dave, Tasha and Colton to venture into the Santa Barbara Channel for ACS/LA's annual all-day Summertime Blues whale watch adventure on July 21. We left Santa Barbara Harbor just after 8am in search of the great blue whale with a little overcast skies and calm seas. We first headed south towards the eastern part of Santa Cruz Island and the western part of Anacapa Island where blue and fin whales had been previously reported. It wasn't long before we found two blue whales and had some incredible close encounters

all of which caused many wide-eyed passengers to hold their breath in awe as they took many pictures.

It didn't take long for the sun to come out as we continued onward west as our passengers received another treat when Captain Dave took us into the famous Painted Cave.

We found another blue whale off Santa Rosa Island before we turned around and headed back to the harbor. Other species seen were at least two humpback whales, one mola mola, 250 long-beaked common

dolphins, 50 short-beaked common dolphins, and many sea lions. Pelagic birds included northern fulmar, red-necked phalarope, long-tailed jaeger, pomarine jaeger, and pigeon guillemots. A special thank you goes to the stellar crew of Condor Express and to our very knowledgeable naturalists: marine mammal biologist and ACS/LA board member Christina Tombach-Wright, marine mammal and sea turtle biologist Greg Sanders, and avian biologist, Dave Pereksta, both from the Bureau of Ocean Energy Management.



LOUISA BECK

Top: A blue whale exhales against the backdrop of Santa Cruz Island during the ACS/LA Summertime Blues trip in the Santa Barbara Channel on July 21. Bottom: Jake Kosel points out a humpback whale aboard the Condor Express during the ACS/LA Summertime Blues trip.

Los Angeles cont.

We enjoyed a couple of fantastic presentations at our General Meetings. In June, Pattie VanOver Indictor and Meghan MacLeod spoke about “Finding Your Passion (and Saving the Whales) Through Volunteering.” Turns out that ACS/LA’s Cabrillo Whalewatch naturalist training program had a lot to do with both of them finding their passion, and they have since taken it further by forming La Mer Maids, a group that picks up balloons and other trash on the ocean off Southern California. In August, we welcomed Ted Cheeseman who gave us a third anniversary update of the incredibly successful citizen science website Happywhale in a presentation titled “Sharing the Science: 2000 whale watchers and counting.” Ted also enthralled the audience with stunning photos and a preview of the upcoming Antarctic Peninsula: Whales, Penguins and Landscapes trip.

Another season of our inspiring Cabrillo Whalewatch volunteer naturalist training program in Partnership with the Cabrillo

Marine Aquarium is about to begin. Classes are held every Tuesday evening from October through March, offering an opportunity to interact with a fun group of fellow whale lovers and to learn everything there is to know about



Southern California whales, dolphins, porpoises, seals, and other marine life from experts in the field. After passing a final exam in December, the brand-new naturalists will be ready to narrate voyages on local whale watching trips

and to give preparatory lectures at local schools. Anyone interested in joining is invited to show up at the Cabrillo Marine Aquarium at 7pm on Tuesday, October 2 (it is always the first Tuesday in October) or call 310-548-7770 for more information.

We are also busy preparing for the 36th consecutive season of the ACS/LA Gray Whale Census and Behavior Project, our terrific citizen science project that continues to yield vast amounts of valuable data. Volunteer whale counters man the station on the patio of the Point Vicente Interpretive Center in Rancho Palos Verdes, sunrise to sunset, from December through May. They will once again sit on top of the bluffs and record all migrating gray whales, their calves, their behaviors, and all other marine mammals. The fun and hard work begins on Saturday, December 1; interested whale spotters are encouraged to contact Census Director Alisa Schulman-Janiger at janiger@cox.net ahead of time to arrange a training session and to be added to the schedule.



KATLYN TAYLOR,
DISCOVERY WHALE WATCH

Monterey Bay

CHAPTER REPORT

Compiled by Katlyn Taylor

Summer time is fundraising time for the Monterey Bay Chapter! We suspend our July meeting every year and host an annual get together instead of our normal lecture. Our annual fundraising BBQ was at Indian Village in Pebble Beach on July 7. It was a beautiful day to gather with friends, members and fellow whale enthusiasts to raise money for the chapter and enjoy some great food.

In August we had our second fundraiser of the summer and our monthly meeting. We hosted our annual summer whale watch with Discovery Whale Watch on August 11. The morning started off foggy but we were rewarded for our patience with an incredible trip! As the fog lifted we could see over 30

humpbacks in various feeding frenzies all around us. Some groups were feeding with 20-60 California sea lions and we even had some Dall's porpoise

join in on the feeding for a brief time.

We also hosted our monthly meeting on August 30. Our speaker was John Calambokidis, who gave an update on some of his latest projects with humpback whales and blue whales off the California coast. As usual, it was an excellent talk and very well attended.

Upcoming for September is our monthly meeting on September 27 with a lecture from Ted Cheeseman regarding Happywhale and the upcoming Antarctica expedition that will benefit ACS.



Top: Humpback whale from the ACS Monterey Bay fundraiser on Monterey Bay, August 11, 2018. Bottom: Diane Glim and Katy Castagna celebrating International Save the Vaquita Day on July 17, 2018 in Indian Village, Pebble Beach.

Orange County

CHAPTER REPORT

Compiled by Christine Lundgren

ACS Orange County joined with other organizations on Saturday, July 7, 2018 to recognize the plight of the Vaquita. Our location was in front of Newport Landing Whale Watching in Newport Beach. Our booth had several educational brochures, free "Save the Vaquita" coloring books for kids in both English and Spanish, plus two 20 inch Vaquita Porpoise stuffed animals to catch the attention of those in our vicinity. We shared this information with about 75 adults, with children for a total of about 100 personal contacts. Our efforts were to encourage our booth participants to become knowledgeable about the Vaquita and show their support by signing our Save The Vaquita petition.

In July our guest speaker was Pete Stauffer from Surfrider. He shared the latest information about offshore drilling, seismic blasting, plastics, and other issues that affect whales and dolphins.

In August we participated in a Girl Scout Leader conference at Chapman University. Long time ACS/OC Board member Linna Bernhard participated in this event.

Prior to our August speaker we had a dinner with Josh and many of our members.

Josh McInnes visited our chapter and spoke about the Ecology of the Bigg's Killer whales. He spoke about their presence and specialization on foraging for marine mammals influences their

prey both directly and indirectly. Transient killer whales in comparison to the resident and offshore ecotypes differ in their distribution, occurrence, social patterns, and dietary ecology.

We had a large turnout of guests and chapter members everyone enjoyed his presentation.

For the month of September our scheduled speaker is Mike Schaadt, Director Emeritus, Cabrillo Marine

Aquarium. He will be presenting to our chapter information about the marine protected areas in Southern California. These areas are special places set aside for marine life to grow and reproduce without fishing pressure.



Top: A Northern right whale dolphin (Lissodelphis borealis) jumps out of the Monterey Bay. Bottom: Chelsea Mathieson, Josh McInnes, Mike Bear, Jill Lemon, Marcia Devot, Melissa Hiedbrant, Linna Bernhard, Christine Lundgren, Daryth Morrissey, Patty LaVoie, Laura Lopez and Desi Green.



ACS OREGON NATURALIST ERIK URDAHL



Top: Dr. Bruce Mate and Dr. James Sumich unveiling the sign. Middle: Speakers Charlie Plybon and Kaety Jacobson teach ACS/Oregon the "Whale Wiggle" dance. Bottom: Beautiful cake donated by JC Thriftway in Newport.

Oregon

CHAPTER REPORT

Compiled by Joy Primrose

Along with our regular summer events, Orca Awareness Day, World Oceans Day, International Save the Vaquita Day and Summer Whale Watch Weekend, we held a very special event this year. Our Whale Trail Sign Dedication and Community Celebration were held on Saturday, August 11, 2018. The ACS Oregon Chapter hosted the Orca Tour in 2014 as a kick-off to bring the Whale Trail to Oregon. We partnered with the Oregon Marine Reserves Partnership to get sites in Oregon approved and added. Then began fundraising for an official Whale Trail interpretive sign to be customized and installed at one of the sites. The community was invited to come out and celebrate the unveiling of the sign at Don Davis City Park in Newport. Wonderful

speakers, refreshments, and even the "Whale Wiggle" dance were all part of the fun. Six gray whales spent the day foraging, giving us the opportunity to show visitors some whales!

Our speaker series meetings resume this fall at the Newport Public Library. Ted Cheeseman of Cheeseman's Ecology Safaris and Happywhale will present on September 22nd at 10 am. Dr. Debbie Duffield of Portland State University will present on October 13th at 10 am. Our speaker series meetings are free and open to the public.

Check out our Facebook page at American Cetacean Society Oregon Chapter to keep up to date on our activities.



Above: ACS San Diego trip to Anacortes, Washington. Below: jumping dolphins.

Puget Sound

CHAPTER REPORT

Compiled by Uko Gorter

We are back from our summer hiatus and are starting up our monthly ACS Speaker Series.

NOAA Fisheries biologist and ACS/PS Board Member, Dr. Dawn Noren, will present her timely talk on “Physiological Studies Addressing Southern Resident Killer Whale Risk Factors and Data Gaps”, on September 19. Her talk will primarily focus on the risk factors facing the endangered Southern Resident Killer Whales. Dawn’s research addresses energetics, prey requirement, vessel impact, contaminant transfer to calves, and assessing killer whale body loading.

In October, marine mammal veterinarian and ACS/PS board member, Stephanie Norman DVM MS Ph.D, will present her talk on her research looking at the question if marine mammals carry

antibiotic resistant bacteria from land mammals. A successful crowdfunding effort has made this project possible.

Lastly, we are saying goodbye to our chapter’s secretary Kelsey Moreno, who is pursuing a research opportunity in Israel. Kelsey joined our chapter at the age of 13! It has been a joy and privilege to see her mature in a young marine mammal scientist! Good luck Kelsey!

And yes, you guessed it, we are looking for a new secretary for our chapter. Something for you, perhaps?

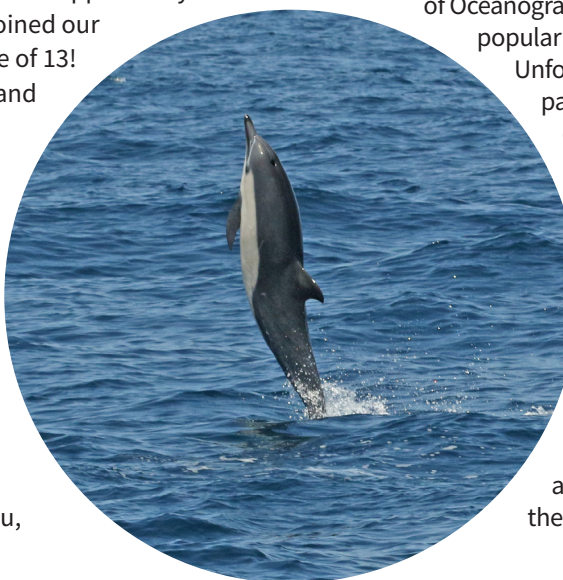
San Diego

CHAPTER REPORT

Compiled by Jayne Vanderhagen

Summer months are fairly quiet for the San Diego Chapter. Sumner Auditorium, where we hold our presentations, is located on the campus of Scripps Institution of Oceanography, above a popular surfing spot.

Unfortunately, street parking at this time of year is nearly impossible, so we do not hold meetings in July or August... however, the board remains active all year planning presentations and activities for the future.



San Diego cont.

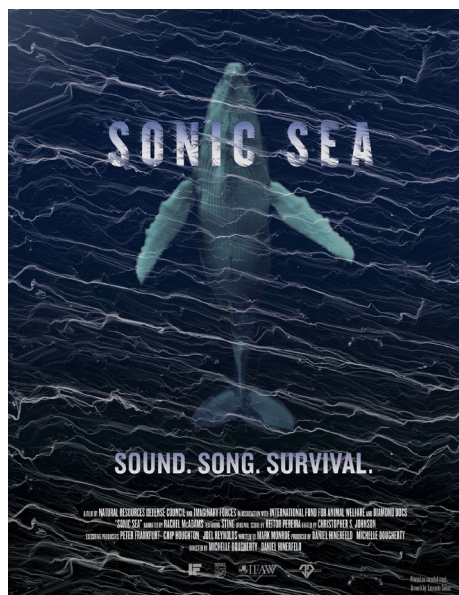
In June we presented a free screening of the award-winning movie *Sonic Sea*. *Sonic Sea* is a 60-minute documentary about the impact of industrial and military ocean noise on whales and other marine life. It tells the story of a former U.S. Navy officer who solved a tragic mystery and changed the way we understand our impact on the ocean. The movie was well received, and the audience participated in Q&A after the completion of the movie.

A quick whale watching trip off the San Diego coast in July with Diane Cullins, visiting National board member Raphael Fennimore and Jayne Vanderhagen kept everyone a bit cooler.

In August we held a special event, and nine members of our local chapter, and one guest, traveled north for two days of whale watching out of La Conner and Anacortes, Washington, led by Sarah Dabydeen. Although chilly, the group had a great time and observed transient orcas and a lunge-feeding minke whale in addition to harbor porpoise, harbor seals, stellar sea lions, bald eagles, all while taking in the beauty of the pacific northwest.

Dolores Keys, Leigh Anne, Gibbons, Sue Emerson, Diane Cullins, Kathy Eure with guest Cheri, Jim Clevenger, Russel and Gale Carlson, and Sarah Dabydeen were the lucky participants on this trip, which is becoming an annual event for us and one which we are considering including other chapters in the future.

The chapter programs begin again on September 12, with guest speaker Erin Glass, Lead Naturalist for Island Adventures



Jim Clevenger from the ACS San Diego trip to Anacortes, Washington. Bottom Left: Film poster of the Sonic Sea movie that ACS/SD showed in June. Bottom Right: ACS National Board member Raphael Fennimore and ACS/SD President Jayne Vanderhagen in San Diego.



San Diego cont.

Whale Watching in Washington. Erin will highlight the differences in operating procedures, viewing regulations, and wildlife sightings between San Diego and the Pacific Northwest's Salish Sea. We will learn about the "Humpback Comeback," what a "Sounder" is, get an update on the endangered Southern Resident killer whales, and more.

SAN DIEGO CHAPTER BOARD MEMBERS

Jayne Vanderhagen, President

George Liddle, Vice President

Ric Matthews, Treasurer

Diane Cullins, Secretary
and immediate past President

Cary Strand, Education and
Community Outreach

Sarah Dabydeen, Speaker Programs

Leigh Ann Gibbons, Special Projects



All photos from the ACS San Diego trip to Anacortes, Washington Top: A killer whale sighting. Left: The Anacortes Group. Middle: A Minke whale sighting. Right: The La Conner Group.



Annual Farallon Islands Whale Watch Adventure in San Francisco.

San Francisco Bay

CHAPTER REPORT

Compiled by Gail Koza

Greetings to all ACS members, donors, volunteers and friends! We hope you've been able to get out onto the water or shoreline this summer to see some of the amazing cetacean activity in San Francisco Bay and beyond.

CURRENT ISSUES

All members of the ACS community are invited to visit our new website Issues page. Here we feature select important and time-sensitive matters affecting cetacean conservation. We summarize each issue and identify actions community members can take to help drive outcomes that will protect and conserve cetaceans and their habitats.

Currently, two issues are featured: "Southern Resident Killer Whales Need Immediate Action"; and "Endangered Species Act Under Threat." Please visit

our page to learn more about these two urgent matters and take action.
acs-sfbay.org/current-issues

JONATHAN STERN RESEARCH GRANT

As we mentioned in the June issue of *Spyhopper*, the San Francisco Bay Chapter established an annual grant to continue Dr. Jonathan Stern's legacy of groundbreaking research focused on minke whales, humpback whales, bottlenose dolphins and harbor porpoises found in the Northeast Pacific Ocean. The first annual Jonathan Stern Research Grant will be awarded in the fourth quarter of 2018. We are grateful to all of those who have already donated toward the 2018 grant! We would appreciate it if the ACS community would please spread the word about this wonderful opportunity



to directly support cetacean research. To learn more about Dr. Stern and to donate to the grant, please visit acs-sfbay.org/jonathan-stern-research-grant.

MONTHLY SPEAKER SERIES

The San Francisco Bay Chapter continues to have great community participation in our Monthly Speaker Series where scientists, photographers and ocean experts offer insights into important topics related to cetaceans and other marine mammals that share cetacean habitats.

Dr. Shawn Johnson, “Not Just Seizing Sea Lions: How Domoic Acid is impacting Southern Sea Otters”

July 31, 2018

Dr. Shawn Johnson is Director of Veterinary Science at The Marine Mammal Center, the nation's leading hospital for marine mammals. The topic of Dr. Johnson's presentation was how domoic acid is impacting Southern sea otters. Domoic acid is a biotoxin produced by harmful marine algae. It can cause acute seizures and long-term brain damage in a variety of marine mammals and humans. In the near shore environment, sea otters feed on a variety of prey types such as crabs that can accumulate high levels of the deadly toxin. The Marine Mammal Center recently rescued and rehabilitated two adult sea otters exhibiting neurological signs attributed to domoic acid intoxication. These are the first otters known to be diagnosed and treated for this disease. This fascinating and informative talk detailed the otter's rescue, rehabilitation, and new post-release monitoring technology which allows us to better understand the long-



GAIL KOZA

term effects of domoic acid on individual sea otters and the population.

Ted Cheeseman, “Sharing the Science: How 2000 Whale Watchers are Doing What Researchers Can’t (Afford to) Do”

August 21, 2018

Ted Cheeseman, founder of Happywhale and owner of Cheesemans' Ecology Safaris, provided an engaging presentation in which he shared how the Happywhale.com platform is enabling an inspiring movement of citizen science and empowering whale science with information that would otherwise be too costly to obtain. Through the Happywhale

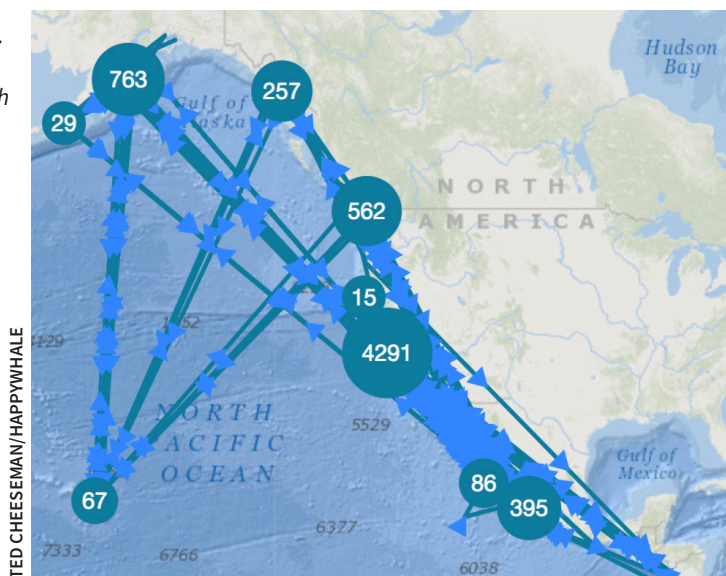
platform, thousands of citizen scientists are contributing whale sighting photos and location data that are then used by researchers. To date, over 15,000 individuals from the Antarctic to Alaska have been identified. Suddenly, whale science has become personal, accessible, and hopefully, more powerful. With this, we are more quickly identifying entangled whales and learning if individuals who have suffered entanglements survive. We are also better understanding whale migration patterns.

Daniella Dimitrova Russo, “Think Beyond Plastic”

September 25, 2018

Daniella Dimitrova Russo is Founder and CEO of Think Beyond Plastic™, the innovation accelerator focused on the global plastic pollution crisis. On this evening she'll talk about how Think Beyond Plastic approaches plastic pollution as an untapped entrepreneurial and investment opportunity, and an innovation challenge. Since 2009, Think Beyond Plastic has led the shift away from fossil fuel-based plastics towards bio-based, bio-benign materials from renewable sources and associated manufacturing, and innovative consumer and business products specifically designed to handle these new materials. Russo's approach leverages a blended executive experience in high-tech,

Top: California sea otter and pup. Bottom: Migratory connections for humpbacks in North Pacific, 2015.



Top: Think Beyond Plastic™ addresses the global plastic pollution crisis. Bottom: A killer whale breaches on the Monterey Bay.



San Francisco Bay cont.

Fortune-500 businesses and NGOs. She launched Think Beyond Plastic to address a growing consumer and business demand for sustainable alternatives to conventional plastic.

EDUCATIONAL OUTREACH EVENTS

Annual Farallon Islands Whale Watch Adventure

August 26 2018

The San Francisco Bay Chapter partnered with San Francisco Whale Tours to spend a day exploring the waters between the dramatic Farallon Islands and San Francisco Bay in search of whales and other marine life. The sheer abundance of wildlife around the islands was a sight to behold. Species observed included harbor porpoises, humpback whales, California sea lions, Northern fur seals, Pacific harbor seals, tufted puffins, Brandt's

cormorants, brown pelicans and more. Thanks to all who participated and to our host, San Francisco Whale Tours!

VOLUNTEER WITH US

The San Francisco Bay Chapter of ACS is an active chapter and our impact is unlimited as long as we tap the vision and creativity of those in the Bay Area who care about cetaceans and our oceans. We are currently seeking volunteers to take a more active role in the work of the Chapter in the following areas:

BOARD MEMBER OPPORTUNITIES

Two year commitment

- Education Coordinator
- Volunteer Coordinator
- Presentation Coordinator

VOLUNTEER OPPORTUNITIES

- Naturalists– staff our table at upcoming events and assist with education programs
- Social Media Coordinator
- Media Specialist

To learn more about these volunteering opportunities and to apply, please visit our website at acs-sfbay.org/volunteer. We appreciate your support!

We at ACS San Francisco Bay Chapter thank all of our members and donors for your constant support of our organization. Your contributions support our education and outreach programs and enable us to offer research and travel grants to outstanding graduate students and scientists, helping to ensure that important cetacean research continues.





Top: Sunset flukes on Monterey Bay. Second: Members of the University of Hawaii, ACS/Manoa. Third: Original t-shirt design by University of Hawaii, ACS/Manoa. Bottom: Creative poster for the University of Hawaii, ACS/Hilo.



Student Coalition

ANNUAL REPORT 2017

Compiled by Sabena Siddiqui

The ACS Student groups are back in school for the Fall and have hit the ground running for this upcoming semester of marine conservation!

We are excited to announce that a new student group is forming at University of Wisconsin-Madison! Graduate student, Kara Henderlight, is currently promoting the group on her campus.

The ACS groups at Texas A&M University Corpus Christi, University of Hawaii-Hilo, and University of Hawaii-Manoa all are welcoming new student leaders onto their officer board. Each group is currently recruiting the new freshman for 2018 and are planning out their goals, campaigns, and events.

The University of Hawaii-Manoa group has already set up a guest speaker from NOAA, a kayaking trip, and a tour of the NOAA facility at Ford Island. If you hop over a few islands, you can join the University of Hawaii-Hilo group's guest speakers, campus tabling, and strandings response training!

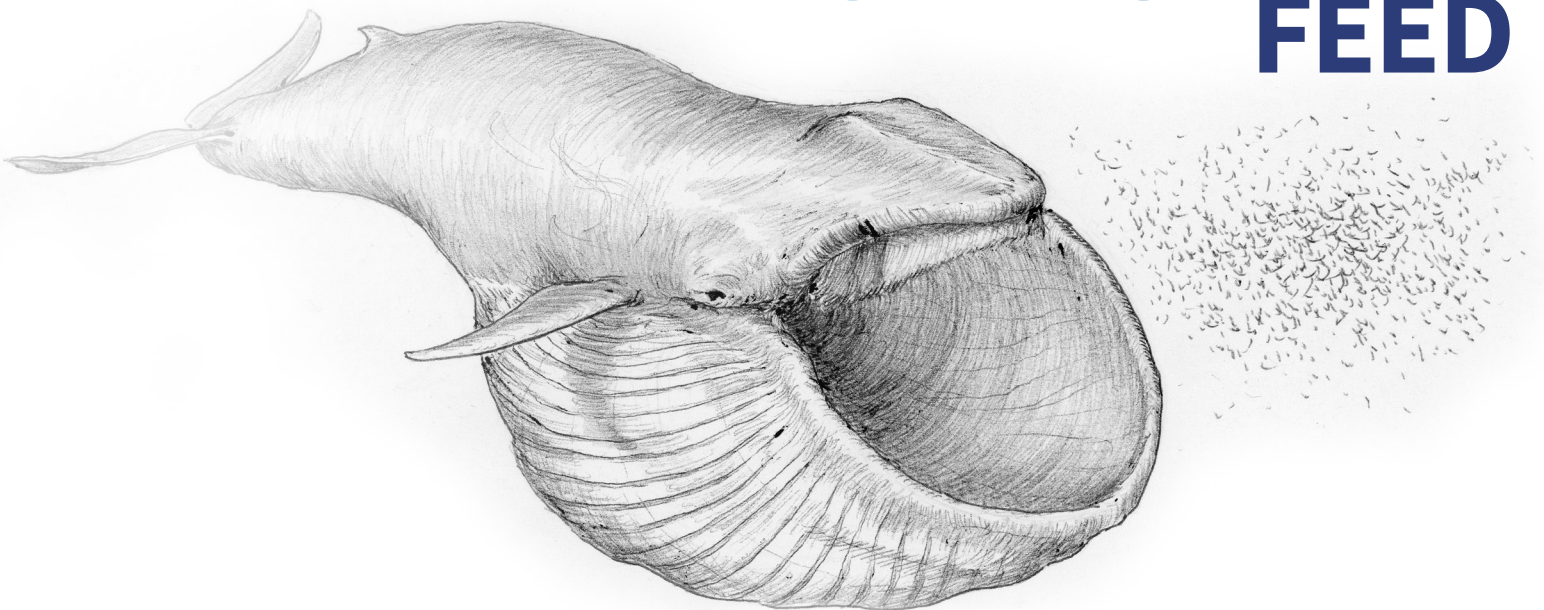
Leaders from each group is also gearing up for the upcoming ACS Conference in Newport Beach, CA. With this year's theme "Whales & Us: the next generation" this year's conference is especially valuable for students and youth.

Be sure to look for our passionate and intelligent ACS student leaders in November at the conference! Make sure to follow the student coalition groups on Facebook and Instagram and stay tuned.

If you are interested in joining us or supporting these burgeoning student efforts, get in touch with us!



HOW TO LUNGE FEED



By Eric Michael Keen, Ph.D.
eric.k@marecotel.org

IT'S NOT AS EASY AS IT LOOKS.

That's the first thing you need to know.

Second thing is that not just any old whale can do it. You gotta be part of the family. Some call us "rorquals". The stiffies call us the Balaenopteridae. Team Baleen Wing. Some say that's a reference to our dorsal fin, but I say it's a shout out to our style.

You'll find a lot of jokers out there who try to copy our moves, but we're the only ones with backbone out there who have the backbone to pull off the real thing. Granted, the pelicans get pretty close. And the gray whale clan used to be one of us, but they went rogue a while back after getting mixed up with the mud-rakers.

And you can forget about all those other whales, the rights and the bowheads – ask them to do it and they'll just stare

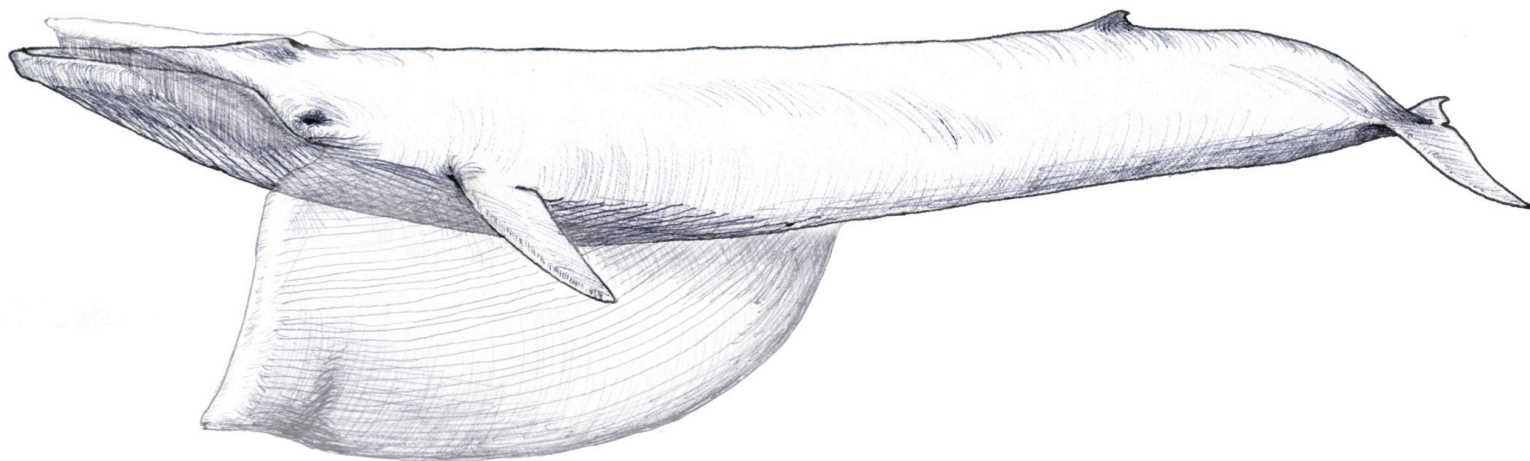
at you blankly with that stupid grin, trembling in their little bonnets. Those clowns are just grazers. Cows. At a party, they'd be the pool skimmers. We're the ones doing cannonballs.

The basic idea is easy enough to grasp. We ambush a swarm of prey, we engulf it and the water around it all at once, then we push the water out through our baleen. The prey stay trapped inside. It's still filter feeding, but it's inside-out. Inverted. Simple enough perhaps, but the adrenaline is in the details. Even the technical name for it, 'intermittent ram engulfment feeding,' fails to convey how outrageous our moves can be.

Break it down into four steps. First, the approach; you gotta find the prey patch,

then you gotta begin your charge. Second, the mouth opening -- which is a lot trickier than it sounds, believe me. Third, when the time is right, close that mouth back up again. And fourth, filtration. Do this all within six or seven seconds, and you just might have a chance at catching something. But it only works if all your body's systems can handle the extreme forces pulling at you, both inside and out, while executing all the necessary minutiae with exacting choreography.

So go find yourself a good feeding ground. Don't ask me how. That's an entirely different lesson. Once you get there, take a dive. Don't ask me exactly where, and don't ask me for how long either. We don't have all day here.



Special Report cont.

Once you get there, find yourself a prey patch. Dive deep, but keep an eye to the sky. If you're lucky and if the water isn't too murky, maybe a prey patch will get backlit by the downcast light. At any rate, your rostrum has whiskers, doesn't it? Well, use them. Those tactile vibrissae can let you know when you pass down through a good layer. If it seems thin, keep searching. That's rule number one. Never let a poor prey patch cause you to waste your breath or your blubber or your time.

But if it feels good, then go for it. Feel for the thickest part of it with the biggest individuals. If they are shallow, consider making use of the surface as a corral like the bubble-netting humpbacks do.

Now turn hard back up into it, from below, where they can't see you coming. While you do, start pumping to gain as much speed as you can. Six knots is good, ten knots is great. It's all about the ambush. If you're feeling lucky, you can try going in on your side, or better yet, in a barrel roll. That's my signature move. Or make up your own tricks; with wings like ours, the possibilities are practically endless.

Now brace yourself. Here's what it gets tricky. Reach your peak speed just before you start to plow through the patch. Right then, pull open your jaw just a tad. Now let physics do the rest.

If you're a blue whale like me, those mandibles you're hauling around are the largest bones in earth's history. They dangle there below your skull, suspended in immense musculature and pivoted

about in fibrous joints. To the rear of each of them is an awesome spandrel of bone, called the coronoid process, where the temporalis tendon attaches. This is what gets you all the leverage you're gonna need as you open and close those suckers, which by the way is the largest mechanical action in the biosphere. Hooray. If I had legs and hands I'd give you a standing ovation.

...the enormous elastic throat pouch that extends from your lips to your navel, will be pushed open from within as passing water pulls it open from the outside.

When you're not using them, your mandibles are cam-locked in place, like the latch of a mason jar. Their convex arch fits nicely into the curve of your snout. This way your mouth stays shut and streamlined while you travel between patches and launch into your ambush; otherwise the lift created by water moving over your throat would rip your jaws open. Sobering, isn't it?

So once you're ready, give those jaws a little "click" and watch the show. As they lower like a drawbridge to hell, they also rotate out so that their curves create a hoop much wider than that of your snout.

This maximizes your catchment area. Those poor suckers don't stand a chance.

Your jaws can swing out like this because they are not fused where they meet in the front; they join instead within a dense matrix of highly enervated connective tissue, where a nifty sensory organ, unique to us rorquals, monitors the extension and shear of the joint in order to provide precise nervous control to the entire engulfment process. It ensures that the mouth opens just so, and only as wide as it must, modulating your gap according to the size of your targeted swarm.

The opening hoop of your mouth is shaped with streamlined precision to mute the bow wave you create as you enter the prey field. Rather than get pushed away and frightened, the unsuspecting swarm spills into the void of your expanding maw, along with tons and tons of water. As it all spills in, your buccal cavity, the enormous elastic throat pouch that extends from your lips to your navel, will be pushed open from within as passing water pulls it open from the outside. And yes, it feels weird, trust me.

Your throat can manage this thanks to its accordion-like folds of specialized, grossly elastic "ventral groove" blubber, which is capable of stretching three to four times wider than its resting state. It is laced with a loose tapestry of musculature, which actively moderates the opening of your throat parachute as the world pulls at you from all directions. Without this careful control, the seventy

or so tons of water and prey you are engulfing could rip your pleats apart, tear up your mandibular muscles, and distend your mouth wide open.

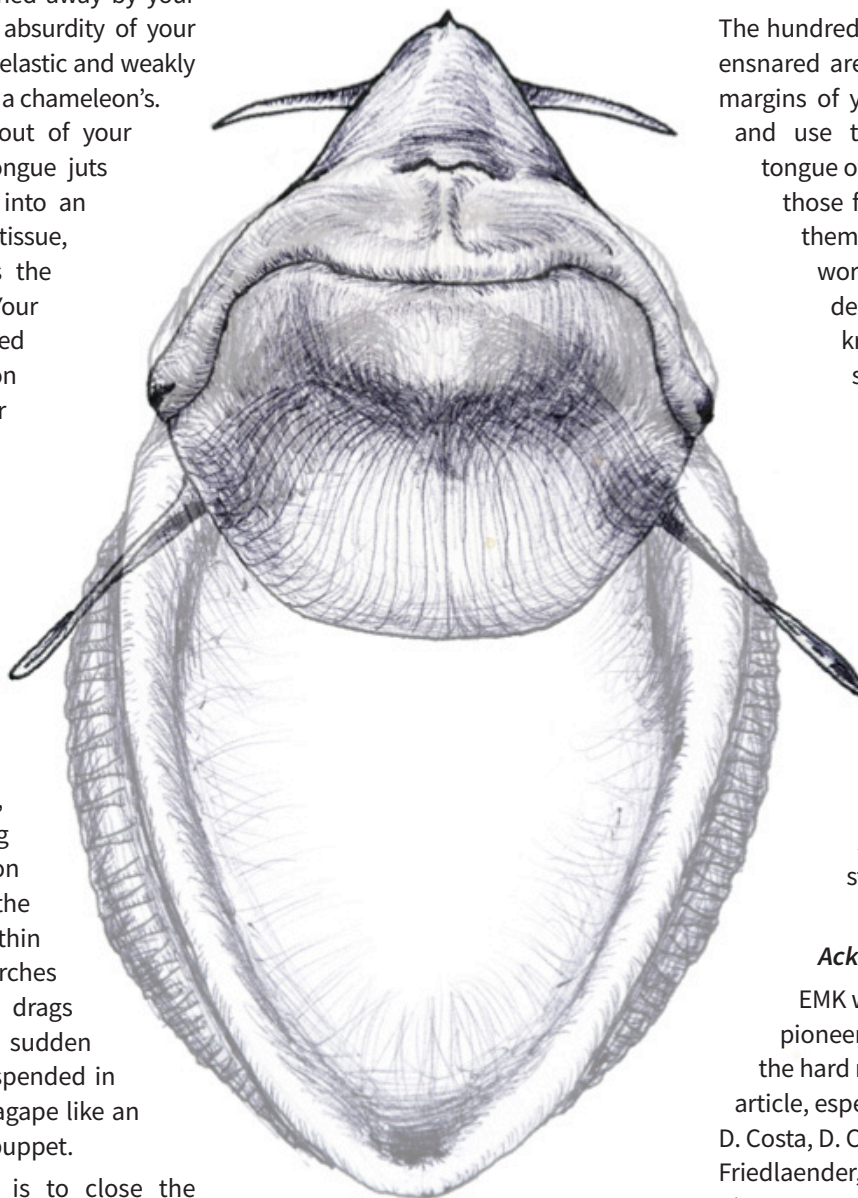
The prey are sucked into the new void of your mouth, rather than pushed away by your advance, thanks to the absurdity of your tongue. It is also grossly elastic and weakly muscularized, not unlike a chameleon's. But instead of jutting out of your mouth to feed, your tongue juts backward, invaginating into an enormous empty sac of tissue, known among stiffies as the 'oropharyngeal cavity'. Your cratered tongue, combined with the forward motion of the lunge, turns your mouth into a black hole, a vacuum from which neither water nor prey has any escape.

By now your mouth should be open to nearly a right angle. Act fast now: tense up the muscle matrix of your buccal blubber, which has stretched to its limit, to stop any further filling of your mouth. Upon stopping the inrush, the school bus of water within you immediately lurches forward, which in turn drags you from within to a sudden halt. There you are, suspended in the blue abyss, mouth agape like an apocalyptic, guffawing puppet.

All that remains now is to close the mouth before any prey can escape. The elastic energy pent up within the massive musculature of your mandibles lends you the recoil leverage you will need to do it. The momentum you've transferred to the engulfed water mass helps too; it's like closing a car door by reversing it then tapping the brake.

Congratulations, you are now a one hundred-ton tadpole. If I had any, I'd give you a "hip, hip, hooray". Over the course

of six or seven seconds, you have been e-braked by a mass of water equal to your own weight, or perhaps more if you are an older rorqual or one of the bigger species like me. You've doubled in volume, and you



have a meal sloshing around inside you. In your gliding creep, the water is seisching back and forth across your baleen racks, passively filtering the poor prey out of their death soup using the broom of your smile.

But your oxygen stores are running low, and you have other lunges to execute. No time for dilly-dally. On to step four: the purge. Crack your mouth into a wicked sneer, and start eversing your tongue back

to its resting state. The elastic properties of your ventral groove blubber facilitates the steady, energyefficient deflation of your throat parachute. Water squirts out through your baleen on all sides, like the spillway of a dam. You are a cup overflowing.

The hundreds of kilograms of prey you've ensnared are now writhing in the frayed margins of your baleen racks. Go ahead and use that two-ton, shape-shifting tongue of yours to lap up the krill from those frilly dinner plates. It gathers them up like the Cookie Monster working a table full of his favorite dessert. Now take that ball of krill or fish, or whatever it is you swallowed, and toss it back to your gaping gullet.

It is finished. Let out an earth-shuddering groan of satisfaction. Whistle and burp as much as you please. If you've made it this far, I'd say you've earned your wings.

But the clock continues to tick. See if you can get in a few more lunges before you have to get back up to the surface for air. This time, you start from a stand still.

Acknowledgments

EMK would like to thank the many pioneering scientists who conducted the hard research that informed this article, especially J. Calambokidis, D. Costa, D. Croll, T. Doniol-Valcroze, A. Friedlaender, J. Goldbogen, E. Hazen, A. Pivorunas, J. Potvin, and N. Pyenson (in alphabetical order).

A fully cited version of this manuscript is available from the author upon request. He thanks Lisa Ballance, Jay Barlow, Gretchen Steiger and one anonymous reviewer for comments that greatly improved this manuscript. He also thanks Lisa Ballance for assigning the research paper that led to the writing of this article.