Creating a Message:
a Building Block
for Communicating
Ocean Science

AGU 2010

Ocean Sciences Meeting

ASLO Student Workshop

25 February, 2010

Creating a Message:
a Building Block
for Communicating
Ocean Science

Presenters

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North Pacific Research Board

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North Pacific Research Board

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Venture Academy/Delta VISTA

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Kalama Intermediate School

With contributions from Elizabeth Eubanks

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Workshop Goals & Agenda

Workshop Goal

To learn how to create your own message about your research that can be tailored to a variety of audiences.

Workshop Agenda

- Introduction to messages
- All about message elements
- Create your own message
- Expert advice --- panel presentation and discussion
- Where to find more
- Discussion and Closing

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Creating Your Message

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Messages

"We don't need more information. We need to know what it means. We need a story that explains what it means and makes us feel like we fit in there somewhere."

Annette Simmons, The Story Factor

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"Even if you have reams of evidence on your side, remember: **numbers numb, jargon jars**, and nobody ever marched on Washington because of a pie chart.

If you want to connect with your audience, tell them a story."

Andy Goodman

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"In a two-hour speech, people will remember a two-minute story."

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Messages Tips

What are the primary points you want to communicate?

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Messages Tips

How do they affect the public's interest in health, safety and quality of life?

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Messages Tips

What everyday analogies will help communicate your message?

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Audience

- Who is your audience?
- Tailor your message accordingly

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Audience

- Marine researchers
- Marine resource management agencies
- Commercial and subsistence users
- Teachers and students in Alaska and beyond
- Alaska coastal communities
- General public

--NPRB Science Plan, pg. 151-152

Research Summaries

Series based on Science Plan research themes

-- Magazine style

Synopses

Tube worm bed nurseries for flatfish

The central Gulf of Alaska around Kodiak has supported a commercial flatfish fishery for many years beginning with foreign fisheries that worked the area starting in the early 1960s. South of Kodiak, emergent structures created by polychaete tube worms dominate the low-relief benthic region. This tube worm habitat provides a nursery area for age-0 juvenile flatfish, particularly northern rock sole and Pacific halibut, both commercially important species. Project 301 set out to evaluate these emergent structures to better estimate the distribution and abundance of juvenile flatfishes around Kodiak.

Using video camera sleds, researchers assessed fish densities, habitat features, and fish-habitat associations on a fine spatial scale. They found juvenile flatfish associated with low to moderate worm tube densities, where fish may aggregate to feed on the worms or associated fauna. The structural complexity created by the tubes may also reduce the predation threat for flatfish. Yet if worm tube densities were too high and created a continuous turf, juvenile flatfish were nearly absent because they could not bury themselves and thus were more vulnerable. If shell material was added to the seafloor to enhance structural complexity, juveniles were attracted only when larger adult flatfish were scarce.

Qui quod ut eligniet ea planit latia sunt. (Photo Credit)

Scientists concluded that differential predation pressure may make two seemingly similar areas of seafloor vastly different in quality as perceived by juvenile flatfish. The study also showed how species react to predation pressure. Rock sole minimize activity and bury themselves, while English sole become more active to avoid predation. Pacific halibut had an intermediate reaction between the other two species. Knowing how individual species relate to different habitat types, and the vulnerability or resilience of particular bottom types helps managers make better decisions on how to protect it. Fishing impacts on these habitat types are being studied under project 710.

Where flatfish live in the eastern Bering Sea

Scientists are also studying flatfish habitat in the eastern Bering Sea under project 709. That retrospective study examines the spatial distribution of yellowfin sole, Alaska plaice, and arrowtooth flounder on the eastern Bering Sea shelf over 25 years, from 1982 to 2005. Researchers expect to analyze fish distributions relative to small-scale environmental features, climatic indices, demographic state of the population, and human harvest activities by the summer of 2009.

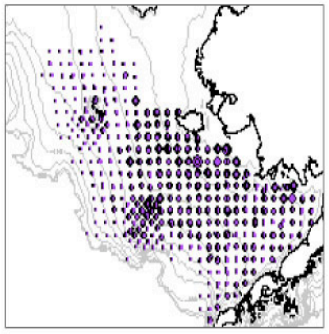


Figure 2.1 | Ullisi recab id que venimpos et elibust optati omnihit hil is con rehendis ex excea quis repere ressent auda voluptas qui quod ut eligniet ea planit latia sunt. Quis repere ressent auda voluptas qui quod ut eligniet ea planit latia sunt. Repere ressent auda voluptas qui quod ut eligniet ea planit latia sunt. (Photo Credit)

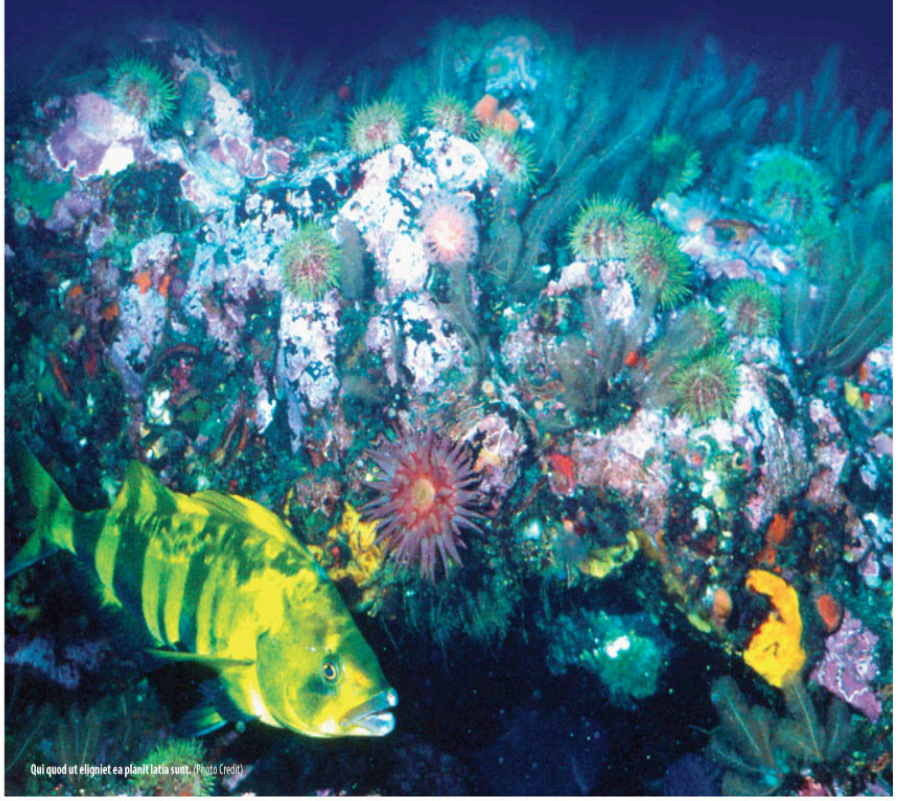
Yellowfin Sole
(Photo Credit)

Biodiversity in Aleutian Coral Gardens

Project 304 examined deepsea coral distribution and habitat in the central Aleutian Islands. While mainly a mapping study using submersibles, scientists also wanted to assess the importance of coral and sponge habitat for commercially important species of fish, crab, and octopus. The study found that 64-72% of commercially important fish species were associated with corals or sponges.

Juvenile rockfish were the most abundant fish, followed by grenadiers and Pacific ocean perch. Crabs were not as abundant as fishes and among the eight species identified, deepsea Tanner crabs were the most abundant. Most shallow-waterfishery management plan species (those living at depths of less than 1000 meters) appear to use sedentary, structure-providing invertebrates, such as hydroids, actiniarians, bryozoans, and tunicates frequently and there is evidence that they may be essential to some species. Because commercial fisheries seek most of these shallower-water fish species, their associated emergent epifauna continue to be at high risk to disturbance from fishing gear.

The study found that 64-72% of commercially important fish species were associated with corals or sponges.



Qui quod ut eligniet ea planit latia sunt. (Photo Credit)

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Website

UNDERSTANDING ECOSYSTEM PROCESSES IN THE
Bering Sea
AN HISTORIC PARTNERSHIP BETWEEN THE NORTH PACIFIC RESEARCH BOARD AND THE NATIONAL SCIENCE FOUNDATION

- Bering Sea Home
- Meetings + Events

AT A GLANCE
- General Information
- Where We'll Work
- Human Communities
- What We're Studying
- Meet the Scientists

PROJECTS
- Statements of Work
- Project Management
- Data Management
- Scientific Cruises
- Ecosystem Modeling

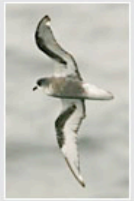
BERING SEA STORIES
- Media
- Teachers + Students
- Presentations
- Photo Gallery
- Animal Stories
- First Looks

FOUNDATIONS
- History
- Related Programs
- Key Meetings
- Contact Us

Summer Fieldwork Highlights

Scientists were out and about in the Bering Sea during the first summer field season of the program, observing everything from zooplankton to whales.

Janet Duffy-Anderson did post-larval cod and pollock sampling, but catches were fairly light except near the Pribilof Islands. **Alexei Pinchuk** collected zooplankton specimens for nutritional energy sampling.



Seabird observers had a successful survey, and also reported an area of abundant fin whales, a few shorttail albatross, and several mottled petrels. **Patrick Ressler** collected extensive physical oceanography information, both vertically and while underway.

Anne Hollowed collected forage fishes for nutritional energy analysis. Marine mammal observers reported seeing good numbers of fin and humpback whales, sufficient to make abundance estimates.

Sarah Kruse and the LTK group are working on finalizing the household and LTK surveys. **Kerim Aydin** has made good progress on linking the FEAST and NPZ models. **Ken Coyle** reports some challenges with the ROMS model.

Cold on the Shelf: Bering Sea 2008

Google™ Custom Search
Search

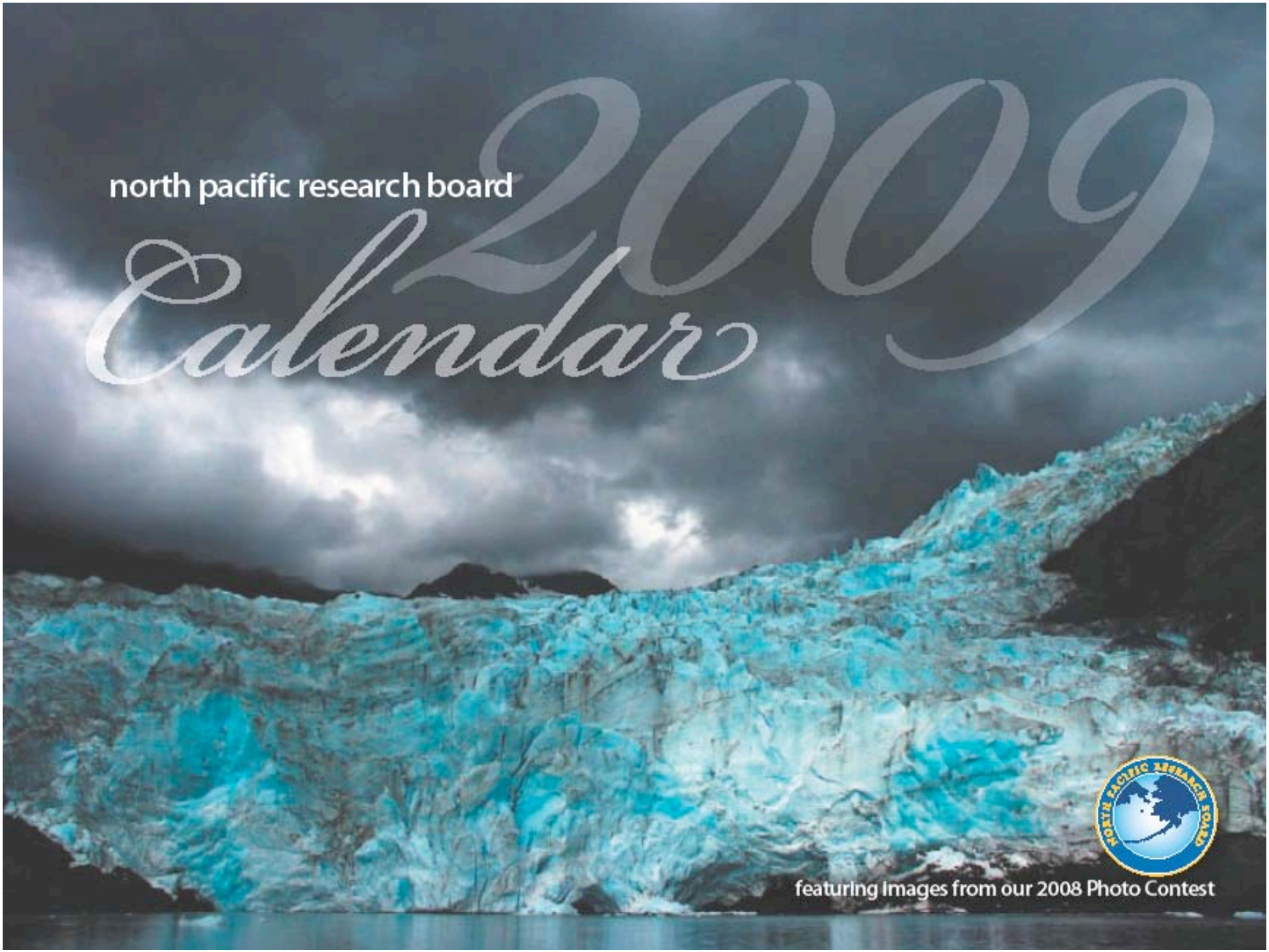
UPCOMING EVENTS
- **June-Sept** | Colony-based seabird studies, Pribilofs
- **Oct 14-16** | BEST-BSIERP PI Meeting, Girdwood
  - Draft Agenda
  - More Information

2008 Calendar of Events

Cruise Calendar

PROGRAM UPDATES
- **Best-Bizzerp WHAT?!** Resources (powerpoints, PDFs, photos) for explaining BEST-BSIERP are now available for download

BERING SEA BITS
- Jim Lovvorn interview with


north pacific research board
2009
Calendar
NORTH PACIFIC RESEARCH BOARD
featuring images from our 2008 Photo Contest






North Pacific Research Board

Building a clear understanding of the Gulf of Alaska, Bering Sea and Arctic Ocean ecosystems that enables effective management and sustainable use of marine resources

www.nprb.org

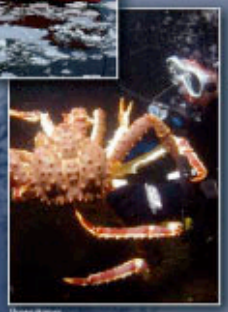
www.nprb.org

Science at Sea

Since 2002, researchers funded by NPRB have worked in three large marine ecosystems: the Gulf of Alaska, the Bering Sea, and the Arctic Ocean.


What We Study

NPRB research themes focus on everything from physical oceanography and plankton to fishes, marine mammals and seabirds, as well as on people in coastal communities and those who make their living from the ocean.



Integrated Ecosystem Research

Scientists join forces in a coordinated approach to understanding how a marine ecosystem works — from the benthos to the atmosphere, and everything in between. They also study the socio-economic impacts of a changing marine ecosystem on humans and communities.

NPRB and the National Science Foundation recently launched a joint five-year, $50 million project to further develop this understanding in the Bering Sea. NPRB also plans to launch an ecosystem study in the Gulf of Alaska.

North Pacific Research Board
1007 W Third Avenue, Suite 100 • Anchorage, AK 99501 • 907-644-6700

www.nprb.org

Traveling Exhibit

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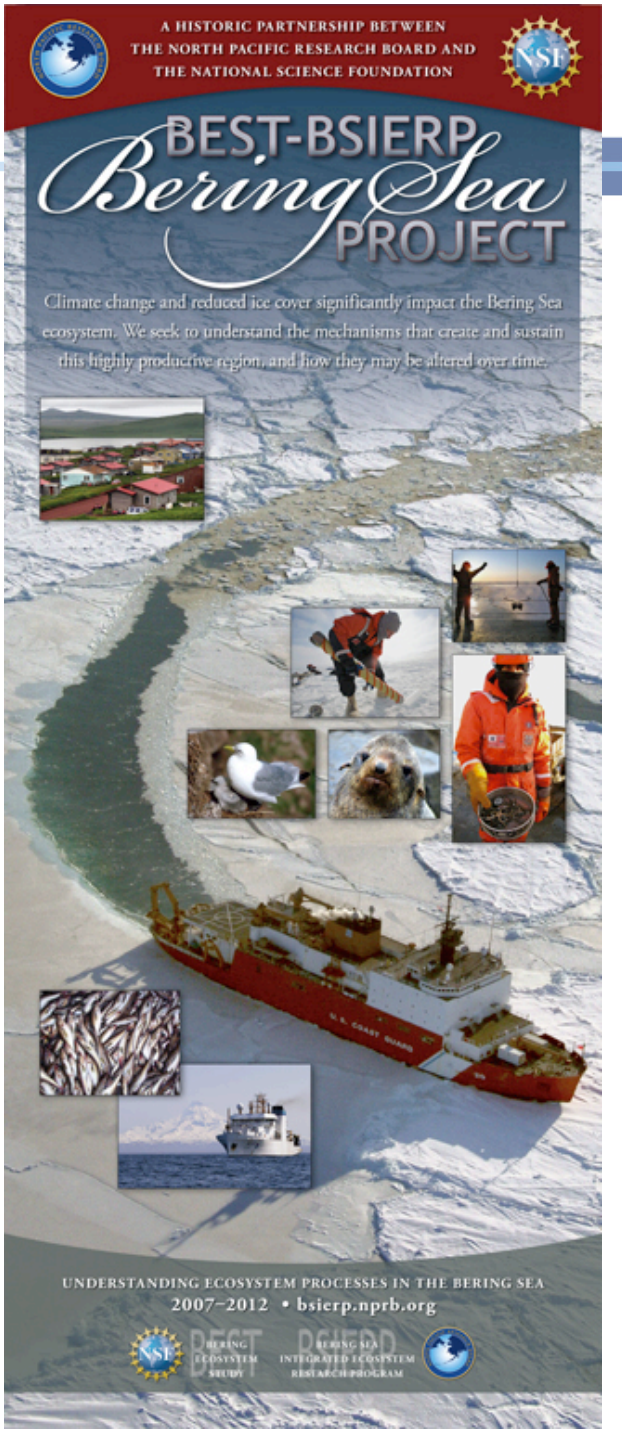
Pop-up Traveling Exhibit



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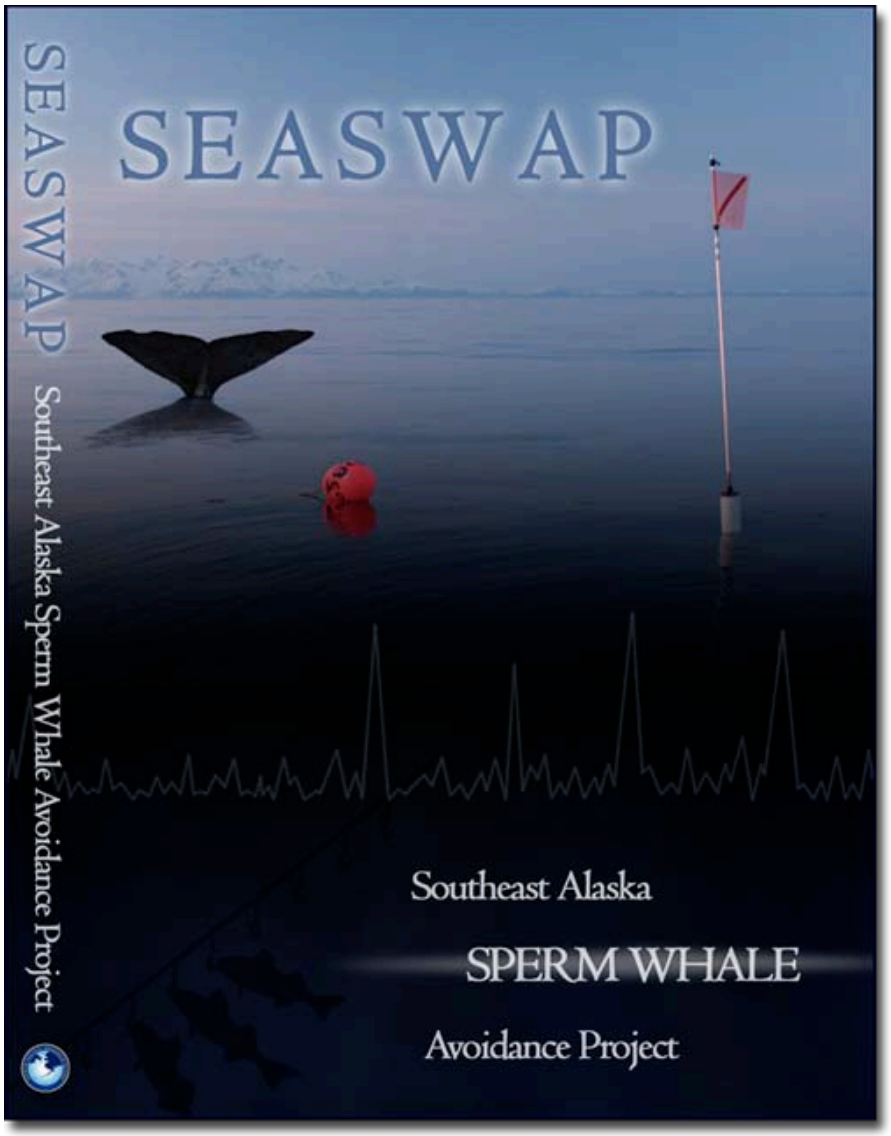
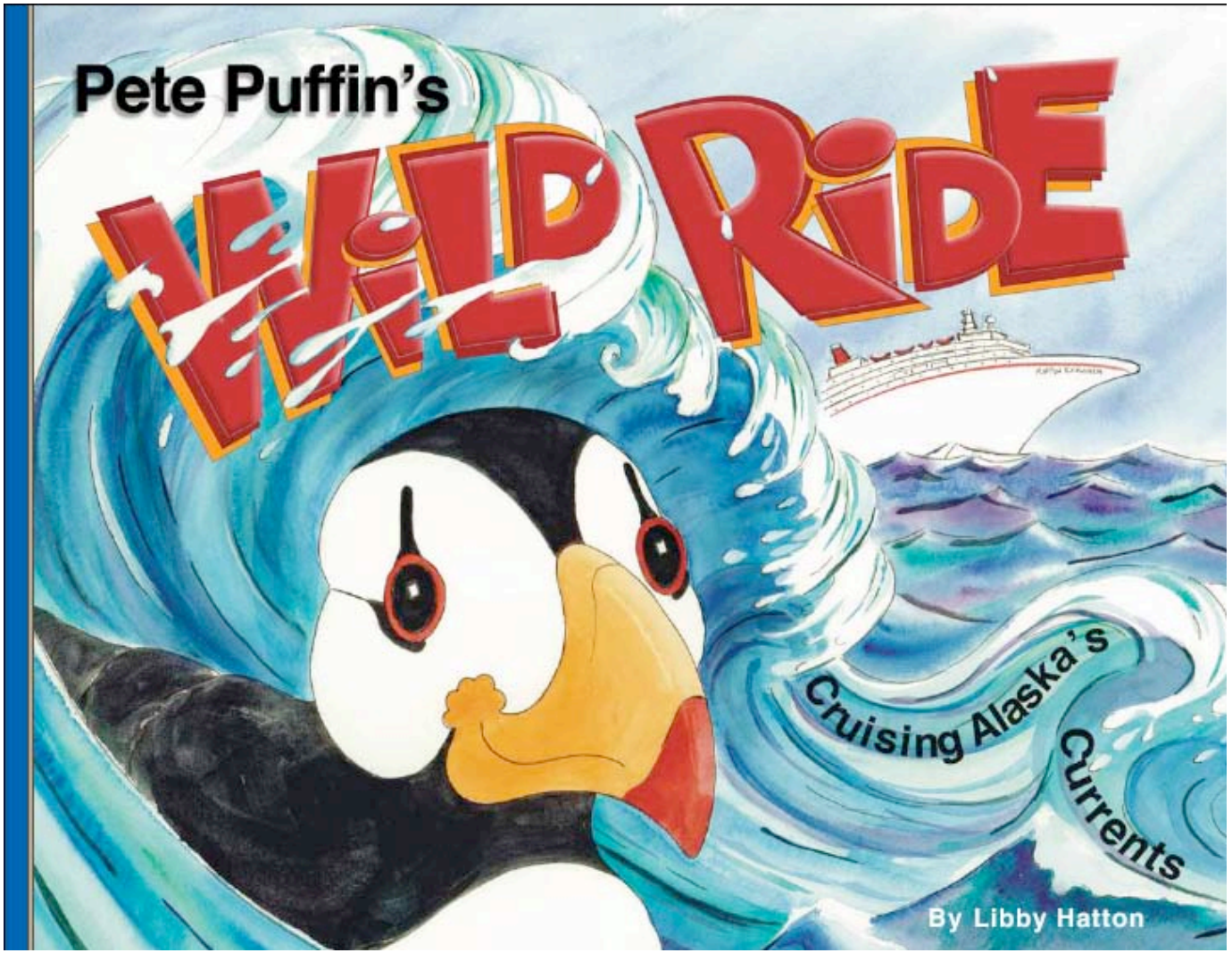
Videos



Books


Pete Puffin's
Wild Ride
Cruising Alaska's Currents
By Libby Hatton

Media

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Message Elements

- Who
- What
- Where
- When
- Why

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Activity

Now, it's your turn!

Create two phrases that communicate your research.


Bering Sea :: Ecosystem Partnership - Mozilla Firefox
File Edit View History Bookmarks Tools Help
www.bsierp.nprb.org
Free AOL & Unlimited...
Complete Sun and M...
UNDERSTANDING ECOSYSTEM PROCESSES IN THE
Bering Sea
NSF
AN HISTORIC PARTNERSHIP BETWEEN THE NORTH PACIFIC RESEARCH BOARD AND THE NATIONAL SCIENCE FOUNDATION
AT A GLANCE
General Program Information
Meet the Scientists
Study Region Map
Photo Gallery
NEWS + UPDATES
In the News
Scientific Cruises
Media
Teachers + Students
OUR FOCUS
An Ecosystem Approach
Human Communities
Ecosystem Modeling
Animal Stories
FOUNDATIONS
History
Bering Sea Ecosystem Research:
An unprecedented scientific effort between NPRB and NSF
SIX YEARS
93 SCIENTISTS
MILLIONS
OF CREATURES
ONE STORMY SEA
In the News
PROGRAM UPDATES
SAB Election Results
The votes for the Scientific Advisory Board have been tallied. Terms were randomly determined per the Program Management Plan. Congratulations to:
Kerim Aydin, Rolf Gradinger, Phyllis Stabeno (1-year term)
Carin Ashjian, Rodger Harvey, Mike Sigler (2-year term)
JOB OPPORTUNITY
OSU College of Oceanic + Atmospheric Sciences Research Associate (Postdoctoral)
Study the distribution and
Done
Start
Inbox for jeff.napp@no...
Microsoft PowerPoint - [...
Bering Sea :: Ecosyste...
10:31 AM

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Bering Sea Haiku

As the cold seas warm

scientists plunge in to find

where the fishes go.

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Tips

- Stop speaking in code
- Don't overdue "weasel words"
- Avoid confusing words – "positive trends"
- Use your words, not acronyms
- Give examples and metaphors

– From "Improving How Scientists Communicate About Climate Change, Susan Joy Hassol, EOS, March 2008

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Tips

Overused Phrases

- Perfect Storm
- Holy Grail
- Paradigm Shift

– The National Association of Science Writers

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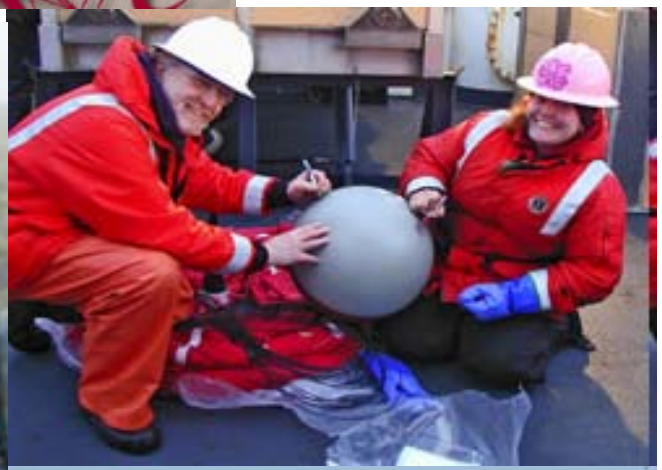
Advice from the Panel

- Scientists
- Educators
  - Middle school
  - High school
  - Informal

Science Stories from the Field



YOU- THE RESEARCHER

Bridge the Gap - Make a Broader Impact

CONNECT with

-school districts
-science teachers
-school science clubs
-scout groups
-create a project
-collect data
- collaborate on a Wikispace

Volunteer

-host a class on your topic
-participate in Career Day

TEACHER/ CLUB LEADER

Students/Kids - Families

Elizabeth Eubanks
St. Mark Catholic School,Boynton Beach, FL
hoocaca@yahoo.com

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Activity 2

- Write a short message that describes your research
- Wad up your message and throw it to someone else in the room
- Pick up message and read aloud

Resources

CoSEE

NSF Ocean Sciences

- Helping scientists achieve broader impacts and share research with the public
- Promoting partnerships between ocean scientists and educators

American Geophysical Union

- Communicating Your Science to the Public
- www.agu.org

AAAS

- Communicating Science Tools and Workshops
- www.aaas.org

COSEE California

- Communicating Ocean Science Course
- Communicating Ocean Science for Informal Audiences Course
- www.coseeca.net

NSF Workshops

- Communicating on Climate Change: An Essential Resource for Journalists, Scientists, and Educators
- Metcalf Institute for Marine and Environmental literacy

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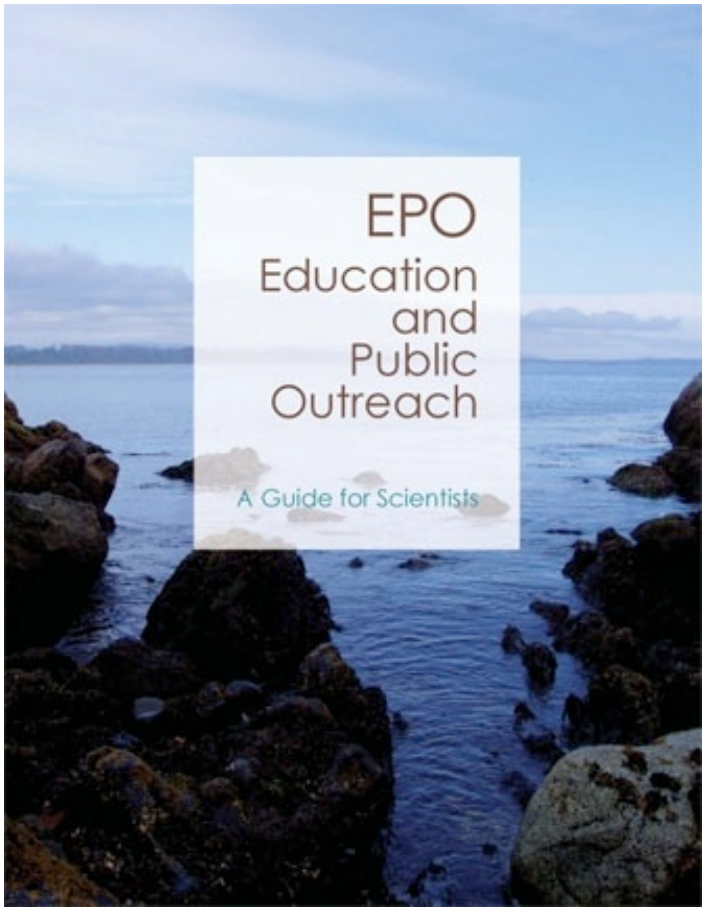
Ocean Observing

- The GoodmanCenter.com

  -- Ocean Observing Storytelling & Datavisualization Workshop

A Guide for Scientists



- Developed by the Centers for Ocean Science Education Excellence and TOS
- TOS website

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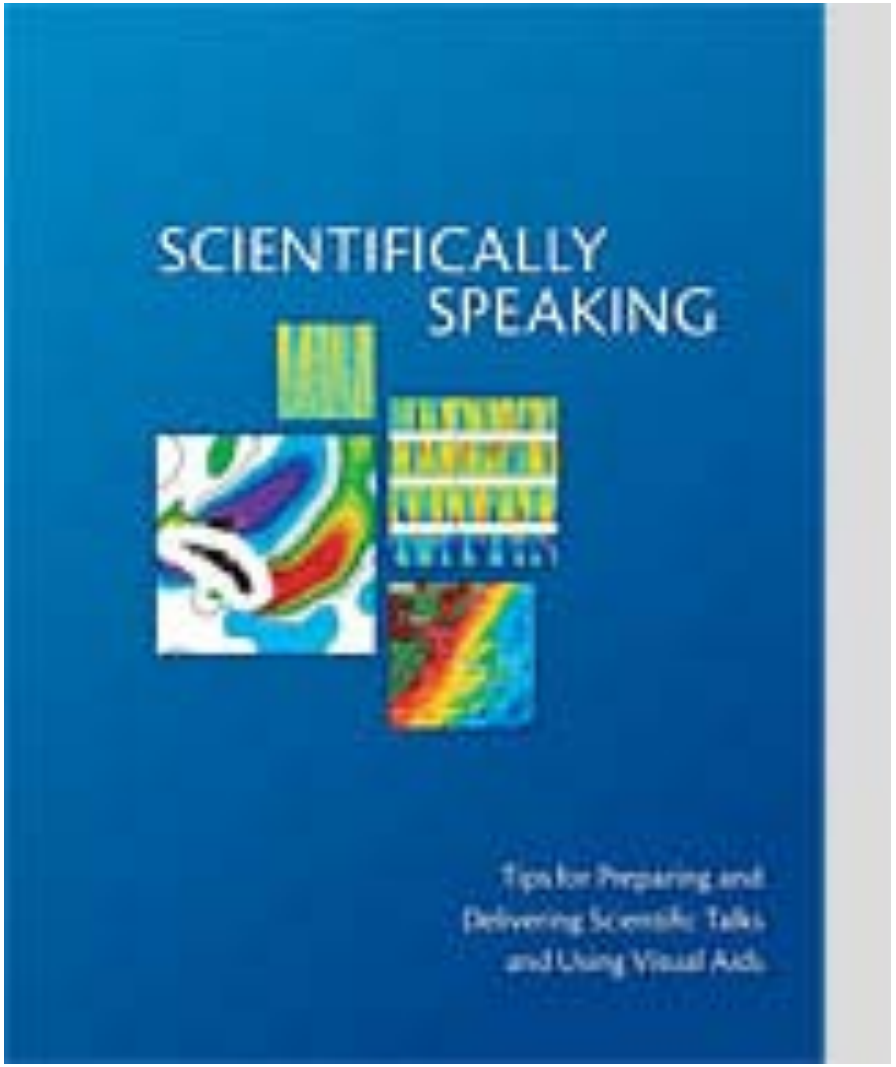
Scientifically Speaking




Discussion and Questions


Thank You!