The response to the Aug/Sept editorial regarding a lack of submissions has been overwhelming, with more articles received than can be published in a single issue. I would like to sincerely thank those members who forwarded material. Please note that if any of your articles do not appear in this issue, they will be included in the next, due out at the end of February '08.

This issue includes an overview of a new publication on bycatch reduction in the world's fisheries, details of the Fourth International Fishers Forum held in Costa Rica and an update on the projects of Birdlife’s International Albatross Task Force. The newsletter now also includes hyperlinks to associated web sites and PDF documents within articles (from opened articles, return to the Newsletter by clicking the “go to previous view” button on your toolbar).

As 2007 draws to a close, I would sincerely like to thank you for your continued support and also thank WWF US for it’s continued funding.

Wishing you all a safe, relaxed and happy Christmas season,

All the very personal and bycatch best for 2008,

Emma Bradshaw

Damage and Partitioned Mortality of Discards from Two Australian Penaeid Fishing Gears

Matt Broadhurst, New South Wales Department of Primary Industries, Australia

Over the past two decades, concerns over the mortality of discarded bycatch throughout New South Wales (NSW) fisheries (specifically estuarine) have resulted in considerable efforts to make fishing gears more selective; mostly via physical modifications (e.g. bycatch reduction devices – BRDs) that allow unwanted organisms to escape during fishing. In some cases, these sorts of modifications have reduced bycatch, including juveniles of commercially-important species, by up to 90%. Importantly, most of the escaping individuals have been demonstrated to survive the process. However, because bycatch can comprise 1000's of individuals per deployment, there still remains considerable discarding and unwanted fishing mortalities. Other management strategies, such as changes to operational and/or post-capture handling procedures, may be used to address this remaining component of discarded bycatch.
Our aims in this study were to i) quantify the mortality of unwanted fish discarded from estuarine prawn trawlers and seiners, and ii) examine the utility of modified operational and/or onboard handling procedures for maximising survival. During this work, we chartered a commercial prawn trawler and a seiner working in the Clarence River and Wallis Lake, respectively, and asked them to fish within their ranges of existing conventional methods. Some gear deployments were conducted over short durations (e.g. 30 minutes for trawls) and the catches quickly sorted in onboard water-filled trays. Other hauls were longer (up to one hour for trawls) and involved sorting the catch in dry trays. During sorting, we recorded any immediate mortalities and physical damage to the key bycatch species, and then released some of the live individuals into sea cages (moored close to the fishing area), where their survival was monitored for up to five days. For all experiments, wherever possible, appropriate numbers and sizes of control fish were collected using low-impact methods and similarly monitored.

During six experiments, we obtained estimates of the short-term mortality of small (< 30 cm total length) silver biddy, southern herring, yellowfin bream and tarwhine after being caught and discarded by the different gears. In general, irrespective of the fishing method, most silver biddy and southern herring were dead, or died immediately after being landed. But the economically-important yellowfin bream and tarwhine were more resilient with mortalities as low as three and 24%, respectively, depending on their treatment. Generally, irrespective of their onboard handling, those fish caught during short deployments had significantly less physical damage and a much greater chance of surviving, than those subjected to long deployments.

We conclude that simply reducing the duration of gear deployments would considerably mitigate the mortality of discards by trawlers and seiners. Further research is required to more closely examine the benefits of modifications to onboard handling procedures, such as quickly sorting catches in water, for further reducing the mortalities of the species examined.

For further information contact Matt Broadhurst, NSW Department of Primary Industries at: mbroadhurst@nmsc.edu.au.

ESR Theme Issue: Fisheries Bycatch: Problems and Solutions

Rebecca Lewison, Duke University, USA

Fisheries bycatch is an issue of global conservation concern that affects many species worldwide. Endangered Species Research (ESR), a growing conservation journal, is developing a theme issue on “Fisheries Bycatch: Problems and Solutions” for publication mid-2008. All material will be fully open access and thus a high level of visibility is ensured. This ESR theme issue was catalyzed by the ongoing work of Project GloBAL (Global Bycatch Assessment of Long Lived Species) that seeks to address this pressing conservation problem through innovative research approaches and collaborative efforts.

Manuscripts addressing current bycatch hotspots, analytical approaches to understanding and assessing bycatch, and bycatch solutions in both industrial and artisanal fisheries are welcomed.

To discuss the suitability of a manuscript for inclusion in this ESR Special, please contact Dr. Rebecca Lewison, Duke University (ESR Editor) rlewison@sciences.sdsu.edu or Dr. Brendan Godley, University of Exeter (ESR Editor-in-Chief) b.j.godley@ex.ac.uk.
The Fourth International Fishers Forum was held from 12-14 November in Puntarenas, Costa Rica. The Forum participants adopted the Puntarenas Declaration, to express their agreement and support for the implementation of eleven specific actions to improve the sustainability of artisanal and industrial fisheries, including addressing issues related to bycatch, allocation, fishing capacity, ecosystem-based approaches to fisheries management, illegal fishing, and compliance. The conference co-hosts were the Instituto Costarricense de Pesca y Acuicultura (Costa Rica Fisheries and Aquaculture Institute) and the Western Pacific Regional Fishery Management Council. Staff from IUCN (The World Conservation Union), the Inter-American Tropical Tuna Commission and World Wildlife Fund assisted the co-hosts with program development and convening the conference.

The international meeting of 250 fishermen, management authorities, seafood retail industry representatives, fishing technology experts, marine ecologists and fisheries scientists facilitated the sharing of information and experiences on sustainable fishery practices and approaches to minimize problematic interactions with sea turtles, seabirds, sharks and cetaceans in longline and gillnet fisheries. The Forum participants took an honest look at the state of our artisanal and industrial fisheries, exchanged ideas on how to improve them and committed to concrete follow-up actions. The Forum included a focus on management and sustainability issues faced by Latin American artisanal fishermen. A key outcome was the decision by artisanal fishermen to establish a new international fishery association to provide improved regional collaboration and coordination of Central and South America artisanal fishermen, including the adoption of a Code of Conduct for responsible longline fisheries.

The Forum was successful in facilitating the active exchange of wide-ranging perspectives and approaches for responsible longline and gillnet fisheries, including minimizing sea turtle, seabird, and marine mammal incidental catch, and ensuring that sharks and their relatives receive needed protection. Most importantly, the Forum identified gaps where priority international attention is warranted, and created new industry-to-industry collaborations to continue progress in resolving fisheries bycatch problems. A key outcome was the decision by participants from the Central American region to join efforts towards the exchange of legal, fishing and scientific information in regard to fisheries for highly migratory and trans-regional fishery resources. Both the Inter-American Tropical Tuna Commission and the Central American Aquaculture and Fishing sector Organization expressed their will to support this initiative.

Three previous International Fishers Forums were held in New Zealand, Hawaii and Japan over the past seven years. The Fishers Forum series has brought longline and now also gillnet fishers together to create synergies to improve the sustainability of their fisheries. It is truly heartening to welcome fishermen from Central and South America joining us in this endeavour.
Recalling that, over the past seven years, the International Fishers Forum (IFF) series has brought together large and diverse groups of fishermen and other interested persons who are united in the belief that conserving our fisheries and protecting our ocean environment are not mutually exclusive goals;

Recalling that the First International Fishers Forum held in New Zealand in the year 2000 focused on mitigating interactions between pelagic longline fisheries and seabirds, and that participants acknowledged that an integrated “bottom-up,” fishery-specific, and area-specific approach was required and that progress would be determined by individual fishermen’s own contribution within their own fisheries, regions or organizations;

Further recalling that at the Second International Fishers Forum, convened in Hawaii in 2002, the theme was expanded to include interactions between pelagic longline fisheries and sea turtles, and that a resulting Forum Resolution was agreed to which contained actions to promote involvement in the IFF initiatives by the Food and Agriculture Organization of the United Nations (FAO), the Convention on Migratory Species, relevant regional fisheries management organizations (RFMOs) and national agencies;

Further recalling that, at the Third International Fishers Forum which was held in 2005 in Japan jointly with the International Tuna Fishers Conference on Responsible Fisheries, the theme was expanded to include interactions of demersal longline fisheries with sharks as well as other non-target species, and to address marketing issues such as eco-labelling, and to consider the potential benefits of changes in fishing gear and techniques, resulting in the adoption of the 12-point Yokohama Declaration;

Having actively exchanged wide-ranging perspectives and approaches at the Fourth International Fishers Forum in Puntarenas, Costa Rica, November 12-15, to promote responsible pelagic and demersal longline fisheries and gillnet fisheries, and to minimize sea turtle, seabird, and marine mammal incidental catch;

Recognizing that additional information has been developed since IFF3 and presented at IFF4 that further demonstrates the need for and availability of measures to ensure maintenance of a healthy marine ecosystem that is necessary to support healthy fisheries;

Reiterating that continued increases in fishing capacity in the Pacific may be preventing the adoption of effective fishery control and management programs and that control of fishing capacity is critical to ensure economic health of all the fisheries that depend on the tuna and tuna-like species of the Pacific;

Noting that many members of RFMOs profess to support capacity management controls and the need to prevent increases in fishery capacity but do not demonstrate the political will to actually prevent capacity growth in fisheries for tuna and tuna-like species, especially with respect to large-scale purse seine fishing with fish aggregating devices that are known to have very large catches of juvenile yellowfin and bigeye tuna with consequent risk to the health of the stocks;

Noting further that, while the problem of illegal fishing (i.e., without requisite permits or licenses) may be diminished, there continues to be serious problems with unreported and unregulated
fishing which RFMOs and governments must resolve to ensure full consideration of the impacts of all fishing on the stocks of concern;

**Considering** that fair and equitable allocation schemes have not been developed by RFMOs and implemented by parties and cooperating non-parties that achieve fair sharing of available resources and protection of the interests of communities and small-scale fisheries with limited alternatives, and that all fishers must be provided information and opportunities to be part of the process when allocations are made;

**Acknowledging** that the concerns about the status of sea turtles and certain species of seabirds and about the possible negative effects of fishing on these populations are legitimate and warrant further consideration of measures to prevent or mitigate interactions with such species as well as measures to ensure that sensitive other species (such as some species of elasmobranchs) receive needed protection;

**Recognizing** that some species of sharks are especially vulnerable and are taken in substantial numbers by some fisheries such that their viability may be at risk, and that there is likely no ability to sustain the stocks by culture, and that there are inadequate data collection programs to ensure full records on the take and disposition of sharks caught incidentally in fisheries for tuna, swordfish and other species;

**Agreeing** that artisanal fisheries are important to the economy and culture of many communities but that artisanal fisheries also can have substantial impacts on both target stocks and related species of interest to fishers and societies of the Pacific;

**Recognizing** that RFMOs can make substantial contributions to the monitoring, assessment and management of artisanal fisheries, including documentation of catch, effort and bycatch, with the caveat that management of artisanal fisheries must be carried out in coordination with but not dominated by RFMOs, as monitoring and management of artisanal fisheries should be carried out at the local level to the extent practicable;

**Emphasizing** that measures and programs to prevent adverse impacts of bycatch and takes of sensitive species will be much more likely to be acceptable to and supported by fishers when they assure that the fishers will be no worse off while protection is provided to those sensitive species, and that measures must recognize and be tailored to the specific characteristics of the fishery involved;

**Aware** that the focus must be on solutions and collaboration rather than conflicts and confrontation and that effective programs and measures depend on engagement of the fishers in the development of programs and measures and the “buy in” by the fishers who will be affected by the measures and programs to reduce or prevent bycatch and interactions with sensitive species;

**Noting** that fishers, by virtue of experience on fishing grounds and their observations from that experience, have originated many effective measures to address bycatch problems and are ideally suited to provide expert advice about other potential solutions to bycatch problems and about the likely effects and effectiveness of bycatch reduction and sensitive species interactions, and that expert advice is critical to such measures and programs;

**Accepting** that there is a wide variety of “tools” (e.g., circle hooks, deep setting of gear, alternative baits) that have been tested and shown to have positive results, that are practical and effective, and that have been accepted in several fishing sectors and communities to reduce injury and mortality of sea turtles and seabirds taken in longline fisheries without reduction of the catch of target species;
We, fishers – from small-scale domestic commercial and artisanal fisheries to modern industrialized fleets – participating in the Fourth International Fishers Forum, do declare that we agree to carry out and support the following actions:

1. Promote and carry out collaboration among and between all involved sectors – artisanal and small and large scale fisheries and support industries, local and national governments, and regional fishery management organisations, and educational and non-government entities to define and identify problems of bycatch; to develop, test and refine bycatch prevention and mitigation measures and strategies, with market incentives where practicable, and are found to balance maintenance of fisheries’ values and protection of sensitive species;

2. Continue to support entities that promote and achieve programs to prevent any net increases in capacity in fisheries for tuna and tuna-like species, except to the extent that such capacity growth is consistent with a capacity management plan of regional fishery management organisations or nations and with the International Plan of Action for Management of Fishery Capacity;

3. Establish mechanisms to facilitate the compilation and distribution of information documenting sound scientific research and fishery experiments that seek to identify effective and commercially viable solutions to bycatch of sensitive species groups in coastal gillnet and longline fisheries, with the aim of aiding the development of and implementing such solutions at the local and fishery specific level to the extent practicable;

4. Establish a mechanism whereby the artisanal fishery interests of Central and South America can collaborate and coordinate to:
   - Develop programs to use a subregional approach to achieve effective and coordinated management of fisheries for widely distributed species (e.g., dorado) not subject to conservation and management measures of RFMOs;
   - Develop education programs to ensure that artisanal fishers are aware of the impacts of their fishing on the stocks and associated resources and are able to make factually based recommendations for measures that will enhance their fisheries while ensuring their sustainability and minimizing or preventing bycatch;
   - Establish a Code of Conduct for artisanal fisheries;
   - Address activities that affect coastal fishery resources and their habitat with potential adverse effects on the productivity and sustainability of the fisheries that are dependent on those coastal resources;
   - Promote fishery conservation and management measures that recognize the importance of coastal artisanal fisheries to local economies and cultures (e.g., area management to ensure that small artisanal fisheries are not adversely affected by industrial fisheries, or area management to separate competing gears);
   - Maximize local benefits from large scale commercial fisheries to the extent practicable.

5. Responsible participants from highly migratory and trans-regional fisheries resources management institutions of the Central American region, express their willingness to join efforts towards the exchange of legal, fishing and scientific information in regard to these fisheries, with the purpose of achieving preservation, handling and use of sustainable pelagic longline
fisheries. Both, the Inter-American Tropical Tuna Commission (IATTC) as well as the Central American Aquaculture and Fishing Sector Organization (OSPESCA), express their willingness to support this initiative.

6. Support actions by RFMOs, nations and other entities to continue and to expand research and experiments for developing and testing additional measures to prevent and minimize incidental catch of sea turtles, seabirds, sharks and other sensitive species in longline and gillnet fisheries and to ensure that reports on the results of such research and experiments be provided to all interested parties quickly through the internet and other mechanisms.

7. Collaborate with governments and RFMOs to ensure adequate collection and analysis of catch and effort data relating to shark fisheries and incidental shark catches in longline and gillnet fisheries and to facilitate incorporation and use of those statistics in assessing the condition of shark stocks and the effects of harvests on those stocks.

8. Urge our governments and other interested parties to support implementation of the actions agreed to at the Joint Meeting of Tuna RFMOs that was held in Japan in early 2007, including performance reviews to evaluate the effects and effectiveness of the RFMOs against common benchmarks, and to report the results of those evaluations;

9. Participate in the review and evaluation of the effectiveness of actions taken by nations and RFMOs to minimize or mitigate the takes of seabirds in longline fisheries and recommend additional actions as necessary with respect to the collection of scientific data (including observer data whenever feasible), the development and implementation of practical measures for monitoring incidental catch including (including where feasible the introduction of non-invasive electronic observer techniques), and the development and use of technology to reduce incidental catch and improve post-release survival rates for sea turtles;

10. Assist as practicable to compile and distribute information about commercially viable methods to reduce or prevent cetacean interactions in longline and gillnet fisheries for tuna and tuna-like species;

11. Work with RFMOs, governments, and other interested parties to use all available organizational resources to ensure that the best scientific information available is widely disseminated and usable to support ecosystem-based management and to minimize the potential for regulatory actions that are based on biased and unscientific assertions accusations that attack environmentally responsible tuna fisheries;

12. Support actions to ensure full and fair compliance with conservation and management measures adopted at local, national and regional levels to maintain sustainable fisheries and protect sensitive species, including requirements for parties and cooperating non-parties to RFMOs to report on their actions to implement RFMO recommendations and on the results of their investigations and prosecutions of violations of those measures by fishers from those parties and cooperating non-parties;

We will transmit this declaration to the Secretary-General of the United Nations, the Director-General of the Food and Agriculture Organization of the United Nations and relevant RFMOs for their consideration, and we will request that Governments, including the Governments of Japan, Central and South American countries, the United States, and the European Union support fishers worldwide to implement this declaration.

For more information contact Eric Gilman, Global Marine Programme, IUCN at: eric.gilman@iucn.org.
BirdLife International’s Albatross Task Force – Update

Andy Black, BirdLife Global Seabird Program, UK

The Albatross Task Force is the world’s international team of bycatch mitigation instructors and was established to meet an urgent need for skilled practitioners to work on ‘grass roots’ projects with fishers on-shore and at-sea. The Instructors will conduct workshops and fishing trips to train fisheries managers and fishers on the need for, effectiveness of, and ease of adopting a range of best practice mitigation measures that once deployed, rapidly reduce seabird mortality levels.

Since the initiation of the Albatross Task Force (ATF) in March 2006 (see Issue one of the Bycatch Communication Network Newsletter), there has been considerable progress. ATF chapters are now operating in three countries; South Africa, Brazil and Chile, employing eight observers. The project will expand further in the coming months to cover Uruguay, Namibia and Argentina.

South Africa

The project commenced in South Africa in March 2006 and currently employs three observers. In the first 18 months, the team collected baseline bycatch data in their target fisheries and trained fishermen, fisheries observers and Compliance Officers in seabird mitigation best practices. Additionally, the ATF has influenced the drafting of new mitigation regulations in South African longline and trawl fisheries. The ATF has worked in all three of the major fishing fleets; pelagic and demersal longline and trawl fisheries, the key actions in each are listed below.

Pelagic Longline Fishery

The pelagic fleet consists of a mixture of South African and foreign flagged (Asian) vessels. Vessels are licensed in accordance with their target species. Currently, 30 licenses are issued to target tuna (yellowfin Thunnus albacares, bigeye T. obesus and albacore tunas T. alalunga) and 20 directed at swordfish (Xiphias gladius), although not all are active. Thus far, 25 of these vessels have been visited and supplied with tori lines.

The baseline mortality rate calculated for the 2006/07 season was 0.34 birds/1,000 hooks. Despite a range of mitigation measures already written into the fishing regulations, compliance is low, resulting in this high level of mortality. The awareness and education work of the ATF is leading to greater uptake of mitigation measures within the fleet and should result in lower bycatch rates.

Demersal Longline Fishery

The predominantly South African flagged demersal longline fleet target hake (Merluccius capensis and M. paradoxus). During the 2006/07 season, data collected by the ATF lead to an estimated mortality rate of 0.004 birds/1,000 hooks. This meets the target set in the National Plan of Action, however, this data was collected under ideal conditions with all mitigation measures strictly followed. This figure illustrates that it is possible to fish with demersal longlines without impacting seabird populations but is unlikely to reflect the bycatch rate in the wider fleet. Increased awareness and monitoring of the fleet is needed to ensure best practice is adopted by all vessels.
Hake Trawl Fishery

Observations by the ATF produced an alarmingly high estimate of seabird mortality, 18,000 seabirds (70% of which were albatross) in the 2005/06 season. Of these, 85% were estimated to have been killed by warp strike and 15% by net entanglement. As a result of these bycatch estimates, the Task Force (Barry Watkins) has worked in the fleet to trial and design the most effective tori line to reduce mortality as quickly as possible. The Task Force has also worked through government channels to lobby for the mandatory use of tori lines and prohibition of offal discharge during net shooting operations. These license restrictions came into force in July 2006. Since this time, the ATF has distributed 100 pairs of tori lines to the fleet and placed considerable effort into estimating annual bycatch with mitigation measures in place. An important follow-up of this work has been the training of Compliance Officers to ensure these measures are followed.

Training: Fisheries Observers and Compliance Officers

It has always been the intention of the ATF to transfer their skills and knowledge to the governmental fisheries management bodies. To build these links and the government support required to ensure an understanding of the need for mitigation measures, and to enforce compliance with these measures, the team has placed considerable effort into training Fisheries Officers (FO), and particularly Compliance Officers (CO). Training courses held in South Africa have been attended by 27 FO and 34 CO. The level of support from the Department of Marine and Coastal Management has been extremely encouraging.

In March 2007, a government CO issued the first infringement notice and fine to a hake longliner for failing to have a set of tori lines onboard during a port inspection. This was a significant outcome as it was a direct result of a training workshop held by the ATF team and COs. There is obviously considerable work to be done to ensure all COs are proactive in terms of mitigation requirements, and that the correct deployment of tori lines (not just their presence onboard) becomes a mandatory requirement, but this was a significant step in the right direction.

Brazil

The ATF team in Brazil of two observers, is working with the national pelagic longline fleet, which is composed of 32 vessels based at Santos in the south, Itajaí and Rio Grande harbours on the central coasts. The fishing ground varies from 20oS - 35oS but during the winter months when the greatest number of non-breeding albatrosses and petrels forage in Brazilian waters, there is a strong concentration of fishing effort at the extreme south of the country.

Pelagic Longline Fisheries

Vessels in the Brazilian fleets use two types of gear; light ‘surface’ longline gear, typically target a combination of swordfish, yellowfin tuna and sharks, and deep set gear, targeting Atlantic albacore and bigeye tuna.

The first six months of the project (September 2006-March 2007) were spent strengthening links, particularly in Itajaí, which is a relatively new port/fleet in terms of seabird bycatch reduction efforts. There are around 20 vessels operating from this port and the Task Force conducted at-sea trips on 10 of these and in total have had direct contact with around 70% of the fleet. In addition, between October and November 2006, initial contact was made with 13 vessels from the Itaipava region, which operate with surface longlines targeting tuna and dolphinfish (Coryphaena hippurus), and use the harbour of Itajaí to land their catch.
At-Sea Effort

During 12 cruises conducted by ATF instructors and Projeto Albatroz\(^1\) 105 seabird mortalities were recorded. These consisted of 64 black-browed albatrosses (*Thalassarche melanophrys*, 0.47 birds/1,000 hooks) and 41 white-chinned petrels (*Procellaria aequinoctialis*, 0.30 birds/1,000 hooks). Another 36 seabirds were independently returned ashore by the fishing vessels, these predominantly consisted of wandering albatross (*Diomedea exulans*), Tristan albatross (*D. dabbenena*), black-browed albatross, Atlantic yellow-nosed albatross (*T. chlororhynchos*), spectacled petrel (*P. conspicillata*) and white-chinned petrel. In addition to these returned birds, skippers and fishermen reported the capture of another 177 unidentified seabirds.

Uptake of Mitigation Measures

In line with the Brazil NPOA (National Plan of Action)-Seabirds, the focus of the Task Force in terms of mitigation research and uptake has been on tori lines and blue-dyed bait. Before the Task Force commenced work in Brazil, only one of the 32 vessels in the fleet used these mitigation measures and after a 12-month period, 16 vessels (50% of the fleet) voluntarily used tori lines as standard. This result far exceeded the expectations of the team in Brazil and is an important precursor to having mitigation measures written into local regulations.

Legislative Developments

Possibly the most important achievement of Projeto Albatroz and the ATF in the last 12 months has been the drafting of a regulation in accordance with the Brazilian NPOA-Seabirds for the mandatory adoption of mitigation measures. This draft is currently being considered by Brazilian environmental authorities, including Ibama (Brazilian Institute of Environment and Natural Renewable Resources) and SEAP (Special Secretariat of Aquiculture and Fisheries of the Presidency of the Republic). The regulation will require the mandatory use of tori lines combined with at least one additional measure (night setting and/or blue dye baits) for vessels operating south of the Latitude 20°S, between May – November and during the full year for vessels operating south of the 28°S. The distributions of many albatross and petrel species from South Georgia, the Falkland Islands and Tristan da Cunha overlap with these areas.

Chile

In March 2007, we employed three instructors in Chile, two (one full-time, one half-time) working in the swordfish fishery that operates around the Juan Fernández Archipelago, based in the port of Coquimbo. Currently there is only anecdotal reports of bycatch available from this fishery. However, given the significant overlap with the foraging range of black-browed albatross from Chile and Salvin’s (*Thalassarche salvinii*) and Buller’s (*T. bulleri*) albatrosses from New Zealand, amongst a range of other species, it is vital that the level of seabird bycatch in this fishery is quantified as appropriate mitigation measures are introduced, in line with the draft NPOA-Seabirds for Chile.

Pelagic Swordfish Fisheries

The first two sea trips in this fishery have revealed far higher levels of seabird (primarily albatross) bycatch than expected. The AFT will continue to collect baseline data to quantify the scale of seabird bycatch in these fisheries and develop effective mitigation measures.

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\(^{1}\) In addition to coverage achieved by ATF instructors, Projeto Albatroz (a Brazilian NGO) have observers funded by other means. The results of this additional effort compliments and strengthens the work of the Task Force in Brazil.
Demersal Longline Fisheries

In addition, one half-time post is based with Professor Carlos Moreno in Valdivia, to work with the demersal fleet and focus on the production of education materials for the key Chilean fleets. The Chile team are managed by Carlos and Rodrigo Hucke-Gaete (Centro Ballena Azul a Chilean NGO).

The ATF is currently undergoing a rapid phase of expansion with chapters in Argentina, Uruguay and Namibia all likely to come on-line in the coming months. In order to manage this ever growing team, a dedicated Task Force co-ordinator was recently employed. The Coordinator will be required to facilitate communication across the project and assist in the development of systems and structures required to ensure an integrated and effective project that incorporates and maximises the strengths of ATF in-country project leaders and instructors.

We are excited about the results achieved thus far, and having now completed developing much of the strategic planning and infrastructure that such a complex multi-national project requires, we can focus on the expansion of the project in South America and southern Africa and delivering action where it matters most…at the stern of the vessels! The ATF is already taking tangible steps to halting the decline of albatrosses and petrels by working with fishermen and governments to erase the world’s bycatch ‘hotspots’.

We encourage you to follow the progress of the ATF via diaries and news stories on our website www.savethealbatross.net.

For more information contact Andy Black, BirdLife Global Seabird Program at: Andrew.Black@rspb.org.uk.

Publication - Bycatch Reduction in the World’s Fisheries

Edited by Dr Steven J. Kennelly, Chief Scientist and Director of Systems Research, New South Wales Department of Primary Industries, Australia.

This book encompasses the work of several of the world’s leading experts in bycatch reduction. It comes after several decades of outstanding and very successful research that has helped ameliorate one of the most important and controversial fisheries issues in the world – the unwanted waste associated with fisheries bycatch.

The chapters take the reader through most aspects of the field of bycatch reduction at a variety of scales and viewpoints. They examine the methodologies used to develop bycatch reduction techniques and provide new avenues for assisting and broadening such work. Case studies throughout the book encompass most of the world’s fishing techniques and regions and two chapters examine the developments that have occurred in the US and Europe, where the world’s largest fisheries (and many of the most significant bycatch problems) occur.

Solutions developed for the most problematic fishing methods in terms of bycatch, selectivity and habitat damage (trawling and dredging) are examined in significant detail as well as ways to reduce the bycatch of charismatic species such as marine mammals and seabirds. Bycatch reduction in less infamous fishing methods is also examined with chapters on recreational fishing and trapping. The book also focuses on how the lessons learned in reducing bycatch can be applied to ameliorate emerging, broader issues concerning the impacts of fishing on
Several recent reviews of bycatch mitigation measures have demonstrated reductions achieved through modifications of fishing gear and techniques (Bull 2007; Gilman et al. 2005). Similarly, avoidance techniques can also substantially reduce bycatch. For instance, communication networks among fishermen allow them to respond rapidly to avoid high encounter rates on the water (Gilman et al. 2006). However, even in the most responsibly managed fisheries, bycatch still occurs. Despite stringent adherence to rigorous bycatch reduction measures, the CCAMLR (Commission for the Conservation of Antarctic Marine Resources) toothfish fishery (outside of the French EEZ) caught an estimated 1 two seabirds during the 2003 fishing season (CCAMLR 2006). While this take may be reduced further with time, it will likely be increasingly difficult to eliminate these final few rare events. Yet it would be possible for the fishery to have no impact on albatross, at least on a net basis, if the fishery were to offset the albatross they did catch by funding conservation interventions to reduce other sources of mortality. We recently published an essay examining the potential of biodiversity offsets for bycatch, with a hypothetical worked example for a shearwater species caught in the Australian tuna fishery (Wilcox and Donlan 2007). Here we provide some background on the discussion that has emerged from this initial paper, with web links to relevant publications.

If fisheries managers and other stakeholders move to a bycatch management framework that integrates offsets along with existing avoidance and mitigation measures, many responsibly managed fisheries could potentially reach the goal of being bycatch-neutral. In such a framework the first priority would be to avoid bycatch. If avoiding interactions is prohibitive, for instance in cases where seabirds are unpredictably distributed, fishing practice and gear modifications to mitigate bycatch would be the next priority. With these measures in place, any residual bycatch and other accidental interactions could be offset. Other sectors such as the mining industry have begun to embrace the avoid, mitigate, offset hierarchy from the Convention on Biological Diversity, and are setting goals of net-positive biodiversity impacts (Kate et al. 2004; Slootweg et al. 2006).

This integrated approach of avoidance, mitigation and offsets has implications beyond achieving zero net impact fisheries, particularly in international fisheries. Under this framework, responsibly managed fisheries would be able to continue operations, even in the face of rare unfortunate bycatch incidents. Contrast this with an alternative scenario: a responsibly managed fishery is

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1 One bird was observed, but in only half of the fishing effort, hence an estimated two birds were caught.
closed by its national government and less responsible operators move in to exploit the market that has become available. When the U.S. Hawaiian swordfish fishery was closed due to turtle interactions this appears to have happened, relatively unregulated distant water fishing nation fleets moved in to fill the market demand for swordfish (Sarmiento 2006). In the end it’s quite possible that this outcome was worse for the turtles.

Clearly there are a number of issues involved in incorporating offsets into fisheries management structures. Responses to our initial article by Doak et al. (2007) and Priddel (2007) and our subsequent replies, highlight some concerns with the approach. However, a critical issue not addressed by either response is the need to ensure that fisheries follow best practices for bycatch management. Offsets should be integrated with avoidance and mitigation measures, rather than just allowing fishers to “buy out” their responsibility for bycatch (Donlan & Wilcox in press). As with many fisheries problems, the primary issue with bycatch management is a lack of governance. In the context of good fisheries governance through national agencies and effective regional fisheries management organizations, the maintenance of a culture of best practices would be straightforward, and offsets could be integrated to address residual impacts. Incentives may even exist which encourage industry to adopt voluntary offset programs, over and above those imposed by regulations (Donlan & Wilcox in press).

Other issues include costs and the need for precaution in implementation. Offsets will require monitoring and auditing, potentially increasing operating costs. However, the expense of monitoring is inescapable in a well managed fishery, irrespective of how bycatch is addressed. Trading future offsets for current impacts will require a precautionary approach. However, these issues are likely resolvable, and experience in the application of offsets in other sectors can provide guidance in achieving successful implementation.

The environmental community has made great strides in bringing attention to the impact of fisheries bycatch. Fishers, technologists and scientists in turn have taken this momentum and translated it into fishing method innovations, reducing bycatch substantially. However, if industrial fisheries are to have a zero impact policy, as is the case in Australia, it is important that we allow them to use the full suite of cost-effective tools available, in a responsible and integrated manner. For more information on this developing body of work, see www.advancedconservation.org.

**Literature Cited**


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Improving the Sustainable Livelihood of Fishermen and Conservation of Marine Biodiversity Through the Reduction of Sea Turtle Bycatch in Commercial Fisheries, Sabah, Malaysia.

Nicolas Pilcher, Marine Research Foundation (MRF), Malaysia

Project Background

The primary goals of this project are to improve the sustainable livelihoods and build the capacity of the local fisherfolk communities to enable them to i) undertake much more sustainable fishing efforts, particularly among the local communities operating out of Sandakan, Sabah, Malaysia, and to ii) reduce the loss of marine biodiversity, especially of the green turtle *Chelonia mydas*, listed as Endangered by the IUCN Red List. The project will demonstrate the impact of commercial trawling on adult and juvenile endangered sea turtle populations off the east coast of Borneo, and it will also determine the potential impacts on marine diversity and on the sustainable livelihoods of local fisherfolk communities, while developing potential mitigation options at the operational and management levels.

This project was developed in partnership with the Sabah Department of Fisheries and will provide the data upon which Government can base further fishery practice controls to conserve marine turtles, be it through the use of excluder devices, or possibly seasonal and/or temporal closures. The project is the first of its kind to receive the support of the Malaysian Fisheries Department as a first step in determining 1) the level of bycatch and 2) the opportunities for introducing TEDs on a voluntary basis initially, and subsequently as a Government mandate.

This pilot project plan was developed to evaluate the use of TEDs in Sabah, Malaysia as a result of: i) the outcome of the WTO trade issues and the US requirements for compliance with P.L. 101-162 with regard to turtle excluder devices and shrimp trawling operations and ii) in keeping with Malaysia’s willingness to conserve turtles, as evidenced by its participation in the ASEAN Memorandum of Understanding on Sea Turtle Conservation and its key role in discussions to develop a Regional Agreement.

The plan was formulated between the Sabah State Department of Fisheries and the Marine Research Foundation (MRF), to carry out a pilot project to evaluate the effects of TEDs installed on Malaysian trawlers on catch, bycatch reduction and turtle conservation, and to investigate the obstacles that might arise in the use, and enforcement of their use in Sabah trawl fisheries. Sabah was chosen for its significant trawler industry and the fact that nothing is known of the magnitude of these trawler fleet’s impacts on turtle mortality.

Progress

Field activities began following the opening of the fishing season in March-April ‘07. Following the establishment of formal links between the MRF, the Sabah Fisheries Department and specific
fishers and owners of vessels or processing plants, the project conducted training workshop with the assistance of NOAA/NMFS (National Marine Fisheries Service) scientists and TEDs specialists, contracted out the construction of the TEDs and purchased GPS locators for observers. The project also designed standardised data sheets for on-board observers with input from the fishing community and NOAA/NMFS specialists. The project continued to build and strengthen linkages between the Fisheries Department, the fishing community, and the MRF.

A training workshop was conducted in Sandakan in June ‘07 after lengthy logistics and scheduling arrangements with the NOAA/NMFS specialists. A morning lecture (translated into Cantonese and Malay by interns working at MRF from Universiti Malaysia Sabah – UMS) established the history and basic operation of the TED, and allowed a hands-on appreciation of the TED and how it operates.

Following the lecture and discussion session, the group viewed an on-board demonstration of the ease of installation of one of the pre-installed units brought by the NOAA/NMFS team. Working hand-in-hand with local net makers, the NMFS fishing specialist sewed the TED into the Sabah trawler net in less than an hour and the group then tested its retrieval into the net roller. The group then learnt how to install the actual TED frame into a net cylinder complete with flap, for subsequent installation in trawl nets.

Over 30 local fishermen, crew, local net makers, representatives of the Sabah Fisheries Department (Sandakan) and several owners of fishing vessels and fish and shrimp processing plants attended the workshop.

The next day, two vessels were provided for field trials, one to operate with a TED installed and the other without. The day was spent off the coast of Sandakan deploying and retrieving the nets while running trawls in parallel, to identify any major catch loss issues. None were found, with the vessel owner visibly impressed.

The final phase of the training consisted of an evening reunion with a wider representation of the fishing community at a dinner hosted by the Fishing Cooperative, Hai Leng Enterprise and MRF. Over 150 fishermen, crew and families attended, at which the NOAA/NMFS specialists repeated an overview of the operation and advantages of the TEDs and potential scenarios for subsequent certification of Sabah shrimp exports.

One further sew-in demonstration for local net makers was held the following day to reiterate installation techniques with regard to deployment angles, flap opening size and rigging, knot alignment, and various other technical aspects of the sleeve construction. The workshop was considered extremely successful, and at the closing dinner, the fishing community representatives expressed their eagerness to begin trials and subsequent permanent use. The trawl fishing fleet of Sandakan is unique. It has incorporated net reels into its shrimp trawl storage. This is common in most single trawl operations but usually single trawl nets have top and bottom legs coming together to a single point that is then attached to a bridle that splits into two chains which run to the top and bottom of a door. At this attachment point a split link

Nick Pilcher from NOAA works with local fishers to install a TED on a shrimp trawler © M. Ruf, MRF.
or G-hook and an idler wire is used to bypass the cable that hooks the door directly to the net. The idler wire can be easily detached from the door and fastened to the net reel. As the net reel takes in the chain, tension is taken off the in-line door to net hook up. The net transfers its weight to the net reel and the door can now be detached and the net pulled onto the net reel.

In Sandakan, the top and bottom legs are attached to the doors directly with split links. Without the bypass chain to take the load off the split links the boat must fall out of gear long enough for the deckhand to detach the net from the door and hook it up to the net reel. At this time the net is resting on the bottom so this practice is limited to shallow water with minimal tidal influence. Net reels have been problematic in a number of fisheries attempting to incorporate a grid into their gear. The reel we worked with had a 20 cm (8 in) diameter by 1.8 m (6 ft) long shaft with 30 cm (12 in) flanges, framed 1.8 m off the deck. Initially it appeared the net reel support would not allow the grid to fit. Once the gear was set and the strain of hauling in was applied, with the concave side of the grid facing the reel, the net equipped with a midsized super shooter TED fit well.

The observer trials were underway by the first week of September using observers from the Department of Fisheries Sabah, ex-UMS intern students at MRF, youth group volunteers from WWF and the Federal Department of Fisheries. This phase will represent the last of the fieldwork for this project. The following progress report will provide updates on the results of the observer trials. Updates on the effectiveness and difficulties encountered with the TEDs will be provided in future reports.

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STOP THE ALBATROSS SLAUGHTER

Kevin Hackwell, Royal New Zealand Forest & Bird Protection Society

A Chatham albatross in flight is a magnificent sight. With more than twice the wingspan of New Zealand’s common black-backed gulls, the Chatham albatross glides at more than 80kph, yet seemingly exerts only infinitesimal effort to achieve these enormous speeds.

Even in the buffeting gale force winds of the sub-Antarctic, these birds wheel and soar with incredible grace and elegance just centimetres above the giant ocean swells, swooping in with pinpoint accuracy to seize their fish meals.

Unfortunately, the Chatham albatrosses seen in photographs taken by Ministry of Fisheries observers on board a fishing boat on the Chatham Rise east of New Zealand this month were a much sadder sight.
Twelve critically endangered Chatham albatrosses (along with 22 vulnerable Salvin’s albatrosses) were caught and killed by the long-lining vessel. Sprawled lifeless on the boat’s deck, with fish hooks piercing their bright yellow bills, these glorious birds had come to a sad, cruel and needless death.

The deaths were all the more tragic because, like so many other seabird bycatch deaths, they could easily have been avoided.

This most recent mass killing of the Chatham and Salvin’s albatrosses was far from the first to occur in New Zealand waters. Some of the worst recent cases include:

- More than 300 threatened white-chinned petrels caught by a bottom longlining vessel fishing for ling on the Chatham Rise in December 2001;
- 90 seabirds, mostly threatened white-capped albatrosses caught by two trawl vessels fishing for squid around the Auckland Islands in May 2005;
- 51 threatened antipodean albatrosses and seven white-chinned petrels caught by a surface longline vessel fishing for swordfish in the Kermadec region in November 2006;
- Seven further antipodean albatrosses caught by a surface longline vessel fishing for swordfish in the Kermadec region in November 2006.

The common factor in all these incidents was that none of the vessels were following voluntary codes of practice on measures to reduce seabird captures, which were introduced following the 300 white-chinned petrel kill in 2001.

We know that a combination of mitigation measures is highly effective in reducing seabird deaths in fisheries, yet New Zealand does not legally require all fishing vessels fishing in our Exclusive Economic Zone (EEZ) to employ mitigation measures.

Although many vessels have voluntarily adopted mitigation measures, others are taking no action to guard against seabird deaths. Only some fisheries in certain areas are required by law to use mitigation measures, these requirements are not comprehensive enough to stop the seabird slaughter.

It has been clearly demonstrated overseas that introducing mandatory requirements for a comprehensive range of mitigation measures prevents seabird bycatch.

The internationally recognised best practice in mitigation measures is the Convention of Antarctic Marine Living Resources (CCAMLR) model, which has reduced seabird bycatch to nearly 100% in 10 years (from around 6,500 deaths in 1996 to just two in 2006).

Effective measures are well known, and include:

- Banning discharge of offal (which attracts seabirds) from fish processing while boats are fishing;
- Using bird-scaring streamers to distract seabirds away from hooks;
- Fishing at night, when most albatrosses are less active;
- Weighting fishing lines so they sink faster, quickly sinking the hooks out of the birds’ reach.
Without regulation and independent monitoring to ensure such measures are used across the fishing fleet in New Zealand waters, seabird deaths continue unabated.

We don’t know exactly how many seabirds are being killed in New Zealand fisheries, largely because there are so few observers stationed on fishing boats. Observer coverage in New Zealand fisheries in 2004 was less than 5% of all fishing activity in surface longline, bottom longline and trawl fisheries.

The single analysis commissioned by the Ministry of Fisheries estimated that somewhere between 3,000 and 11,000 birds were killed each year in these fisheries. However, many more seabirds are killed than just those brought on board dead, so the official death rate is likely to be grossly underestimated.

When the birds being killed are critically endangered species such as the Chatham albatrosses, those deaths can have serious implications for the survival of the species. The Chatham albatross is in a higher threat category than the mountain gorilla and giant panda – and in the same threat category as the kakapo. The ancient, flightless Kakapo is the world’s rarest and strangest parrot. It is the only flightless and nocturnal parrot, as well as being the heaviest in the world, weighing up to 3.5 kgs (8 lbs). The next category down from its “critically endangered” status is “extinct in the wild.” A dozen deaths of this species in a single event are a serious threat to the conservation of the species, raising its risk of extinction.

Albatrosses are the group of birds experiencing the most rapid decline in numbers and worsening conservation status in the world. In 1994, seven albatross species were listed as threatened with extinction, but this number increased to 19 of the 21 species of albatross by 2007.

Of all albatross species, 12 breed in New Zealand and six are endemic. Clearly, we have a responsibility to protect them, yet studies unanimously conclude that risk of capture of seabirds remains widespread throughout our EEZ.

Following the most recent deaths of Chatham albatrosses, Fisheries Minister Jim Anderton released draft regulations that would mitigate seabird bycatch. We hope this results in the introduction of comprehensive mitigation measures across all fisheries where these seabirds are at risk. If we do not act to stop the slaughter, we may never again witness the magnificent flight of the Chatham albatross, or others of his southern seabird cousins.

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