RIGHT WHALE NEWS

An independent forum for right whale conservation and recovery, published four times a year in February, May, August, and November

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Additional Calf and New Mother Discovered

Contributed by Allison Henry and Peter Duley, Northeast Fisheries Science Center, and Philip Hamilton, New England Aquarium

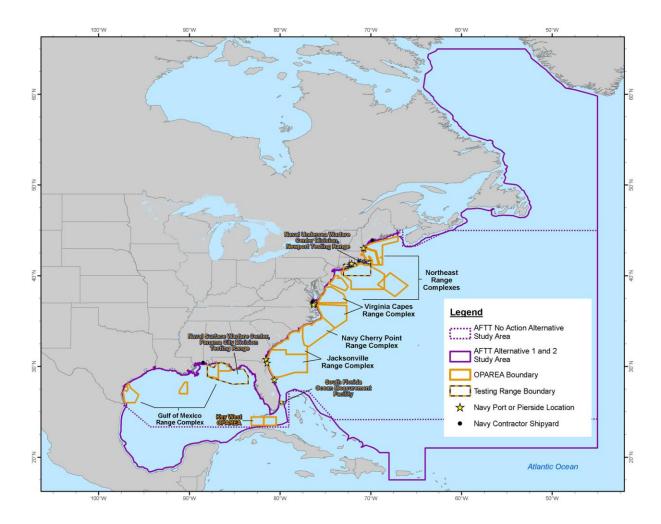
The 2012 calf production was low—with only six calves reported from the calving ground (*Right Whale News*, February 2012). However, a new mother and an additional calf have been sighted—calf # 7 for this year. On the afternoon of 19 May 2012, the R/V *Delaware II* from the Northeast Fisheries Science Center came upon a large aggregation of skim-feeding right and sei whales along the northern edge of Georges Bank. A RHIB was launched to photo-document and collect data. It was a beautiful day and there were right whales echelon feeding practically on top of the sei whales (or vice versa). Who knew it could get better? At one point, the aggregation shifted so that it was pretty much all around the drifting *Delaware II*. A mother-calf pair swam close by the ship, providing an excellent opportunity to get a good look at them. The shipboard team wasn't able to identify the mother in the field, but knew that she wasn't one of the known mothers for the season, and notified the small boat to take photos and collect a biopsy.

After reviewing the photographs, the calf appears to be of a size and have callosity development consistent with it being born in the usual December to March time frame. However, where that birth occurred is unknown as the mother has never been seen south of New England.

The mother was initially thought to be catalog #1622. She looks very much like that whale—especially from the right side—and #1622 was due to give birth this year. But after closer inspection at NEAq, it was discovered that not only is she a new mother for the season, but for the catalog as well. For this female, there were just four known previous sightings—from the Gulf of Maine, in Cape Cod Bay, and in the Great South Channel.

This whale had an intermatch code of BK01GOM2009 and her sex was unknown. Now, she has been added to the catalog as a "new" whale—#3995, a female. It will be very interesting to see what her calf's genetics reveal and what her future sighting history will be like.

Navy's Atlantic Draft Environmental Impact Statement: Comment Period Open



The proposed Atlantic Fleet Training and Testing Area encompasses large areas off the east coast of the U.S. and in the Gulf of Mexico. An Environmental Impact Statement (EIS) provides the opportunity to comment on the balancing of military readiness requirements with protection of marine mammals and their environment.

The Navy's authorization to take marine mammals incidental to the conduct of training activities utilizing active sonar off the east coast of the United States expires in January of 2014. Multiple other authorizations covering additional training activities in the Atlantic and Gulf of Mexico also expire on different dates from 2014 to 2016. The Navy is in the process of requesting a new authorization from the National Marine Fisheries Service (NMFS) for its East Coast and Gulf of Mexico training exercises that will comprehensively address all of their training activities in

these areas, and essentially replace the multiple authorizations that are currently in place. Under the Marine Mammal Protection Act (MMPA) of 1972, as amended in 2004 (which prohibits the "taking" (e.g., harassment, injury, or killing) of any marine mammal, NMFS may issue a Letter of Authorization (LOA) allowing the take of marine mammals incidental to Navy training and testing activities. These military readiness activities include the deployment of ships, submarines, aircraft, and systems; and may include testing of torpedoes, unmanned vehicles, sonar systems, and explosives. Compared to the previous (2009) authorization, the current application requests an increased level of activity within a larger area.

The Navy is required to operate in compliance with environmental laws. In addition to the MMPA, two additional laws come into play: The National Environmental Policy Act (NEPA) of 1969 and the Endangered Species Act (ESA) of 1973. The MMPA prohibits the "taking" (e.g., harassment, injury, or killing) of any marine mammal. The ESA prohibits actions that may "adversely affect" listed species or their designated critical habitat. Lastly, NEPA directs Federal agencies, when planning projects or issuing permits, to conduct environmental reviews to consider the potential impacts on the environment by their proposed actions. NEPA is key, as public involvement is an important part, since NEPA is based on full disclosure and open discussion. The public disclosure leads to government accountability for the environmental effects of Federal decisions. In the case of all three of these laws, the Navy, as for/with any other party, is seeking an exemption or exception to the laws (exemptions are provided for in the language of the statute).

The balancing of a requirement of the Navy mission to maintain, train, and equip combat-ready U.S. Naval forces with a legal compliance for the conservation of marine mammals, endangered species, and the environment converges in the NEPA-initiated Environmental Impact Statement (EIS), the public meetings, and the public comment period. It is the EIS (see below) that lays out the information and alternatives, and is the basis for public review and comment.

The process is lengthy and multi-dimensional. Under the MMPA, the incidental take of marine mammals during military readiness activities may be authorized if the total taking will have negligible impact on the affected species or stock; and under the ESA, if the action will not jeopardize the continued existence of any threatened or endangered species or result in destruction or adverse modification of critical habitat for such species. An analysis is conducted under NEPA to determine the potential impacts to the human environment. An MMPA authorization must include permissible methods of taking, include mitigation to effect the least practicable adverse impact, and list requirements pertaining to monitoring and reporting of any taking.

Over time, the process has been modified. Most relevant, embedded in the National Defense Reauthorization Act for Fiscal Year 2004, was the military's broader Range and Readiness Preservation Initiative, which modified certain language in the MMPA and ESA:

- Military readiness activities are no longer subject to "small numbers" or "specific geographic region";
- the definition of "harassment" was modified as it relates to military readiness activities ("... has the potential to injure a marine mammal ..." became "... has the significant potential to injure a marine mammal ... ";
- and "disturbs or is likely to disturb ... by causing disruption of behavioral patterns," was amended to become "... to a point where such behavioral patterns are abandoned or significantly altered."; and "least practicable adverse impact" was modified to include a consideration of personnel safety, practicability of implementation, and impact on the effectiveness of the "military readiness activity."

The Navy describes that it has developed a set of procedures and tools based on the best available science to minimize effects of training and testing activities on the ocean environment. The crew of every Navy ship are trained in and follow mitigation measures. These include pre-exercise monitoring, posting of trained lookouts, establishing mitigation zones for marine species in which sonar transmissions will be reduced or ceased, conducting safe navigation, and reporting marine mammal sightings.

Within the NMFS Protected Resources Division, Conservation and Permits Branch, Silver Spring, Maryland, there are two subdivisions: 1. the scientific research permits group and 2. the incidental-take authorization group. This latter program is tasked with implementation of a section of the MMPA which provides a mechanism for allowing, upon request, the "incidental" but not intentional taking of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing). Further information, including previous Navy LOAs, is at: www.nmfs.noaa.gov/pr/permits/incidental.htm.

Occurring in parallel, any takings of marine mammals listed as threatened or endangered under the ESA must be authorized under both the ESA and MMPA. The interaction between the Navy and NMFS involves another Division of NMFS, the Endangered Species Division. Here, the ESA takes are reviewed in a Biological Opinion (BO) and are authorized by an Incidental Take Statement (ITS). Typically, binding and/or discretionary recommendations to reduce impact are attached.

As the process unfolds, Federal Register notices lay out the preliminary determinations and findings (along with the associated analyses) for the public to provide comments. The comments are considered and a final determination is made and published in the Federal Register as a

"rule" or "regulation." Once a rule is in place, NMFS proceeds to issue an LOA, which is the actual authorization. Typically, the LOA contains specific detail about actions, species, number of takes, and mitigating measures. For readers of *Right Whale News*, the mitigating measures provide detailed measures regarding North Atlantic right whales.

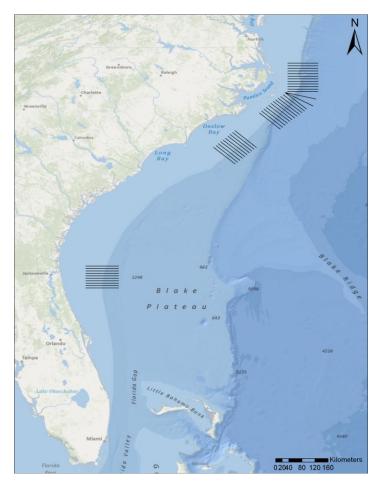
The Atlantic Fleet Training and Testing Draft Environmental Impact Statement is posted at www.AFTTEIS.com. Informational materials, including a Fact Sheet Booklet (look under Documents and References) are provided.

The application for an LOA and the Draft EIS has been prepared by the Naval Facilities Engineering Command, 6506 Hampton Blvd., Norfolk Virginia 23508-1278. Written comments may be submitted to ... Attention: Code EV22 (AFTT EIS Project Managers) at the foregoing address, or online at www.AFTTEIS.com prior to 10 July 2012.

Protected Species Monitoring of Naval Exercise Sites

Contributed by William McLellan, University of North Carolina at Wilmington

In response to permit requirements, the Navy has funded a series of surveys to be conducted off the US Atlantic coast to monitor protected species distribution. One of these survey efforts off Jacksonville, Florida, has recently finished three years of effort. The surveys have been conducted on a monthly basis year round since 2009 and include aerial, vessel and acoustic monitoring. Surveys will continue at the JAX site on a regular monthly basis. There have also been protected species monitoring surveys of a site off Onslow Bay, North Carolina, which were expanded in 2011, the protected species monitoring surveys were expanded to include a large region off the Outer Banks of North Carolina. These surveys are designed to assess seasonal distribution of marine mammals, specifically deep diving pilot and beaked whales off the continental shelf break. All visual monitoring sightings have been loaded onto the OBIS SEAMAP website and can be found at http://seamap.env.duke.edu/. Enter a species or location of interest when in the website to see plots of sighting locations. Or, if specifically interested in the Jacksonville surveys, you can go to the "Browse Datasets" tab and draw down to University of North Carolina Wilmington and view the USWTR JAX data sets.



The location of all tracklines currently being surveyed by the Protected Species Monitoring program conducted for the US NAVY by UNC Wilmington and Duke University.

An Assessment of the Ship-Speed Rule

On 9 December 2008, the ship-speed rule promulgated by the National Marine Fisheries Service went into effect. The rule requires that vessels 65 feet and greater in length travel at 10 knots or less near key port entrances and in certain areas of right whale aggregation along the U.S. eastern seaboard, termed "Seasonal Management Areas." The original rule contained a "sunset" clause, whereby the rule was set to expire five years from its effective date, on 9 December 2013. An Assessment of the Final Rule to Implement Vessel-Speed Restrictions to Reduce the Threat of Vessel Collisions with North Atlantic Right Whales by G.K. Silber and S. Bettridge has been published. The report's central conclusion is that the findings to date (including various statistical analyses) are inconclusive regarding the effectiveness of the rule in preventing or reducing ship-strike deaths or serious injuries, and a longer time-frame will be required to detect changes. This comprehensive report covers a number of components related to this issue. Availability is provided below in the Scientific Literature and Reports section.

Right Whale Entanglement Response: Success, Failure, Risk, Reward, Fact, Fiction

Contributed by Scott Landry, Provincetown Center for Coastal Studies, Provincetown, MA

On September 4, 2009, an incredibly rare day of flat calm seas off New England in fall, the PCCS entanglement response team got a panicked call from a recreational boater on Jeffreys Ledge, east of the Isles of Shoals, New Hampshire. Despite the broken cell phone reception, the team gathered enough information to convince them that the fisherman was watching a whale struggle in gear. At that location and season, the team thought it most likely to be a minke whale, a few of which are reported entangled annually along New England as they start their migration in autumn. While over 60 miles from Provincetown and with the fisherman unable to stand by, the team decided to respond nonetheless.

It was a shock to eventually find a full-grown right whale, its mouth and head crisscrossed with multiple lengths of rope and bloody wounds. Distracted by the gear, the whale was flailing its flukes and making short dives to the bottom, returning to the surface with mud flowing from its mouth, even as our response vessel *Ibis* approached closely. The team had never seen anything quite like it before. Entangled right whales are usually on the move, and generally have little tolerance for being approached by boats. Taking advantage of the situation the team used a thirty-foot pole and hook-shaped knife to make a single cut to the rope stretched across the back of the whale. Sensing something had changed, the whale opened its mouth and the weight of the gear beneath pulled the rope violently from its mouth. The whale sped off, gear-free. The New England Aquarium later identified the whale as Mavynne (Catalog #1151), a whale they had seen with a calf in the Bay of Fundy the week prior (her calf was later sighted alive and well off the Florida coast).

Entanglement in fishing gear and marine debris is a part of modern life for many whale populations, including North Atlantic right whales. Entanglement is so prevalent in this species that the outward appearance of right whales has actually changed over time, with nearly 80% of the population now showing bright white scarring from prior entanglements on normally black skin. Despite the ubiquity of entanglement, all evidence indicates that finding an entangled whale is a relatively rare event. The size of their range coupled with their great mobility, even when carrying gear, means that finding any one individual whale, let alone an entangled one, is uncommon. Despite that fact, just over 100 entangled right whale cases, both alive and dead, have been documented over the last 30 years (11 in 2011 alone), including whales that have been entangled multiple times. The total impact of entanglement on the population is hard to measure precisely (carcasses are likely to go undiscovered and indirect impacts, such as reduced fecundity are just now being defined), but each year the number of human-related deaths must be regarded

as a significant factor in population growth. Considering how hard it is to find entangled whales, preventing entanglements remains the ultimate, if difficult goal. For those who are found however, disentanglement offers the best chance at helping the population.

Disentanglement efforts south of Newfoundland in North America started in 1984 with the disentanglement of a humpback whale (Ibis) off Massachusetts (prior to this, Jon Lien and his team were already freeing whales caught in cod traps off Newfoundland). In 1993 right whale #2233 was cut free from a lethal entanglement on Stellwagen Bank, though this whale has not been seen since. Over time, as techniques evolved and the scope of the entanglement problem was better understood, the disentanglement effort became more organized, eventually becoming the Atlantic Large Whale Disentanglement Network. Since 1984 over 120 whales have been freed, including 30 right whales, a number that no doubt has helped the population.

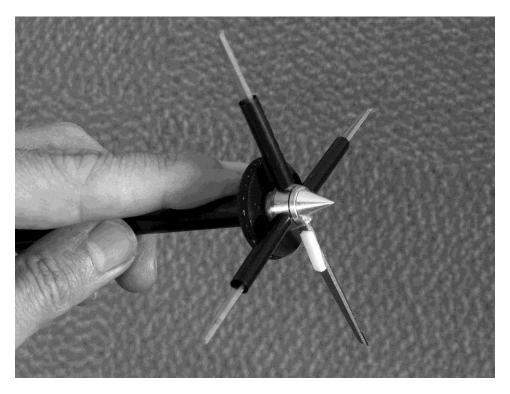
Disentanglement though is fraught with challenges and dangers. First, since responders have no control over the condition of an entangled whale when it is eventually found, we have moved away from using the word "rescue" for our work: even a disentangled whale is not necessarily a saved whale. Second, often enduring chronic pain, a large entangled whale presents a truly dangerous situation—who has not learned the lesson to give injured wild animals plenty of space? In the case of Mavynne, as in every disentanglement operation we have conducted, our team never had the sense that the whale knew we were trying to help. Presented with a novel situation, she reacted, as most wild animals would, with fear. Once freed, she did not pause to say thanks. She simply fled at great speed. (A recent proliferation of do-it-yourself disentanglements, easily viewed on YouTube, might create a different impression, with whales always cooperating with and thanking their rescuers. In every case that we have reviewed, this behavior could easily be interpreted as an animal suffering the effects of shock or capture myopathy. Considering that at least one human fatality has occurred during a disentanglement attempt, this is an intensely unfortunate message to broadcast.) Third, right whales are especially prone to entanglements at the forward parts of their bodies (mouth, head, and flippers) which are easily defended by their flukes, powerful swimming, and incredible maneuverability. Rostrum wraps are especially lethal and difficult to resolve. This means that most right whale disentanglements become prolonged affairs, rarely ending after a single day of hard work.

A second example illustrates the use of creative ideas and evolving technology. In 2008 an adult female right whale, #1140 (Wart) was discovered in Cape Cod Bay with a single length of rope running through her mouth. Since her rostrum or flippers were not actually wrapped, our response team thought it safest to simply shorten the rope and let her shed the rest on her own over time. For unknown reasons this simple entanglement was surprisingly persistent and in 2010 she was sighted with the same rope now wrapping her rostrum. Wraps of the upper jaw have long been the bane of entanglement responders and have forced the inspiration of a variety of techniques, from tail harnesses to at-sea sedation. The difficulty of getting close enough to cut the entanglement while remaining out of harm's way is the essential problem.

Starting in 2008 the PCCS response team began exploring archery as one means of doing just that. Comfortable and practiced with crossbows for biopsy, it seemed one method, however implausible, to at least try in cases where other techniques had been exhausted (in the case of #1140, the team had attempted disentanglement on seven occasions). Using an off-the-shelf, specialized cutting arrowhead (image below), the team practiced and prepared. In May 2010, over two years into her entanglement (and no calves during that time period) the team finally had a chance when she was found east of Cape Cod, skim-feeding. As in the past she abruptly stopped her behavior and began swimming away from *Ibis*. Returning from a dive, perhaps more closely to our boat than she had hoped, the team had a clear shot at 35 feet away. One blade of the arrow skimmed across the bridge of her rostrum and clean through the offending rope. She showed no reaction and carried on. Three days later she was seen feeding and gear-free. We speculated that the entanglement somehow impeded her calf production (she did not calve around 2008 as might have been expected). During the winter of 2011/2012 the team was hopeful that she might be seen with a calf since she had skipped so many years. This did not occur. However, our team is still hopeful for the coming 2012/2013 calving season.



On 1 May 2010 an innovative technology (rapidly spinning blades mounted on an arrow—in upper left of image) was used to cut line from the head of right whale #1140 ("Wart"). It is hoped that the gear-free female will once again join the ranks of calving right whales. (Image courtesy PCCS, under NOAA research permit #932-1905)



Arrowhead used on right whale #1140: The Gobbler Guillotine was developed by ArrowDynamics Inc. for hunting turkeys. Made of four, thin razor blades, each sheathed in lightweight plastic straws to keep the arrow flying true, the arrowhead easily cuts through ropes typically seen in whale entanglements. In the image, note that one of the plastic straws is missing. The blade cut through the straw as it cut through the rope on the upper jaw of #1140. While not appropriate for every disentanglement, the cutting arrowhead is an example of network responders adapting tools and techniques to the diversity of entanglement scenarios encountered in the field.

Stumpy is now on exhibit at the North Carolina Museum of Natural Sciences.

Contributed by William A. McLellan, University of North Carolina at Wilmington and Lisa Gatens, North Carolina Museum of Natural Sciences

Stumpy, the pregnant adult female right whale was found floating dead off the mouth of the Chesapeake Bay and necropsied on the Outer Banks in January 2004. The skeleton has been articulated and is hanging in the new science building at the North Carolina Museum of Natural Sciences, 11 W. Jones St., Raleigh, North Carolina. Further information is at: http://naturesearch.org/ and select the Stumpy story under "Latest News." A series of images

shot during the installation of Stumpy and her fetus can be found at http://www.flickr.com/search/?q=stumpy&w=26193549%40N04.



The skeleton of Stumpy, right whale catalog # 1004, is on display at the North Carolina Museum of Natural Sciences. The skeleton of her fetal calf is positioned within the mother's skeleton. The orange grid on the left mandible was used to map the topography of the bone. The exhibit also includes information on bone density and bone-strength research, a description of why right whales are so vulnerable, and a section of baleen. (Photo: Karen Swain)

Whale Center of New England to Continue Operations

On 22 March 2012, the Whale Center of New England (WCNE) announced that it was closing its doors, citing the illness of longtime director Mason Weinrich and financial challenges. In a welcome reversal, on 11 June, the WCNE, 24 Harbor Loop, Gloucester, Massachusetts, announced that it will continue operations and work to further its mission. Following the initial announcement of the closing, many friends, partners and members came forward to offer their support. A dedicated group of these individuals has partnered with the Board of Directors to form a new Board that will work to ensure the future of the organization.

The Whale Center was founded in 1980 by Mason Weinrich, then a Cornell University sophomore, by using work-study money to get a placement from the College of the Atlantic to gather data on whales seen on whale watches. Originally formed as the Cetacean Research Unit

(CRU) of the Gloucester Fishermen's Museum, the Whale Center has achieved many significant accomplishments over the past 30-plus years that can be attributed to Mason Weinrich, the naturalists, interns, staff, and the previous board members.

The initial goals of Clifford Merchant, the newly elected President of the Board, and the new Board, are to raise the funds necessary to position the Whale Center to continue the mission of education, marine conservation, and research on whales and their habitats. The initial focus will be on education programs at the WCNE Visitors Center and aboard whale-watch boats, and continuing to gather research data through partnerships with whale-watch companies. The Board also plans on strengthening relationships with similar organizations and creating partnerships.

With the financial assistance of our members and partners WCNE can achieve its goals. Anyone who would like to help or wishes further information should contact WCNE on its website www.whalecenter.org or on Facebook under "The Whale Center of New England."

2011 Stock Assessment Reports Available

The 2011 Stock Assessment Reports are final and available. Further information and electronic copies of SARs are available as regional compilations and individual reports at: www.nmfs.noaa.gov/pr/sars/. You also may send requests for copies of reports to: Chief, Marine Mammal and Sea Turtle Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910-3226, Attn: Stock Assessments. The North Atlantic right whale section can be found on pages 9 through 19 of the Atlantic Report and the North Pacific right whale section can be found on pages 203 through 209 of the Alaska Report.

Memorandum of Agreement for the SEUS Early Warning System Renewed

The multi-agency Memorandum of Agreement (MOA) that supports the Early Warning System in a portion of the SEUS critical habitat has been renewed. The announcement, by Barb Zoodsma, Right Whale Recovery Program Coordinator, Southeast Regional Office/NMFS, was made at the SEUS Right Whale Forum, Jacksonville, Florida, on 10 May 2012. Under this agreement, the Navy, Coast Guard, and Army Corps of Engineers provide annual support for aerial surveys in the central portion of the Early Warning System (from Cumberland Island,

Georgia, to Jacksonville Beach, Florida. This area contains three shipping channels and typically is the highest-density right whale area in the SEUS). In turn, NMFS provides the funds to a contractor (the Florida Fish and Wildlife Conservation Commission holds the current five-year contract, valued at a total of \$1.8M). The MOA is without a specified end date, so remains in place for the foreseeable future. The annual aerial survey reports can be found at: sero.nmfs.noaa.gov/pr/mm/rightwhales/RightWhalesSouth.htm.

Right Whale Conservation Public Service Announcement

Contributed by Cheryl Bonnes, NOAA Fisheries Service

NOAA's Fisheries Service and Ocean Media Center have created a 30-second broadcast-quality public service announcement (PSA). The "Slow to 10 Knots for Right Whales" PSA reminds vessel operators that right whales share our coastal waters. A broadcast-quality versions of the PSA is being distributed to television stations throughout the Southeast U.S, and is available on YouTube. For a DVD of the PSA's, please contact cheryl.bonnes@NOAA.gov. You may view the PSA at: www.youtube.com, and search on "Slow to 10 Knots for Right Whales."

40th Anniversary of the Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) was enacted on 21 October 1972. All marine mammals are protected under the MMPA. Further information at: www.nmfs.noaa.gov/pr/laws/mmpa/anniversary

Book Review

Jim Hain, Editor

Burnett, D. Graham. 2012. The Sounding of the Whale: Science & Cetaceans in the Twentieth Century. The University of Chicago Press. 793 pp.

This tome by Princeton historian D. Graham Burnett is long—in his own words, "a bricklike academic monograph"—and at times, the level of detail will be of interest mostly to other historians. On the other hand, the book will be of broad interest. The author points out that this is not a book about whales, but rather about the knowledge of whales. He asks the question,

"...how do the findings of scientists help make the world in which we live?" The book describes how whale science played a significant role both in the history of whaling and in the history of whale conservation—which, in turn, was an important component in the rise of the modern environmental movement. Some of these dimensions were once known to us and here our memory is refreshed. For younger readers, this background history may be unknown and will be informative.

The beginning of the book, the story of Antarctic whaling, has been described elsewhere, and Burnett adds a great deal of dimension and depth—perhaps beyond what will hold the interests of many readers. But, and this is a big but, the tide turns when Burnett moves to the northern hemisphere and more modern times. The backstories of John Lilly, the Communication Research Institute (CRI) in St. Thomas, the relationships with Carl Sagan and Aldous Huxley, the sex and drugs—where Lilly injected both himself and dolphins with LSD, the friction between Lilly and Forrest G. Wood, and the involvement of J. Edgar Hoover, G. Gordon Liddy, and mind-control "spooks" are fascinating. Other backstories include the "single most important discovery of twentieth-century whale science" and the work of Roger Payne and Scott McVay; the whistle-language studies of René-Guy Busnel; and the reference to a book many may have forgotten about—*Mind in the Waters*, by Joan McIntyre.

And actually, the book is actually more manageable than the page count may indicate. Almost half of the book text is devoted to footnotes; and the final 100 pages are devoted to bibliography and index.

On the final page of the text, upon prodding by a graduate student to identify the principal exportable message of the book, Burnett does so—in four words (which I will not divulge here). By studying history we can understand the present and perhaps prepare for the future. This is a book not about whales but about people. Burnett describes the roles, influences, foibles, and the labyrinthian interplay of people, motivations, and outcomes—from the past but still relevant to the present.

Help Wanted

Associate Editor – Right Whale News

Right Whale News seeks an Associate Editor. The position involves identifying current topics of interest, researching topics, acquiring supporting information, fact-checking, preparing draft article(s), and reviewing the issue prior to publication. Qualifications include a diverse

background in the science, politics, and management of right whales, with some prior writing, editorial, and publishing experience. The task load is shared with the Editor. The position is voluntary, but some travel expenses may be provided. At some point, the Associate Editor may be considered to assume the role of Editor. Send expressions of interest to Editor Jim Hain at jhain@earthlink.net.

Calendar

13-14 November 2012. Annual Meeting of the North Atlantic Right Whale Consortium, New Bedford Whaling Museum, New Bedford, Massachusetts. Website: www.narwc.org

17 November 2012. 4th Annual Right Whale Festival, Seawalk Pavilion, Jacksonville Beach, Florida. Website: rightwhalefestival.org.

A Special Request to Right Whale Scientists

Right Whale News attempts to provide comprehensive lists of recent scientific literature involving or related to right whales (see following). If you find that a publication of yours has not been included in RWN, please notify the Editor at jhain@earthlink.net so that it can be listed. We would also like to include advance notice of articles that have been accepted for publication.

Scientific Literature and Reports

Asaro, M.J. 2012. Geospatial analysis of management areas implemented for protection of the North Atlantic right whale along the northern Atlantic coast of the United States. Marine Policy 36(4):915-921.

Buono, M.R., M.S. Fernandez, and Y. Herrara. 2012. Morphology of the eye of the southern right whales (*Eubalaena australis*). Anatomical Record: Advances in Integrative Anatomy and Evolutionary Biology 295(2):355-368.

Carroll, E., N. Patenaude, S. Childerhouse, S. Kraus, R. Fewster and C. Baker. 2011. Abundance of the New Zealand subantarctic southern right whale population estimated from photo-identification and genotype mark-recapture. Marine Biology 158(11):2565-2575.

Cassoff, R.M., K.M. Moore, W.A. McLellan, S.G. Barco, D.S. Rotstein, and M.J. Moore. Lethal entanglements in baleen whales. Diseases of Aquatic Organisms 96(3): 175-185.

Doucett, G., C.M. Mikulski, K.L. King, P.B. Roth, Z. Wang, L.F. Leandro, S.L. Degrasse, K.D. White, D. DeBiase, R.M. Gillett, and R.M. Rolland. 2012. Endangered North Atlantic right whales (*Eubalaena glacialis*) experience repeated, concurrent exposure to multiple environmental neurotoxins produced by marine algae. Environmental Research 112:67-76.

Ellison, W.T., B.L. Southall, C.W. Clark, and A.S. Frankel. 2012. A new context-based approach to assess marine mammal behavioral responses to anthropogenic sounds. Conservation Biology 26(1):21-28.

Elwen, S.H., K.P. Findlay, J. Kiszka and C.R. Weir. 2011. Cetacean research in the southern African subregion: a review of previous studies and current knowledge. African Journal of Marine Science 33(3):469-493.

Fisher, D.O. and S.P. Blomberg. 2012. Inferring extinction of mammals from sighting records, threats, and biological traits. Conservation Biology 26(1):57-67.

Gulland, F.M.D. 2012. [Review of] Health of Antarctic Wildlife, edited by K.R.Kerry and M.J. Riddle. Marine Mammal Science 28(2):412-413.

Hinch, P.R., and E.M. De Santo. 2011. Erratum to "Factors to consider in evaluating the management and conservation effectiveness of a whale sanctuary to protect and conserve the North Atlantic right whale (*Eubalaena glacialis*) [Marine Policy 35(2):163-180; 2010]. Marine Policy 35(4):557.

Hofmeyr-Juritz, L.H. 2011. Acoustic behavior of southern right whales in relation to numbers of whales present in Walker Bay, South Africa. African Journal of Marine Science 33(3):415-428.

Marshall, M. 2012. Whale woes. New Scientist 213(2851):1-5. Discusses research on North Atlantic right whales and shipping following the 9/11/2001 attacks.

Marshall, M. 2012. Whale woes. New Scientist 213(2851):7. Reports on Roz Rolland's research on stress hormones in North Atlantic right whales.

McKenna, M.F., D. Ross, S.M. Wiggens, and J.A. Hildebrand. 2012. Underwater radiated noise from modern commercial ships. Journal of the Acoustical Society of America 131(2):92-103.

Meyer, M.A., P.B. Best, M.D. Anderson-Reade, G. Cliff, S.F.J. Dudley and S.P. Kirkman. 2011. Trends and interventions in large whale entanglements along the South African coast. African Journal of Marine Science 33(3): 429-440.

Moore, S.E., R.R. Reeves, B.L. Southall, T.J. Ragen, T.J., R.S. Suydam, and C.W. Clark. 2012. Marine mammals and anthropogenic sound in a rapidly changing Arctic. BioScience 62, 289-295.

National Marine Fisheries Service. 2012. Endangered and threatened species: Initiation of 5-year review for the North Atlantic right whale and the North Pacific right whale. Federal Register 77(55):16538-16539.

Parks, S.E., C.F. Hotchkin, C.A. Cortopassi and C.W. Clark. 2012. Characteristics of gunshot sound displays by North Atlantic right whales in the Bay of Fundy. Journal of the Acoustical Society of America 131(4):3173-3179.

Parks, S.E., J.D. Warren, K. Stamieszkin, C.A. Mayo, and D. Wiley. 2012. Dangerous dining: Surface foraging of North Atlantic right whales increases risk of vessel collisions. Biology Letters 8(1):57-60.

Rotander, A. B.V. Bavel, A. Polder, F. Riget, G.A. Auounsson, G.W. Gabrielsen, G.W. Vikingsson, D. Bloch, and M. Dam. 2012. Polybrominated diphenyl ethers (PBDEs) in marine mammals from Arctic and North Atlantic regions, 1986-2009. Environment International 40:102-109

Smith, T.D., R.R. Reeves, E.A. Josephsen and J.N. Lund. 2012. Spatial and seasonal distribution of American whaling and whales in the age of sail. PLoS ONE 7(4): e34905.

Silber, G.K. and S. Bettridge. 2012. An Assessment of the Final Rule to Implement Vessel Speed Restrictions to Reduce the Threat of Vessel Collisions with North Atlantic Right Whales. NOAA Technical Memorandum NMFS-OPR-48, National Marine Fisheries Service, Office of Protected Resources, Silver Spring, Maryland. 114 pp. Copies of this report may be obtained from: Office of Protected Resources, NOAA, NMFS, F/PR2, 1315 East-West Highway, Silver Spring, MD 20910; or online at: www.nmfs.noaa.gov/pr/pdfs/shipstrike/assessment_nmfsopr48.pdf.

Silber, G.K, A.S.M. Vanderlaan, A. Tejedor Arceredillo, L. Johnson, C.T. Taggart, M.W. Brown, S. Bettridge, and R. Sagarminaga. 2012. The role of the International Maritime Organization in reducing vessel threat to whales: process, options, action and effectiveness. Marine Policy 36(6):1221-1233.

Taylor, J.K.D., J.W. Mandelman, W.A. McLellan, M.J. Moore, G.B. Skomal, D.S. Rototein and S. D. Kraus. 2012. Shark predation on the North Atlantic right whale (*Eubalaena glacialis*) in the southeastern United States calving ground. Marine Mammal Science doi:10.1111/j 1748-7692.2011.00542.x

Vermeulen, E., A. Cammareri and L. Holsbeck. 2012. Alteration of southern right whale (*Eubalaena australis*) behavior by human-induced disturbance in Bahia San Antonio, Patagonia, Argentina. Aquatic Mammals 38(1):56-64.

Waring, G.T., E. Josephson, K. Maze-Foley, and P.E. Rosel (eds.) 2011. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2011. NOAA Technical Memorandum NMFS-NE xxx, National Marine Fisheries Service, Woods Hole, MA. 325 pp.

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