Bycatch Communication Network
# NEWSLETTER
Issue 14 Nov-Dec 2009

## In This Issue





The final issue of the Bycatch Communication Network Newsletter for 2009 comes to you on a high note, funding has been secured for production until the end of 2010. As Convenor and Editor of the Newsletter I would sincerely like to thank Dr. Andy Revill of Cefas (the Centre for Environment, Fisheries and Aquaculture Science, UK), for continuing financial support of this project.

On page seven, the new book "Deserted Ocean : A Social History of Depletion" by Norman Holy is introduced. Norm was the inaugural 1st runner-up prize winner of the WWF Smartgear competition in 2005 for his invention which altered the chemical properties of nets to prevent bycatch of cetaceans. Deserted Ocean discusses bycatch, overfishing and whaling and is the only book to publish the numbers of the top fishes harvested during 1,000 years of fishing in the North Atlantic. It proves that overfishing was widespread even when fishermen still relied on sail power.

In addition, issues that have appeared during the last 150 years are addressed: pollution, over-development of coastal areas, global warming and acidification. Details on how to order can be found at the end of the article.

Finally I would like to thank you all for your interest and support of the BCNN this year and indeed since it's beginnings in early 2006. I wish you all a safe, happy and relaxing festive season and look forward to sharing new bycatch mitigation developments throughout 2010.

Until the next issue in February, all the very best,

Emma Bradshaw – Editor (ejb@bigpond.net.au)

*Erratum*: The article in the previous issue (# 13, Aug-Sept 2009, page 9) entitled: False killer whale bycatch in the longline exclusion zone of the main Hawaiian Islands should have read: False killer whales in Hawaiian waters: bycatch in the long-line fishery and the long-line exclusion zone around the main Hawaiian Islands. Apologies to the Author Robin Baird of the Cascadia Research Collective for this error.

## Longline Terminal Gear Identification Guide

Steve Beverly, Secretariat of the Pacific Community, New Caledonia

This guide will help observers, researchers, and captains of longline boats to correctly identify hooks, swivels, trace lines and baits used in pelagic longline

Cefas

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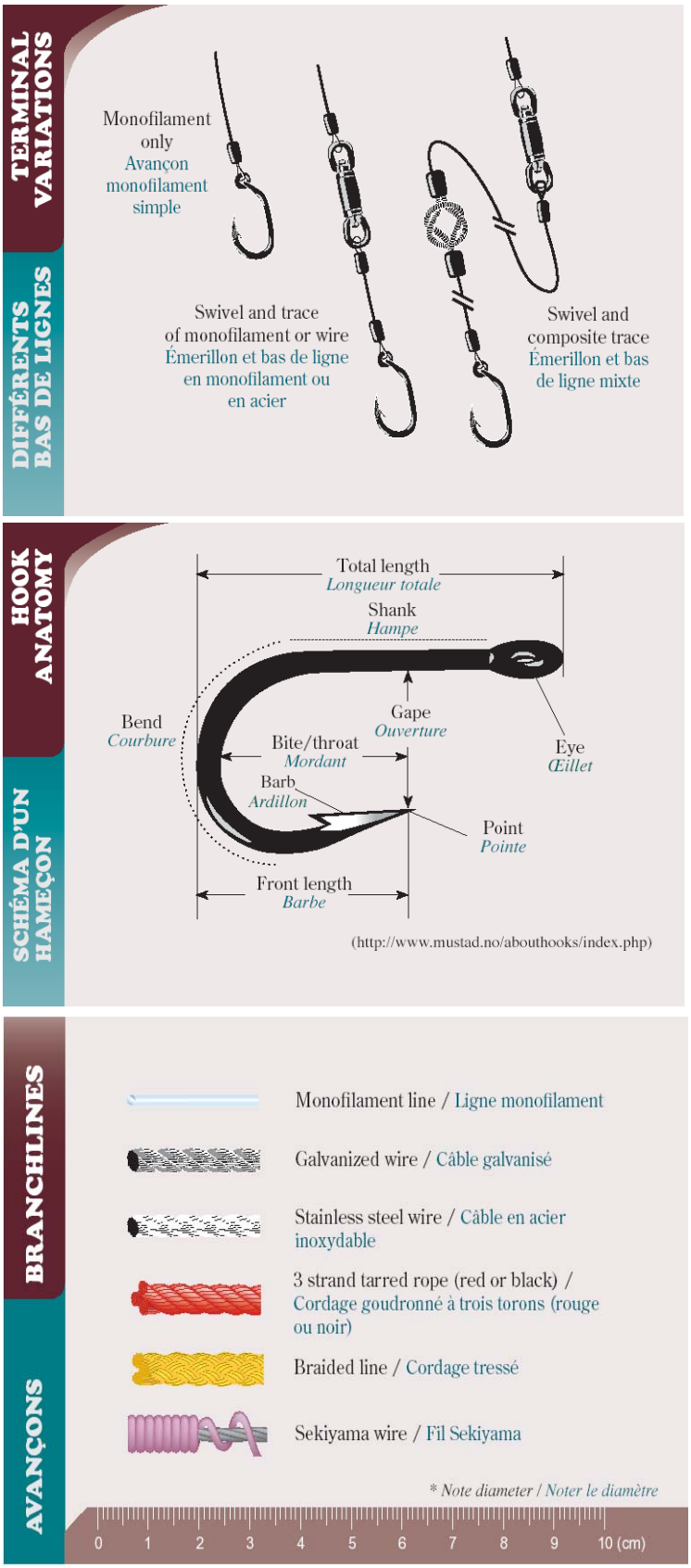


Examples of pages from the guide (not actual size). Hooks in the guide are shown true to size.

fishing. It is important that longline terminal gear is correctly identified as it has an effect, not only on target species catch rates, but on catch rates and post-release survival of bycatch species including marine turtles. The guide is divided into four sections: hooks used in longline fishing, swivels, trace lines, and baits (including lightsticks). Of these, the most important are longline hooks, as past and current research is showing that the use of large circle hooks reduces the catch rate of some bycatch species while improving (or not affecting) the catch of target species.

Circle hooks also improve the chances of post-capture survival of released bycatch species. Standardization of hook types and sizes is therefore very important for data recording and analysis for observer logsheets, wheelhouse logsheets, and for scientific studies on the effects of terminal gear on catch rates and post-capture survival. Japan tuna hooks and Teracima hooks are measured in 'sun', a Japanese measurement equivalent to just over three cm. This refers to the length of material in the hook from eye to point. Circle hooks and J hooks are sequentially numbered— the larger the number, the larger the hook— but circle hooks and J hooks with the same number are not the same size. Spanish hooks (a type of J hook) are numbered in a descending order—the larger the hook, the smaller the number.

The Guide is an outcome of the Pacific Islands Forum Fisheries Agency Action Plan for Sea Turtle Bycatch Mitigation (see BCCN Issue 11, Nov-Dec 2008, pp. 2-6).

To receive a copy of the Guide (available January) contact Steve Beverly at: steveb@spc.int.

# Illegal Fishers Escape the Spotlight

Andrew Darby, Environmental Reporter - Sydney Morning Herald Newspaper, Australia

The Australian Rudd Government has pulled plans to publicise the discovery of massive illegal fishing nets in the Antarctic while the ship that found them, Oceanic Viking, is under a different spotlight.

Bottom-set gillnets are presenting a new crisis in Australia's regional waters. Laid by foreign fishers, they form a ''curtain of death" on the deep-sea floor. But plans to expose the quantity of illegal nets found by the customs vessel on fisheries patrol have been sidelined.

Oceanic Viking found nets totalling 130 kms in length on Banzare Bank in the Southern Ocean earlier this year, sources told the "Herald" yesterday.

Use of the nets is outlawed by the 25-nation Commission for the Conservation of Antarctic Marine Living Resources, but rich pickings of Patagonian toothfish are leading illegal fishers to set them anyway.

The Government had planned to publicise the finds at a meeting of the commission in Hobart the week of Nov 2nd. But while the Oceanic Viking was caught up in Indonesia with Sri Lankan asylum seekers, the Opposition began to ask why it was not doing its fisheries job.

In April the vessel found nets of five to nine kms in length but did not have the gear to pull them up. So it called on a licensed fishing vessel nearby, owned by Austral Fisheries of Perth, which recovered 29 tonnes of toothfish, a bycatch of skate, and about 10 kms of net. The rest was ripped up and sunk.

Glenn Sant, the global marine program leader at TRAFFIC, a wildlife trade monitoring network, said the discovery was devastating for the marine environment in the commission area.

''These nets are actually an invisible curtain of death for everything that swims into them," he said. ''The nets kill indiscriminately, and if they are lost they keep killing as ghost nets."

A spokesman for the federal Fisheries Minister, Tony Burke, said he had no comment on the discovery, but the sources said a joint announcement by customs and the Australian Fisheries Management Authority was ready to be made the week of Nov 2nd.

The Opposition fisheries spokesman, Richard Colbeck, asked who was patrolling and protecting Australia's fisheries while Oceanic Viking was caught in the asylum seeker ''mess".

Mr Burke said Australian officials would take up with the European Union the discovery of Spanish fishermen in the Tasman Sea with the same type of nets.

The Spanish are exploiting a gap in the fisheries zone boundaries of Australia and New Zealand, where endangered sharks migrate. Nets have been set for two seasons, an environment assessment by the Spanish Government disclosed.

''As fish stocks are increasingly depleted worldwide, fleets such as Spain's are scanning the farthest seas for stocks left in unguarded patches," Mr Sant said.

A Spanish Government assessment concluded that the nets would have very low impact on deep water corals and sponges.

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# Field Testing of Barium Sulphate Gillnets to Reduce the Incidental Mortality of Franciscana Dolphin (*Pontoporia blainvillei*) in Argentina

Edward A. Trippel[1], Pablo Bordino[2], Norman L. Holy[3]
*(1) Fisheries and Oceans Canada, St. Andrews Biological Station, 531 Brandy Cove Rd., St. Andrews, NB, E5B 2L9, Canada; (2) AquaMarina - CECIM, Wildlife Trust, Artemisa 260, (7167) Pinamar, Argentina; (3) Better Gear, LLC, 4676 Harvest Lane, Bloomington, IN 47404, USA*

Incidental mortalities of Franciscana dolphin (*Pontoporia blainvillei*) in the artesanal demersal gillnet fishery of Argentina, Uruguay and Brazil have occurred with the onset of nylon gillnet fisheries several decades ago. Capture represents a major threat to the species survival, and the species is currently considered the most threatened cetacean in the South Western Atlantic. The objective of this study was to evaluate the efficacy of barium sulphate ($BaSO_4$) modified gillnets in reducing Franciscana dolphin bycatch. The area of fishing occurred within a few kilometres of the Argentine coast in the Bahia Samborombon, near to San Clemente del Tuyu. Water depth range was 3 to 7 m, and water was a murky gray colour with a Secchi disc < 1m. Field testing occurred from January to February, 2008 and November to March, 2009. Monofilament nylon gillnets containing $BaSO_4$ (6% by weight) were deployed and had a stretched mesh size of 110 mm and twine thickness of 0.6 mm. The twine was dyed grey to match the water colour. Nets were commonly set and retrieved within 13-24 hours by fishermen using small boats (length 5 to 7 m) launched from the beach. Two 50 m x 3 m net panels were attached to each other such that a single set was 300 $m^2$. Standard nylon nets from the same manufacturer using new mesh provided appropriate controls. Based on observer data, in the first year, a total of four and seven dolphins were caught in 55 sets of $BaSO_4$ and 57 sets of standard nylon gillnets, respectively and in the second year, 11 and 19 dolphins were caught in 198 sets of $BaSO_4$ and 211 sets of standard gillnets, respectively. Commercial fish catch rates were very similar among the two net types.

For more information contact Norm Holy at: Norman.Holy@bms.com.

# A Pilot Programme to Investigate Seabird Interactions with Paravanes and Develop First-Generation Mitigation Measures

Lee Benaka, NOAA, USA

In 2009, NOAA Fisheries Services's (NMFS) Alaska Fisheries Science Center received joint funding from the NMFS National Cooperative Research Program and NMFS Bycatch Reduction Engineering Program to conduct a pilot study on seabird interactions with paravanes. A paravane is a device that trawl operators use to obtain signals from net monitoring equipment. The paravane receives acoustic signals as it is deployed at five or more fathoms deep via a boom alongside the vessel. Because seabirds attend vessels to take advantage of fish discharge, they come into contact with various cables such as the trawl warps and third wire (a net-monitoring device hard-wired to the headrope). This pilot study (conducted on one boat, for one week, in one fishery), is the first work in the North Pacific on seabird-paravane interactions.

Project goals were to: (1) learn about the basic use of paravane gear, (2) obtain baseline information on seabird interactions with the paravane gear, and (3) attempt to develop and deploy at least three different types of mitigation measures. Industry partners included the North Pacific Fisheries Foundation and Cascade Fishing, Inc., owners of the fishing trawler *Seafisher*. This study was needed due to a potential for interactions between paravanes and the endangered short-tailed albatross (*Phobastria albatrus*).

A biologist experienced with seabird mitigation was deployed to the trawler *Seafisher* for one trip in August 2009. Cruise dates were August 8th – 16th. During this period, investigators were able to achieve all the stated goals of the pilot project. Data collection included basic layout of the ship, discard chutes, paravane boom and paravane deployment logistics and usage. To provide insight into seabird interactions levels, seabird abundance data were collected at various periods each day. Investigators made 20 observations of seabird/paravane interactions (without mitigation measures), which will provide baseline interaction rates for comparisons to rates when mitigation measures were deployed (Photo 1). The crew and biologist tried six different types of mitigation measures (Photo 2). The biologist was able to conduct another 20 observation periods of these measures. There were no seabird mortalities or injuries associated with the paravane during this trip. Interaction rates varied from 0-138 per 15 minute observation session. Nearly all interactions were by Northern Fulmars (*Fulmaris glacialis*), and interactions involved the paravane cable itself rather than the various lines supporting or controlling the paravane boom.

Photo 1: Field biologist Jeff Pesta conducting a seabird/paravane interaction session. The paravane cable runs down into the water from near the end of the boom (and back to the vessel under the boom). All other lines control the boom or are used to deploy and retrieve the block used to deploy the paravane. Very few interactions were recorded with these lines. Note the gull perched on the boom. © Todd Loomis, Cascade Fishing.

Photo 2: Crew members working on one of their ideas for a seabird mitigation measure before deploying the paravane. Collaboration between officers, crew, and the field biologist resulted in six different measures being developed and deployed. © Jeff Pesta, NMFS Alaska Fisheries Science Cente.

A cruise report will be prepared that provides details on the use of paravanes while fishing, types of mitigation gear attempted, and logistical limitations to consider for future studies. A procurement action is in process to support conducting an analysis of the data and producing a report on the pilot study that also provides recommendations for sample sizes needed to fully test mitigation measures in the future.

For more information, contact Shannon Fitzgerald (NMFS Alaska Fisheries Science Center) at: (Shannon.Fitzgerald.noaa.gov).

# Recent Bycatch Meeting Updates

Sebastian S. Uhlmann, University of New England, Australia

## Avoiding Bycatch and Discards: Progress and Challenges of Approaches and Analyses

Minutes from the bycatch and discards session at the ICES Annual Science Conference, 21-25 September 2009, Berlin, Germany

Approximately 650 scientists accepted the invitation of the International Council for the Exploration of the Sea (ICES) and attended the Annual Science Conference (ASC) from 21 – 25 September 2009 in Berlin, Germany. The ASC provided "*outstanding papers from world-renowned researchers presented in 19 science theme sessions"* ranging from climate impacts (theme sessions C, E, and F), environmental management and policy (session R), and interdisciplinary partnership initiatives (session O) to avoidance of bycatch and discards: technical measures, projects, and state of data (session M).

The bycatch and discards session was chaired by Lisa Borges (European Commission, Belgium), Dominic Rihan (Irish Seas Fisheries Board, Ireland) and Christopher Zimmermann (von Thünen Institute of Baltic Sea Fisheries, Germany). A total of 15 poster and 21 oral presentations were given which were divided into three blocks: (i) policy updates and management, (ii) modifications and (iii) analytical techniques and stock assessment models.

The session's synopsis can be found at:
http://www.ices.dk/iceswork/asc/2009/themesessions.asp
and titles/authors of presentations and posters are listed under:
http://www.ices.dk/iceswork/asc/2009/theme%20sessions/2009ThemeSessionTitles.pdf

## Bye, Bye Bycatch: Clearing up the Path for Better Protection of Marine Mammals in New Zealand

Leading law, policy and science experts gathered for a one day symposium in Wellington, New Zealand in November to discuss the best approaches on how to reduce bycatch of marine mammals in recreational and commercial fisheries.

"Protecting Marine Animals: A Law, Policy and Science Symposium" was held at the University of Otago Wellington Stadium Centre on Thursday November 19th. Participants in the public symposium explored future options for enhancing the protection of marine animals in New Zealand fisheries waters.

Speakers at the University of Otago-organised symposium included former Minister of Fisheries, the Hon. Jim Anderton, Green Party co-leader Metiria Turei and Raewyn Peart from the Environmental Defence Society.

Senior scientists from the University of Otago and the Department of Conservation presented recent research on the effects of fishing on marine animals, and examined existing bycatch law and policy.

According to Otago Zoology Associate Professor Liz Slooten: "dolphin, seal, sealion, albatross and petrel are just some of the marine species that are caught up in the New Zealand fishing industry's bycatch" and "for Hector's and Maui's dolphins – which are internationally recognised

as endangered and critically endangered respectively – set nets are the number one threat". The University of Otago's Research Cluster for Natural Resources Law held the symposium.

The programme can be viewed at: http://www.otago.ac.nz/law/nrl/marine/index.html

# Italy Condemned by European Court of Justice

Ilaria Ferri, Ente Nazionale Protezione Animali, Italy

In Rome on October 29th, Italy was condemned by the European Court of Justice for the use of pelagic driftnets which have been banned since January 1, 2002.

According to Ilaria Ferri, Scientific Director and International Campaigner of Ente Nazionale Protezione Animali "this sentence is the culmination of a successful battle by a group of animal rights associations and researchers including the Whale and Dolphin Conservation Society, Greenpeace and Oceanain in collaboration with our lawyer Valentina Stefutti". "The sentence confirms that Italy is responsible for allowing the use of illegal driftnets that capture over 80% of incidental species and cause the deaths of thousands of cetaceans and turtles every year. Our work has finally been rewarded, but we're just at the first step of victory. Now we hope that our Government will ensure the destruction of all illegal driftnets and withdraw the licenses of poachers".

Unfortunately, Italian citizen will pay again, for an absent government. Last July, the Undersecretary of the Ministry of Agriculture and Forestry, Mr Antonio Buonfiglio, was forced by the local Court of the Italian region Lazio (thanks to legal action by the associations) to withdraw his decree on the use of ferrettare (drift nets).

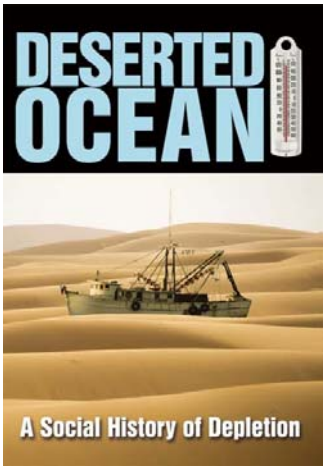
Continues Ferri "As citizens and environmentalists, not only have we already paid for the conversion plan of driftnets that wasn't applied, today we are again faced with the unacceptable activities of poachers and the poor policy of our Government that is absent if not perhaps an accomplice".

For more information contact Ilaria Ferri at: intotheblue@inwind.it.

# Deserted Ocean: A Social History of Depletion

Written by Norman Holy, Better Gear, USA

Norman Holy is the recipient of a "Smartgear" award from the World Wildlife Fund for inventing gear to mitigate the loss of dolphins, porpoises, and whales from gear used by commercial fishermen. He also received the Laureate Award from the Tech Museum (San Jose, CA) for inventing fishing gear for use in developing countries. He has over 80 publications and patents.




## Top 10 Take Aways from Deserted Ocean

1. 95-99 % of codfish, halibut, pollock, haddock, swordfish, bluefin tuna, mackerel, herring, salmon and turtles are gone from the North Atlantic;

2. Many coastal areas were overfished by 1900;

3. Worldwide, an area twice the size of the 48 US states is bottom trawled every year;

4 "Dead zones" occur during summers and one is the size of New Jersey;

5. Jellyfish are likely to be the major biomass in some areas by 2050. In the oceans, humans tax the ecosystem to the point of collapse;

6. Global warming is likely to mean an ice-free Arctic in summers by 2040 and oceans 50 inches (127 cm) higher by 2100;

7. Melting of methane clathrates, stoppage of ocean conveyor, or acidification all have the potential to cause extinction events for >50% of all current marine species;

8. The pH of the ocean is projected to go from 8.2 to 7.9 by 2050, thus terminating corals worldwide;

9. Ocean acidification is mostly a consequence of burning fossil fuels;

10. Marine biologists say that 450 ppm $CO_2$ is the threshold at which many ocean species die. We should reach 450 ppm in 20-30 years.

## Topics

No other book on overfishing describes the impact of fishing on whales, dolphins, and porpoises. The story of the North Atlantic is not limited to the effects of fishing and whaling; the modern threats of over-development of coastal regions, pollution, acidification, and global warming are issues that need addressing now to prevent a collapse of the ecosystem. The scientific case regarding long-term global weather patterns is made clearly and succinctly. Changes in governmental policies are needed if the oceans are to be saved. Practical suggestions are made regarding ways each of us, no matter where we live, can improve the oceans by choosing which fish to eat, and by reducing the impact of our daily lives upon the ocean.

## Expert Views

Professor Heike K. Lotze, Canada Research Chair in Marine Renewable Resources, Department of Biology, Dalhousie University: "There is much to learn about the ocean's past that can help us understand where we are today and manage for a better future. In this interesting and inspiring book, Norman Holy uncovers many stories untold that bring new light into the history of the sea."

Dr. Moira Brown, Senior Scientist, New England Aquarium: "Whale and fishing gear entanglements represent the struggle of finding a balance between the values of the fishery versus the risk of species extinction. Norm Holy attempts to find technological solutions that allow co-existence between humans and marine life."

## Sources

US and Canadian residents can obtain a copy from the book's official website: www.desertedocean.com. Deserted Ocean is also available from www.amazon.com and available to preview at: www.books.google.com.