

**Senate Standing Committee on Environment, Communications and the Arts  
Legislation Committee**

Answers to questions on notice

**Environment, Water, Heritage and the Arts portfolio**

Additional Estimates, February 2010

<b>Outcome:</b>	1	<b>Question No:</b>	36
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Approvals and Wildlife Division		
<b>Topic:</b>	EPBC – bushfire treatments		
<b>Hansard Page ECA:</b>	75 (9/2/10)		

**Senator ABETZ asked:**

**Senator ABETZ**— I refer to the review, if I can call it that, into fuel reduction. Question No. 23, in fact, was taken on notice by the Approvals and Wildlife Division. I was told that the committee is expected to undertake a public consultation process on fire regimes as a threatening process in mid-2010. Is that still on track?

**Dr Zammit**—Yes.

**Senator ABETZ**—Can we be told—if need be, on notice—how we intend to undertake that public consultation? Will it be just via paper or internet, as in written submissions, or will this consultation process go especially to regional areas and get information?

**Mr Burnett**—I do have some information, Senator. I do not have the full particulars as to whether it is by internet or regional meetings et cetera, but there are generally two strands to the kind of consultation that is done by the Threatened Species Scientific Committee when it is looking at key threatening process nominations like this. The first is that they usually run a round of consultations with specialists—in this case, fire ecologists and fire managers—and there is also a separate and extensive public consultation round. But, as I say, I am afraid I do not have the details of how that consultation will be done.

**Senator ABETZ**—Will there be any particular discussion with Indigenous communities, especially—yes, there is a Western Australian here—in the ‘top bit’ of Western Australian, if I can use that geographic description, in the savannah lands?

**Mr Burnett**—That would be my expectation, but I am afraid that I just do not have all those details.

**Senator ABETZ**—Please take all that on notice.

**Answers:**

The Threatened Species Scientific Committee (TSSC) will be seeking written comment on the nomination to list *Contemporary fire regimes resulting in the loss of vegetation heterogeneity and biodiversity throughout Australia* as a key threatening process.

A number of Indigenous communities and Indigenous fire and natural resource managers will be consulted, including Indigenous communities from Western Australia. Given the broad extent of this nomination, the TSSC is seeking assistance from the Indigenous Advisory Committee (IAC) to facilitate effective consultation with Indigenous communities across the country. The specific nature of the Indigenous consultation will be determined by the TSSC based on feedback from the IAC.

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<b>Outcome:</b>	1	<b>Question No:</b>	37
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Approvals and Wildlife Division		
<b>Topic:</b>	Guns Pulp Mill – Ref Parliamentary Qon 1486		
<b>Hansard Page ECA:</b>	8 (9/2/10)		

**Senator ABETZ asked:**

**Senator ABETZ** – ‘Unreasonable’, thank you—an unreasonable use of resource. I just want to get a handle on how difficult this task is given that, when I was given that answer by the department, I personally rang Telstra and said, ‘On the day in question can you tell me all the telephone numbers my office rang and what would the cost be?’ Telstra did it for us for nothing and gave us the telephone numbers in a matter of a 48-hour turnaround. Now that was one phone call by my office. Has the department even rung, so made that one phone call, or would one such phone call also be considered ‘an unreasonable use of resource’?

**Senator Wong**—You put this previously to the department, this story of your own investigations. The department has indicated today their response to that. Mr Early has provided an answer and I would again refer you to the minister’s answer. It is the minister’s answer to which you are referring. If you wish us to take on notice what is meant by paragraph 4, which is what you are quoting, I will do so. But I do not think these officers can assist you any further.

**Answers:**

At Senate Budget Estimates on 28 May 2007, the following question and response is recorded in Hansard (ECA 107):

**“Senator ABETZ:** “So no actual effort was made to try to get the telephone numbers and the duration of the calls. That is correct isn’t it?”

**Ms Webb** – That is correct...”

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<b>Outcome:</b>	1	<b>Question No:</b>	38
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Approvals and Wildlife Division		
<b>Topic:</b>	Sugarloaf pipeline – public release of audits		
<b>Hansard Page ECA:</b>	80 (9/2/09)		

**Senator BIRMINGHAM asked:**

**Senator BIRMINGHAM**—I would like any commitments that Victoria has made in relation to publicly releasing audits for future years as well as what they have to provide to the Commonwealth and any commitments or approaches the Commonwealth has made for them to do so prior to the actual extraction of that water, not just the allocation of it.

**Senator Wong**—In relation to the second, we can; in relation to the first, if it is on the public record, we can, but that is an issue for the Victorian government.

**Senator BIRMINGHAM**—What knowledge the department has in that regard would be helpful.

**Senator Wong**—You could just look on the web, I suppose.

**Senator BIRMINGHAM**—The web is a very big place and I am sure the department has spent lots of time looking at these matters with the Victorian government already and has far greater knowledge than I would, so I am just hopeful they can share some of that knowledge. My main point is that I would appreciate your advice on the matter of timing and any commitments about timing beyond 2010.

**Answers:**

Melbourne Water, as holder of the approval under the EPBC Act, advised the Department in writing in December 2009 that the Victorian Government intends to make the independent audit reports regarding water savings from modernisation projects publicly available in accordance with the Victorian Government's *Water Savings Protocol*. The *Water Savings Protocol: Water Savings Audit Process* requires that the auditors perform an independent audit of water savings generated from irrigation modernisation projects on an annual basis.

In response, DEWHA wrote to Melbourne Water in January 2010 acknowledging this advice and expressing the view that ideally, such information should be available to the public before the relevant source of water is used to supply Melbourne.

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<b>Outcome:</b>	1	<b>Question No:</b>	39
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Approvals and Wildlife Division		
<b>Topic:</b>	Gunns Pulp Mill – Ref Parliamentary Qon 1486		
<b>Hansard Page ECA:</b>	9 (9/2/10)		

**Senator ABETZ asked:**

**Senator ABETZ**—No, the minister is absolutely entitled to ignore or accept advice. His answer to me may in no way, shape or form reflect the advice proffered by the department. After all, the minister is in control and he will make the determination whether or not it is a reasonable or unreasonable use of resource. The department may well have advised that it was reasonable, but the minister, as is his right, may have determined that it was unreasonable. So I am not asking what the advice was. All I want to know is whether any advice was proffered prior to the minister giving that answer.

**Senator Wong**—So the question is in relation to the answer to question No. 1486 as to whether departmental advice was provided prior to that question being provided. I will take that question on notice.

**Answers:**

Advice was provided to the Minister's Office during the course of drafting the response to question No 1486.

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<b>Outcome:</b>	1	<b>Question No:</b>	40
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Approvals and Wildlife Division		
<b>Topic:</b>	MDB fishing		
<b>Hansard Page ECA:</b>	Written Question on Notice		

**Senator COLBECK asked:**

There was a suggestion in December by a river ecologist from Charles Sturt University that fishing be banned in large areas of the Murray Darling Basin to prevent native fish from "facing extinction".

The ecologist suggested Australian Governments have been working on this for some time.

1. Has DEWHA been doing any work on such protected areas?

**Answers:**

No.

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<b>Outcome:</b>	1	<b>Question No:</b>	41
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	Coral Sea Scientific Studies		
<b>Hansard Page ECA:</b>	43 (9/2/10)		

**Senator BOSWELL asked:**

**Senator BOSWELL**—In light of the proclamation of the Coral Sea Heritage Park decision being made prior to the completion of the government's bioregional profile study, what scientific studies are currently being undertaken on the Great Barrier Reef Marine, and I suppose that would include the Coral Sea?

**Mr Oxley**—There has not been a decision to proclaim or establish a Coral Sea heritage park, and I think we traversed that issue in the last Senate estimates. I believe also in response to a question that we took on notice, we outlined the east regional profile which references the extensive range of scientific studies and information that was drawn on to identify the key conservation values and key ecological features of the east marine region, including the Coral Sea. In terms of the ongoing work under the marine bioregional planning process, I will take on notice detail in terms of scientific studies and analysis that is ongoing, but make the observation that the main activities, which are being undertaken as part of this next step of the assessment process, are to look at the range of threats and pressures on the region and to use those to then identify some conservation priorities. So threat assessment work primarily, or risk assessment work.

**Answer/s:**

Eight scientific research permits have been issued in the Coral Sea Conservation Zone since it was declared. The research undertaken includes the following:

1. Collection of taxa to document Coral Sea fauna from the area of the Queensland Plateau (145-149°E 13-18°S);
2. Multibeam swath depth mapping across the Coral Sea Conservation Zone (Traverse across the Coral Sea Conservation Zone from PNG to the GBR);
3. Discovery of species biodiversity in the deep sea. Localities of the Queensland Plateau and Marion Plateau;
4. Marine Research programs in accordance with the publication 'AIMS Research Plan 2007-2011' and any subsequent updates carried out throughout the Coral Sea, primarily along the continental shelf and oceanic reefs such as Osprey/Shark reefs;
5. Locate & survey shipwrecks & associated land sites on Porpoise Cay, Bird Islet and Hope Cay, on the Wreck Reefs;
6. Population ecology research on elasmobranchs (growth rates, home range, birthing areas, population numbers, densities). Osprey Reef - North Horn, Entrance Channel, Osprey Lagoon; Shark Reef;

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7. Visual/video surveys to assess shallow benthic cover and associated fish assemblages. Limited fish collections for genetic analysis (population). Localities: Wreck Reefs (Porpoise Cay, Bird Islet and Hope Cay (Whalebone Cay)); and
8. Seabird monitoring, visual underwater census, vegetation monitoring and turtle monitoring at Marion Reef.

Scientific research continues to inform the marine bioregional planning process in the East Marine Region which includes the Coral Sea Conservation Zone.

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<b>Outcome:</b>	1	<b>Question No:</b>	42
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	North Marine Bioregional plan - consultation		
<b>Hansard Page ECA:</b>	45 (9/02/10)		

**Senator IAN MACDONALD asked:**

**Senator IAN MACDONALD**—I do not want to put the department to huge expense but could you give me a relatively brief summary of the consultation that has taken place in communities affected by this, namely Weipa, Karumba, the Groote Eylandt people, the Wessel Islands people and the people around Darwin, including the Melville Islands and down into the Joseph Bonaparte Gulf? Could you just briefly indicate the details of the consultation; for example: ‘Officers met, Weipa, 10 October 09—’ just that sort of thing?  
**Mr Oxley**—I am happy to do so.

**Answer/s:**

Community stakeholders have been involved in consultations on the marine bioregional planning process in the North Marine Region since it commenced. Consultations have involved public meetings, expert workshops, formal and informal discussions as well as phone calls, email exchanges and written correspondence. The Department of Environment, Water, Heritage and the Arts (DEWHA) has undertaken targeted consultations with community groups and meets regularly with the Australian Government Indigenous Advisory Committee (which involves Indigenous community representatives from across northern Australia). DEWHA has also coordinated and/or participated in numerous meetings with industry organisations and peak bodies which include community representatives.

Since September 2009, when the Areas for Further Assessment for the North Marine Region were released for consultation, targeted consultations with Indigenous and non-Indigenous communities living adjacent to the North Marine Region have included the following:

- 22 September 2009, public forum on the Areas for Further Assessment in the North Marine Region, Darwin
- 27 September 2009, DEWHA participated in a community meeting in Cairns (organised by Fisheries Queensland for the purpose of discussing the Gulf of Carpentaria Inshore Finfish Fishery Review).
- 28 September 2009, DEWHA participated in a community meeting in Karumba (organised by Fisheries Queensland for the purpose of discussing the Gulf of Carpentaria Inshore Finfish Fishery Review).
- 29 September 2009, DEWHA participated in a community forum in Karumba.



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- 1 October 2009, DEWHA participated in a community meeting in Weipa (organised by Fisheries Queensland for the purpose of discussing the Gulf of Carpentaria Inshore Finfish Fishery Review).
- 5 – 6 October 2009, DEWHA met with representatives of the Dhimurru Aboriginal Corporation, Bawinanga Aboriginal Corporation, Carpentaria Land Council Aboriginal Corporation and Cape York Land Council (Balkanu) at an Indigenous community meeting in Darwin.
- 9 October 2009, DEWHA met with representatives of the Northern Land Council in relation to sea country planning issues with the Wadeye community and provided information on the marine bioregional planning process for discussion at a Wadeye community forum.
- 13 October 2009, DEWHA participated in a community council meeting of the Tiwi Land Council, Tiwi Islands.
- 26 – 28 October 2009, DEWHA participated in a meeting of the Northern Gulf Resource Management Group in Mareeba.
- 13 January 2010, DEWHA met with community representatives in Karumba at the invitation of the Gulf Commercial Fishermen Association and the Queensland Seafood Industry Association. Discussions were also held with the Karumba Progress Association.
- 23 February 2010, DEWHA participated in a meeting of the Bawinanga Aboriginal Corporation.
- 25 February 2010, DEWHA held discussions with representatives of numerous Indigenous community organisations from across northern Australia (Queensland, Northern Territory, Western Australia) attending a community forum organised by the North Australia Indigenous Land and Sea Management Alliance.
- 9 March 2010, DEWHA will meet with a delegation of Mayors from the Gulf of Carpentaria (Shires of Doomadgee, Mornington, Burke, Carpentaria and Etheridge).

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<b>Outcome:</b>	1	<b>Question No:</b>	43
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	Stakeholder Advisory Group - displaced activities		
<b>Hansard Page ECA:</b>	46 (9/2/10) and Written Question on Notice		

**Senator COLBECK asked:**

**Mr Oxley**—If I may I will just clarify the situation. We are currently planning to hold a meeting of the stakeholder advisory group in early March. I am not sure if an exact date is locked in; we have been looking at around 4 or 5 March.

**Senator COLBECK**—Have there been any modifications to that group?

**Mr Oxley**—... I am happy to provide on notice the current membership of that group if that would be helpful to the senator. The group is the stakeholder advisory group that was established by the government last year to provide advice on displaced activity policies.

In writing:

1. What is the current status of the displaced activity stakeholders advisory group?
2. Who is a member of this group? What changes to the membership have changed since its setting-up?
3. Did any DEWHA officials provide advice to any of the stakeholders that the group would be disbanded, wound-up or similar prior to 31 January 2010?
4. What advice did DEWHA provided to or receive from the Minister about the ramifications of displaced activities with respect to the process?
5. Was the WWF or other NGOs invited to participate in the Displaced Activities process? What was the reasoning behind inviting them or other NGOs?

**Answer/s:**

1. The displaced activity Stakeholder Advisory Group has met two times to date with a third meeting anticipated to occur shortly.

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2. Listed below are the current members of the Stakeholder Advisory Group

<b>AGENCY</b>	<b>NAME</b>
Recfish	Len Oylott
Game Fishing Association of Australia	Grahame Williams
APPEA	Mark McCallum
WWF Australia	Ghislaine Llewellyn
National Seafood Industry Alliance	Jeff Moore
Australian Shipowners Association	Angela Gillham
Ports Australia	Susan Fryda-Blackwell
Indigenous Advisory Group	Melissa George
Ecotourism Australia	Kristie Gray
Australian Fishing Tackle Association	Doug Joyner
Charter fishing	Don Jones

The only change in membership on the group is Mr Jeff Moore replaced Mr Chris Melham (former CEO Commonwealth Fisheries Association).

3. No. The group has not been disbanded.
4. None.
5. Yes. WWF was invited to participate on the Stakeholder Advisory Group as a representative of the conservation sector. The group was established to provide input from all sectors engaged in the marine bioregional planning process.

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<b>Outcome:</b>	1	<b>Question No:</b>	44
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	Bioregional plans – update on planning expenditure		
<b>Hansard Page ECA:</b>	46 (9/2/10)		

**Senator COLBECK asked:**

**Senator COLBECK**—You gave us at the last estimates costings for planning expenditure in each, and projected for 2009-10. Could you update those for us? That was in answer to question No. 59. If you could update that answer I would appreciate it.

**Mr Oxley**—I presume you mean on notice?

**Senator COLBECK**—Yes. If you could just sort of quantify point 1, if it is possible once you get through the process a bit further, which talked about the time status, as well?

...

**Senator COLBECK**—You have given me some block figures on the expenditure. I think you have also mentioned, in perhaps another question on notice, assistance to members during the process to date. Can you indicate any assistance provided to NGOs as part of that process or would they fit within that overall answer to question on notice No. 52 that talks about stakeholder assistance?

**Mr Oxley**—So you are asking for an update on that?

**Senator COLBECK**—If you could provide that, that would be great.

In writing:

1. What is the current expenditure on the planning process for each of the regions?
2. What level of financial assistance – in-kind or otherwise – have the various NGO groups received? Can you please provide a breakdown by each group?
3. Can you confirm a consultant was appointed to examine displace activity? What was the name of the consultant/s? When were they engaged? What was their terms of reference? What was the cost of this consultancy?
4. When was an interim report provided by the consultant? When was a final report provided? Was this report made public? Can you make a copy available?
5. Were stakeholders made aware of the report? Were they provided with a copy of the report (and not just a presentation)?

**Answer/s:**

1. This answer updates the answer to Written Question on Notice 59 of the Supplementary Senate Estimates of October 2009 which included forecasted expenditure for each region for the financial year 2009/10. The actual expenditure on the planning process (inclusive of program and staffing expenditure, but not including corporate overheads)

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for the financial year 2009/10 for each of the regions as at 31 January 2010 is as follows:

South-west:	\$652,439
North-west:	\$529,677
North:	\$504,959
East:	\$416,831
South-east:	\$71,711

(Update on time status for the planning process is contained in the answer to QoN 48.)

2. Financial assistance to NGOs to participate in the planning process has been in the form of travel and accommodation assistance to attend meetings organised by the Department to gather input and views. Details of assistance provided to all non-government stakeholders – industry, community groups and conservation organisations – were provided in the answer to Question on Notice 52 of the Supplementary Senate Estimates of October 2009. Financial assistance to conservation NGOs for travel to attend Departmental meetings in support of the planning process has amounted to \$10,250 during Financial Years 2007-08, 08-09, 09-10. Breakdown by organisation is not readily available; NGOs that have received assistance include the World Wide Fund for Wildlife, the Australian Conservation Foundation, the Nature Conservancy, the Wilderness Society and the Humane Society International.
3. The consultancy agency MAXimusSolutions was engaged to provide expert advice on the displaced activity policy. The contract was signed on 9 June 2009. The cost of the consultancy was \$65,400.00 (GST Exc). The terms of reference were:
  - a. Provide an analysis of the of the policy, economic and legal implications of biodiversity conservation decisions, notably the declaration of marine protected areas, on pre-existing uses
    - i. Focusing on the nature of private and common property rights in the marine environment.
    - ii. These uses include petroleum production and exploration; commercial, charter and recreational fishing; sea dumping; shipping and tourism (eg whale watching).
  - b. Provide an overview of the effectiveness or otherwise of measures to address recent biodiversity conservation or similar decisions which have sought to manage displaced activities. Proposed case studies are:
    - i. Western Australia Regional Forest Agreement
    - ii. US or other overseas MPA process
    - iii. Victoria MPAs
  - c. Provide the findings of the analysis with policy options to the Commonwealth Government Steering Group both in a written report and as a presentation.
4. An initial draft of the first half of the report was provided to the Department on 3 July 2009. A second draft of the full report was provided on 21 July 2009. The final report was provided on 20 August 2009. This report has not yet been made public.

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5. Yes, stakeholders are aware that a report has been undertaken. The report has not yet been publicly released. It is intended to make the report available to the Stakeholder Advisory Group for its consideration.

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<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	Displaced activities – consultancy and report		
<b>Hansard Page ECA:</b>	48 (9/2/10)		

**Senator COLBECK asked:**

**Senator COLBECK**—I would like to go back to the displaced activities process. Was there a consultant appointed to do some work on that process or to develop terms of reference as part of the displaced activity process under marine bioregional planning? I hope you got that that is where we were going back to.

...

**Mr Oxley**—It was to a company called MAXimusSolutions and, yes, they then utilised a couple of employees of the ANU to support that consultancy.

**Senator COLBECK**— (1) Can you tell us the costs of the consultancy?

**Mr Oxley**—I may need to take that one on notice.

**Senator COLBECK**— (2) Who were the active participants in the preparation of the report?

**Mr Clark**—The report's authors included Professor Tim Bonyhady and Dr Andrew Macintosh.

**Senator COLBECK**—(3) Did Dr James Prest play any part in the process?

**Mr Clark**—The name does not sound familiar.

**Mr Oxley**—We will take that on notice.

**Senator COLBECK**— (4) Thank you. When was the report finalised?

**Mr Oxley**—From my recollection—and I think we may have given this indication at the last Senate estimates—it was around the middle of last year.

...

**Senator COLBECK**—Is it available to this committee?

**Mr Oxley**—Not at this stage.

**Senator COLBECK**— (5) Is there an intention to make it public?

**Mr Oxley**—I have not had that discussion with the minister.

**Senator COLBECK**—Perhaps you can consider our conversation a request.

**Mr Oxley**—I will take that on notice.

**Answer/s:**

1. The cost of the MAXimusSolutions consultancy was \$65,400.00 (GST Exc.).
2. The active participants in the preparation of the report were Mr Andrew Macintosh and Professor Tim Bonyhady.
3. No, Dr. James Prest did not play any part of the process.
4. The final report was received on 20 August 2009.
5. The report is yet to be made public. It is intended to make the report available to the Stakeholder Advisory Group for its consideration.

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<b>Outcome:</b>	1	<b>Question No:</b>	46
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division Arts		
<b>Topic:</b>	CMS Meeting 2008 – Mako sharks		
<b>Hansard Page ECA:</b>	49 (9/2/10)		

**Senator COLBECK asked:**

**Senator COLBECK**—The commencement of the process or the decision-making stage of the process was December 2008 at the CMS meeting in Rome.

...

**Senator COLBECK**—The only consultation that you are aware of is the states and CFA. What about the NGOs and particularly the ENGOs?

**Mr Oxley**—What has been advised to me is that there was no consultation with the environment NGOs, although, as you have already noted yourself, one of the environment NGOs did participate on the Australian delegation to the CMS meeting. As it has been explained to me, there was no consultation with those NGOs per se.

**Senator COLBECK**—Let us approach it from a different perspective. I understand what you are saying there. Were there any representations to the government or from those groups prior to the process that you are aware of?

**Mr Oxley**—I do not have an answer to that question with me. I would need to take that one on notice.

**Answer/s:**

The Humane Society International wrote to the Department on 30 October 2008 expressing interest in attending the 9<sup>th</sup> Conference of Parties of the Convention on Migratory Species in Rome in December 2008. There are no records of the Department receiving any other correspondence in relation to the listing of longfin mako, shortfin mako and porbeagle sharks from environmental NGOs prior to the meeting.



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<b>Outcome:</b>	1	<b>Question No:</b>	47
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	Recreational Fishing Sector – NSW – tagging programs		
<b>Hansard Page ECA:</b>	50 (9/2/10)		

**Senator COLBECK asked:**

**Senator COLBECK**—Did you get any information from New South Wales, which collects a lot of data from particularly the game fishing clubs, in relation to their tagging programs? Did they give you any information on that?

**Mr Oxley**—I would say that we were aware of tagging programs being undertaken in New South Wales.

**Senator COLBECK**—No, New South Wales collate all of the tagging data nationally, so they are the repository for all of the tagging data nationally for game fishing clubs. If you were looking to have catch information particularly for those who participate in catch-and-release programs-

**Mr Oxley**—If I may, I will take the specifics of that one on notice.

**Answer/s:**

The Department did not have this tagging data in considering its position for the 2008 Conference of Parties of the Convention on Migratory Species.

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<b>Outcome:</b>	1	<b>Question No:</b>	48
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	Recreational Fishing Sector – Tag and release - Mako		
<b>Hansard Page ECA:</b>	50 (9/2/09)		

**Senator SIEWERT asked:**

**Senator SIEWERT**—Do you have survival data on the tag and release?

**Mr Oxley**—I believe we do, but I will need to take that one on notice.

**Senator SIEWERT**—That would be appreciated.

**Answer/s:**

There is limited data on post-capture survival of mako sharks.

A small-scale study by Holts and Bedford, 1993 found that short term post-release survival for shortfin mako sharks was 100 per cent.

A study of Western Australian longline fisheries found that over 50% of mako sharks are alive and vigorous upon capture (Ward and Curran 2004).

Copies of these studies are attached.

The Department has also received a range of information from industry and the recreational sector, including on catch and tagging rates.

**References**

Attachment A: Holts, DB and Bedford, DW, 1993. Horizontal and Vertical Movements of the Shortfin Mako Shark, *Isurus oxyrinchus*, in the Southern California Bight. *Australian Journal of Marine and Freshwater Research*. 44, 901-909.

Attachment B: Ward, P and Curran, D, 2004. Scientific Monitoring of Longline Fishing off Western Australia. Bureau of Rural Sciences, Canberra.

## Horizontal and Vertical Movements of the Shortfin Mako Shark, *Isurus oxyrinchus*, in the Southern California Bight

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### Abstract

Recreational and commercial fishing effort directed at the shortfin mako shark, *Isurus oxyrinchus*, off the coast of southern California increased markedly in the mid 1980s. However, very little is known about the population size, stock structure or movements of these sharks in the northern Pacific. It is important to determine their role in these waters because the southern California bight may be an important pupping and nursery area for shortfin mako sharks.

Acoustic telemetry was used to identify short-term horizontal and vertical movements of three shortfin mako sharks in the southern California bight during the summer of 1989. All three sharks were two-year-old juveniles and were tracked for periods of from 18 to 25 h. They spent 90% of their time in the mixed layer, with only infrequent excursions below the thermocline. Vertical and horizontal movements did not indicate any diel activity pattern associated with distance to the shore or nearby islands or with bottom topography.

*Extra keywords:* tagging, tracking, water temperature.

### Introduction

Recreational and commercial fishing effort directed at the shortfin mako shark, *Isurus oxyrinchus*, off the coast of southern California increased markedly during the 1980s (Holts 1988). Popular interest in the shortfin mako shark as a sportfish and consumer acceptance of it as a commercial foodfish encouraged continued harvests. Popularity with sportfishers on both chartered sportfishing vessels and private boats has increased by an order of magnitude in recent years. Estimated fishing effort in angler trips (number of individual angler fishing trips) increased from 41 000 in 1986 to more than 410 000 in 1989 and may still be increasing (S. Crook, California Dept. of Fish and Game, personal communication). Approximately 90 to 180 t (metric tonnes dressed weight) of shortfin mako sharks are taken commercially as an incidental catch in the Californian drift-net fisheries for thresher sharks, *Alopias vulpinus*, and swordfish, *Xiphias gladius* (Bedford and Hagerman 1983; Holts 1988; Hanan *et al.* 1993). An experimental longline fishery targeting shortfin mako sharks began off southern California in 1988 and continued through the 1991 fishing season. An additional 68 t of shortfin mako sharks were landed annually in this fishery. Total commercial landings of shortfin mako sharks for all southern Californian coastal fisheries exceeds 200 t annually. This has raised concerns about the ability of the resource to sustain the current level of fishing pressure. Very little is known about the population size, stock structure, distribution or movements of the shortfin mako shark off the US Pacific coastal states. Catch records from the California Department of Fish and Game indicate that the fisheries take shortfin mako sharks primarily within 93 km of shore and from the California-Mexico border to as far north as San Francisco. They are available in greatest abundance in the spring and summer months; catches are greatest between June and August.

The catch is composed almost entirely of juvenile 1- and 2-year-old fish weighing from 13.6 to 27.2 kg (Hanan *et al.* 1993). The southern California bight may serve as a nursery area for newborn and juvenile shortfin mako sharks (Holts and Bedford 1989).

Shortfin mako sharks grow slowly, mature relatively late in life, and have a long gestation period (Pratt and Casey 1983). They produce a few (generally 4 to 16) well developed pups (Stevens 1983) whose survival is assumed to be good because of their advanced development at birth. This life-history strategy makes these sharks quite vulnerable to modern commercial and recreational fishing operations.

Information on distribution and short- and long-term movement patterns is necessary in assessing the status of affected stocks and in determining management options should management of coastal shark fisheries become prudent. Conventional dart-tagging studies in the north-western Atlantic have yielded considerable information concerning long-term movements of shortfin mako sharks in that area (Casey and Kohler 1992), but studies conducted off the southern Californian coast have only begun to reveal long-term movements of shortfin mako sharks there. Still less is known about the short-term behaviour of individuals. Acoustic telemetry has proved to be useful in identifying the short-term horizontal and vertical movements of several shark species (Carey 1990; Carey and Scharold 1990; Nelson 1990) and other large pelagic fish species (Carey and Robison 1981; Holland *et al.* 1990a, 1990b; Holts and Bedford 1990; Brill *et al.* 1993).

During the summer of 1989, four five-day cruises were conducted through a cooperative agreement between the Southwest Fisheries Science Center and the California Department of Fish and Game. The primary objective was to determine short-term movements and activity patterns of shortfin mako sharks in the waters off southern California by using acoustic telemetry.

## Materials and Methods

The 18-m sportfishing vessel *Pacific Clipper* was chartered from 14 August to 15 September 1989. The acoustic tracking techniques and equipment used in this study were identical to those previously described for tracking striped marlin (Holts and Bedford 1990). This involved the use of a hull-mounted directional hydrophone and ultrasonic receiver (Vemco<sup>1</sup> CS40 and VR60, respectively) to indicate direction and approximate distance to the tagged shark. The acoustic transmitter tags (Vemco<sup>1</sup> V4P) had working pressures of 100 psi and 500 psi (working depths of 0 to 70 m and 0 to 340 m, respectively). The tracking vessel remained within 400 m of the fish, and loran-C coordinates were recorded every 15 min for horizontal positioning. Temperature profiles of the water column were measured with expendable bathythermographs approximately every 6 h.

Sharks were captured by rod and reel. Terminal tackle consisted of a 5-m length of leader constructed from braided wire (250-pound test) and a size '9/0' hook baited with Pacific mackerel, *Scomber japonicus*, or Pacific sardine, *Sardinops sagax*. Sharks were attracted to the vessel by chumming with finely chopped mackerel. Of 28 shortfin mako sharks captured, only the three largest were selected for tagging with acoustic transmitters. To minimize capture trauma, these sharks were quickly brought alongside the boat, where the transmitters were attached with a hand-held harpoon applicator without removing the sharks from the water. They were then released by cutting the leader as close to the hook as possible. Tracking commenced immediately after each fish was released. Total length and weight were estimated while the fish was being tagged.

## Results

All three sharks were tagged and tracked off Oceanside, California, in the channel formed by Santa Catalina and San Clemente Islands (Fig. 1). Tracking periods ranged from

<sup>1</sup> Reference to trade names does not imply endorsement by the National Marine Fisheries Service.

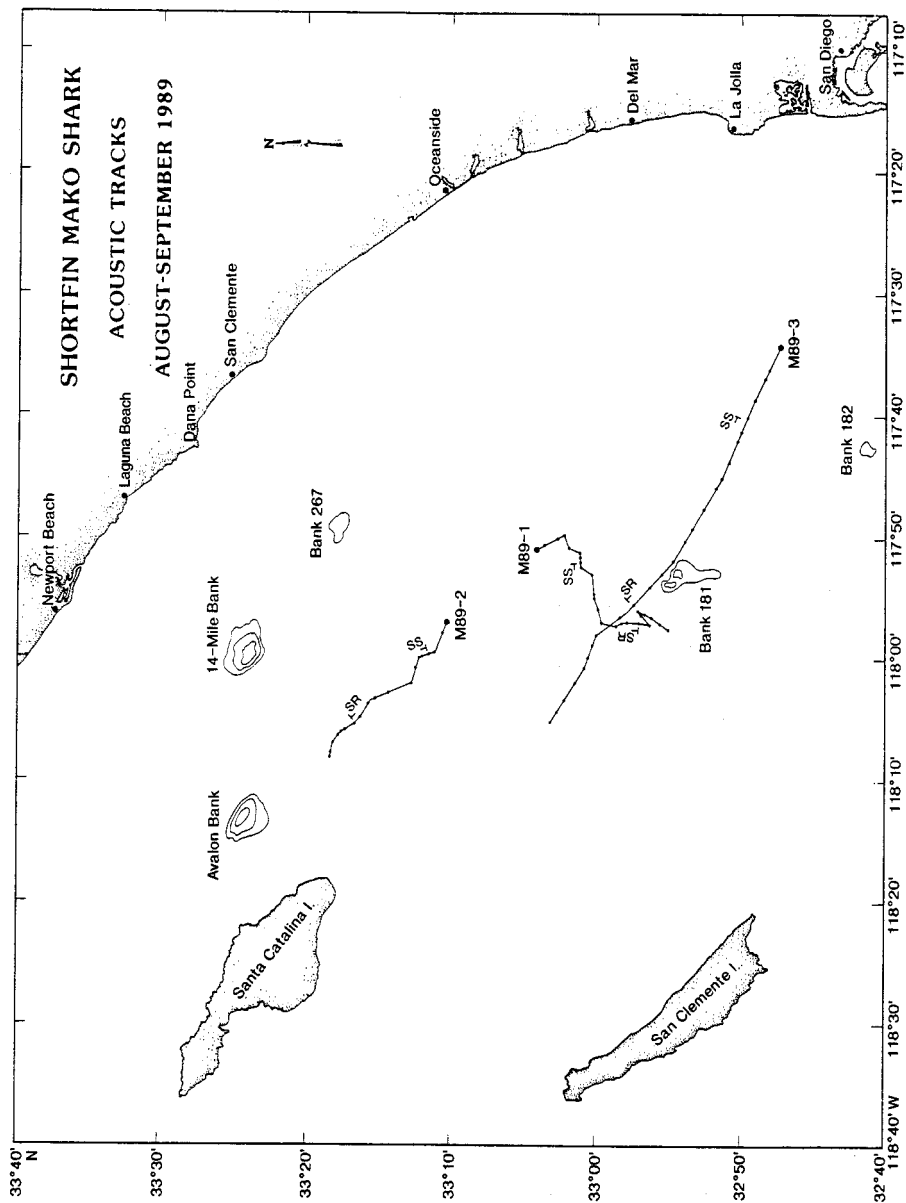


Fig. 1. Horizontal movements of three shortfin mako sharks acoustically tracked in the southern California bight, August-September 1989. SR, sunrise; SS, sunset.

18 to 25 h and covered 24 to 57 km. Data for both horizontal movements and vertical depth variations were obtained for all tracks. The location of the shark was assumed to be the same as that of the tracking vessel. Loran-C positions recorded every 15 min were smoothed with a running average over 90-min periods to indicate rate of movement.

The first shortfin mako shark tracked (Shark M89-1) was estimated to be a 1.8-m, 36-kg female and was tagged at 1300 hours on 15 August 1989. It was released 18 km north of the '181 Fathom Bank' (at 33°06'N, 117°52'W), and it moved 30 km in a generally southerly direction over the next 25 h (Fig. 1). The overall rate of movement was 1.10 km h<sup>-1</sup> (Fig. 2). Speed decreased from about 2.0 km h<sup>-1</sup> after release to less than 0.74 km h<sup>-1</sup> just before sunset, then increased markedly to 2.78 km h<sup>-1</sup> at 2030 hours. Speed gradually declined during the remainder of the night to 0.74 km h<sup>-1</sup> just after sunrise. Between sunrise and the end of the track, this fish again increased its speed to about 1.80 km h<sup>-1</sup>.

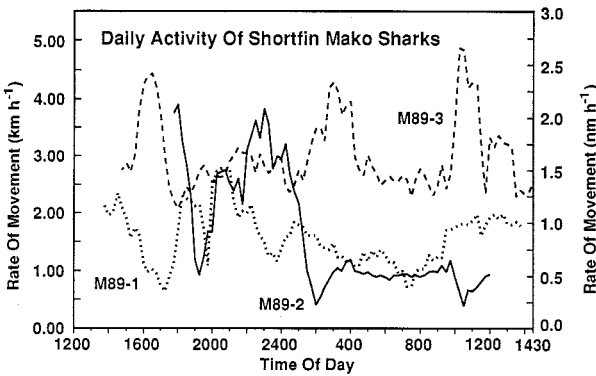


Fig. 2. Daily activity, in kilometres per hour and nautical miles per hour, for three shortfin mako sharks tracked in the southern California bight, August-September 1989.

This shark initially sounded to 35 m but slowly ascended over the next 45 min to about 7 m, where it remained until 1630 hours (Fig. 3). Between 1630 and 2000 hours, it made

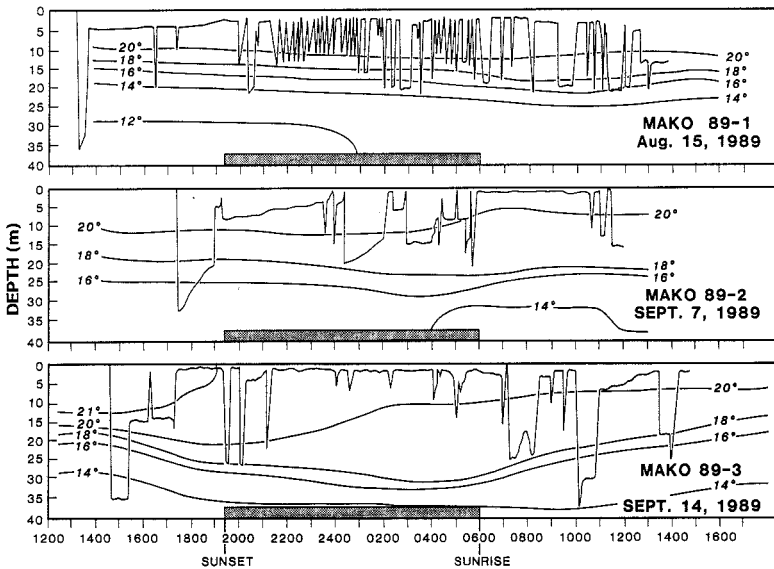


Fig. 3. Diving profiles for three shortfin mako sharks in the southern California bight, August-September 1989. Temperatures shown in °C.

two short-duration dives, returning each time to a depth of 4 to 5 m. Sunset occurred at 1930 hours, and the shark began making numerous, almost rhythmic, dives between 3 and 20 m. This pattern continued until sunrise and totalled 32 dives, or an average of 3.5 dives  $\text{h}^{-1}$ . The deepest and longest of these was to 21 m for 23 min at 0300 hours. Dive frequency decreased to less than 2 dives  $\text{h}^{-1}$  soon after sunrise. This shark spent little time below the steepest gradient of the thermocline.

The second shark tracked (Shark M89-2) was a 1.7-m individual estimated to weigh 32 kg. Its sex was not determined. Tagging and release occurred 30 km north of the '181 Fathom Bank' (i.e. at 32°54'N, 117°53'W) at 1730 hours on 7 September 1989 (Fig. 1). This shark travelled 24 km north-west in 18 h and averaged 1.29 km  $\text{h}^{-1}$  during the daylight hours and 1.48 km  $\text{h}^{-1}$  at night. As with Shark M89-1, speed decreased from a post-release high of 3.7 km  $\text{h}^{-1}$  to less than 0.92 km  $\text{h}^{-1}$  just after sunset. Speed then increased through midnight but decreased to about 0.92 km  $\text{h}^{-1}$  for the remainder of the track (Fig. 2). Prior scheduling required the tracking of Shark M89-2 to be terminated after only 18 h.

After release, this second shark immediately descended to 33 m, where it remained for 90 min before gradually ascending to 20 m (Fig. 2). At 1900 hours, just before sunset, it ascended quickly to about 5 m, where it remained until 2000 hours. It remained above 10 m until about midnight, when it descended to 29 m and slowly rose to 12 m over the next couple of hours. A series of short dives followed until sunrise, when the frequency and depth of dives decreased. Shortly after sunrise, it positioned itself between 2 and 4 m, where it remained for the next 4 h. Another series of short dives commenced at 1030 hours. These dives may have been influenced by our attempts to position the tracking boat in the path of the fish in an unsuccessful effort to recapture this individual. The top of the thermocline varied between 18 and 22 m in depth during this track, but the shark did not descend into it except for the initial plunge.

The third shark tracked (Shark M89-3), a 1.8-m, 32-kg individual, was tagged at 1430 hours on 14 September 1989. Sex was not determined. This fish was tagged 31 km east of the '181 Fathom Bank' (i.e. at 32°47'N, 117°34'W), and it moved west-north-west, passing over a shoal area near the '181 Fathom Bank' and covering 57 km during the 24-h tracking period (Fig. 1). This shark differed from the other two by covering nearly twice the distance and averaging 2.40 km  $\text{h}^{-1}$  (Fig. 2). The speed of this shark increased to more than 4.44 km  $\text{h}^{-1}$  during the first 3 h of the track and then decreased to almost 2.0 km  $\text{h}^{-1}$ . Speed then remained at about 2.40 to 2.77 km  $\text{h}^{-1}$  for most of the remainder of the track, with noticeable increases at 0200 and 1000 hours.

When released, Shark M89-3 also sounded to 33 m. Within 1 h it ascended to 15 m, where it remained until 1715 hours (Fig. 3). It then rose to within 1 m of the surface. Just after sunset, it made three dives to 20–25 m. It remained within 3 m of the surface during the night. After sunrise, it descended to 22 m for about 1 h before rising to near the surface. Its deepest dive to 33 m occurred at 1000 hours. This dive and a final one to 19 m at 1300 hours each lasted about 1 h and were well into the upper portion of the thermocline.

## Discussion

### *Post-tagging Dive and Survival*

All three shortfin mako sharks were released in good condition and showed no apparent harmful effects from being tagged throughout the tracking period. There was no apparent trauma from capture extending beyond the post-tagging dive.

Vertical dive profiles indicate that the trauma of capture and release may last only 30 to 90 min. Horizontal movements of Sharks M89-1 and M89-2 support this observation. The actual speed of these two sharks decreased substantially within 2 h of release. The third shark (M89-3) increased its speed over the first 2 h while it remained at a depth of 30 m, then slowed as it ascended into the mixed layer.

An initial dive into the cooler waters below the thermocline immediately following release has been noted for blue sharks, *Prionace glauca*, by Sciarrotta and Nelson (1977), Tricas (1979) and Nelson (1990) and for billfish by Holland *et al.* (1990a) and Holts and Bedford (1990). This may be a response of obligate ram ventilators to overcome an oxygen debt built up during capture, as suggested by Holland *et al.* (1990a). This is certainly possible in the present case because shortfin mako sharks are active fish when caught on sportfishing gear and undoubtedly expend considerable energy attempting to escape. Both muscular and visceral temperatures in the shortfin mako shark are maintained well above ambient water temperature through a system of vascular counter-current heat exchangers (Carey *et al.* 1981, 1985). The time spent in these post-tagging dives may also be a behavioural response to regulate internal temperature by dissipating excess heat built up during the catching and tagging process.

#### *Horizontal Movements in the Southern California Bight*

The southern California bight has a diverse topography that includes several large islands ranging in distance from 20 to 110 km from the Californian shore. The average water depth is 700 to 1000 m in the immediate tracking area, although numerous submarine escarpments and banks rise to within 100 m of the surface. The southern California bight is also influenced by the California Current and counter-current, which forms many eddies in and around the islands. These currents and resulting eddies probably influenced the movement of the sharks we tracked. Water currents were found to influence the movement of striped marlin off the island of Hawaii (Brill *et al.* 1993). Unfortunately, the measurement of water currents and eddies requires current-profiling systems not available on small tracking vessels.

All three tracks in this study began and ended within a few kilometres of various submarine features within the southern California bight. However, there was no clear indication that any of the sharks tracked were actually associated with these features. Each capture and tagging location was influenced by drift because our 'chumming line' extended over several kilometres at times.

Shark M89-1, although moving generally south, varied its direction considerably more than did Sharks M89-2 and M89-3. These last two sharks both travelled in a fairly direct westerly direction. Sharks M89-1 and M89-2 averaged  $1.33 \text{ km h}^{-1}$  over the tracking period (Fig. 3). Shark M89-3 travelled nearly twice as far as the others, averaging  $2.55 \text{ km h}^{-1}$ . The rate of movement in the first hour of tracking exceeded  $1.80 \text{ km h}^{-1}$  for all three fish. M89-1 and M89-2 both slowed considerably in the first few hours after release, whereas M89-3 first increased its speed to nearly  $4.44 \text{ km h}^{-1}$  before slowing to  $2.77 \text{ km h}^{-1}$ . The average rate of movement for all three fish was lowest during the early to mid-morning hours. One shortfin mako shark (about the same size as our fish) tracked off the eastern coast of the USA averaged about  $3.70 \text{ km h}^{-1}$  without any apparent change in swimming pattern, although it did reach  $5.55 \text{ km h}^{-1}$  for a short time (F. Carey, personal communication). White sharks, *Carcharodon carcharias*, tracked off southern Australia averaged  $3.2 \text{ km h}^{-1}$  (Strong *et al.* 1992).

Satellite images of sea surface temperatures (SSTs) were obtained for each track. Several temperature breaks and current eddies of  $1^\circ\text{C}$  to  $2^\circ\text{C}$  were present in and around the islands of the southern California bight. The SST image associated with the track of Shark M89-1 was obscured by clouds. The track of Shark M89-2 stayed on the warm side of a  $2^\circ\text{C}$  temperature break as the fish moved west toward the Avalon Bank. The track of Shark M89-3 crossed two temperature gradients as the fish moved from warmer water off La Jolla, California, to water  $2^\circ\text{C}$  to  $3^\circ\text{C}$  cooler as it moved west. Neither of these two sharks showed any sign of changing their behaviour in response to SSTs as did the striped marlin tracked earlier in the same area (Holts and Bedford 1990).



### Vertical Distribution and Temperature Preferences

A major feature of this study is that the three juvenile shortfin mako sharks observed in the southern California bight oriented to the surface waters above the thermocline. They spent 90% of the total tracking time in the mixed layer above 20 m. Slightly more daylight hours than night-time hours were spent below 20 m (Fig. 3).

The track of Shark M89-1 showed considerably more vertical activity than did the tracks of the other two sharks. M89-1 spent most of the night-time hours in continual vertical excursions between 2 and 15 m. The frequency of excursions slowed considerably after sunrise, although activity remained high through the end of the tracking period. Tracks from M89-2 and M89-3 showed fewer vertical excursions, but several of these lasted 1 h or longer. Vertical excursions of M89-1 and M89-2 were greatest during the night, whereas M89-3 was most active during the mid-morning period of the second day. These sharks did not descend below 25 m during the night-time hours, and, excluding the post-tagging plunge, only one (M89-3) descended below 25 m during the day.

Depth of the thermocline averaged 14–16 m during the first track and 19 to 20 m during the second and third. In all tracks, the mixed layer was 20°C to 21°C and the steepest gradient in the thermocline occurred from 18°C to 20°C. The total time that all three sharks spent in the mixed layer was 81·6%, with another 11·4% spent in the 18°C to 20°C transition zone (Table 1). Only infrequent or short excursions below the thermocline occurred, and there was little difference between day and night. Only vaguely apparent in this study were patterns observed for blue and shortfin mako sharks in the Atlantic. Those sharks made their longest excursions and deeper dives during the day and smaller vertical excursions at night. In that study, a large female shortfin mako shark spent most of the time well below the mixed layer and reached depths greater than 400 m several times (Carey and Scharold 1990). Our sharks were smaller than the shortfin mako and blue sharks tracked by Carey and Scharold (1990). The reason for observed differences in depth preference is unknown, although condition, age and location may all be involved.

Several other pelagic predators prefer the warmer water of the mixed layer, including the blue shark (Sciarrotta and Nelson 1977) and the striped marlin (Holts and Bedford 1990). Still others, including the white shark (Carey *et al.* 1982) and the yellowfin tuna, *Thunnus albacares* (Carey and Olson 1982; Yonemori 1982), orient to the steepest gradient of the thermocline.

**Table 1. Percentages of time spent at different temperatures during day (D) and night (N) for shortfin mako sharks**

Temperature (°C)	Shark M89-1		Shark M89-2		Shark M89-3		Combined		Total
	D	N	D	N	D	N	D	N	
20–21 (mixed layer)	75·4	86·3	65·3	79·8	74·3	100·0	73·3	88·4	81·6
18–19	9·9	10·6	22·1	20·2	10·8	—	12·3	10·3	11·4
17–18	1·3	1·2	5·9	—	0·6	—	1·8	0·5	0·6
16–17	4·8	0·8	6·5	—	5·6	—	5·3	0·3	2·8
15–16	2·3	0·7	0·2	—	0·9	—	1·4	0·3	0·3
14–15	3·0	0·4	—	—	0·8	—	1·6	0·2	0·9
13–14	1·5	—	—	—	7·0	—	3·4	—	1·7
12–13	1·8	—	—	—	—	—	0·9	—	0·7

### Diel Patterns

Neither horizontal nor vertical movements indicated any diel activity pattern common to all three sharks. Likewise, no pattern of movement such as a home range associated with the nearby islands, the banks or the shore was evident, probably owing to the diverse

topography in the area. Sciarrotta and Nelson (1977) observed an island-oriented onshore-offshore movement in blue sharks associated with feeding. Interisland cruising and island patrolling were described for white sharks (Strong *et al.* 1992). The shortfin mako sharks tracked in the present study were not obviously orienting to any features. At this age, in the southern California bight, juvenile shortfin mako sharks may have an extensive home range as do shortfin mako sharks in the Atlantic (Casey and Kohler 1992). If this is the case, extended tracks of several days may be necessary to identify any diel activity patterns or island-oriented movements.

### Acknowledgments

This work was supported by the California Department of Fish and Game and the Southwest Fisheries Science Center (SWFSC). We also acknowledge the assistance of Jerry Thompson and Paul Orstrom aboard the *Pacific Clipper*. We are grateful to all the biologists who volunteered their time to assist in this project. Drs David Au and Norm Bartoo of SWFSC and Dr Frank Carey of the Woods Hole Oceanographic Institution provided valuable reviews of the manuscript. Ken Raymond and Roy Allen of SWFSC prepared the figures.

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NOVEMBER 2004



Australian Government  
Bureau of Rural Sciences

Australian Fisheries Management Authority

# Scientific Monitoring of Longline Fishing off Western Australia



Peter Ward and Danielle Curran  
Fisheries and Marine Sciences, Bureau of Rural Sciences

**A new study reveals that longlines catch a remarkable array of sharks and fish in addition to the tuna and swordfish landed for sale at overseas markets.**

For the first time, scientifically trained observers have been placed on Australian vessels using pelagic longline gear to catch tuna and swordfish off Western Australia. The longliners operate in the open ocean, with trips ranging from a few days to several weeks. Their longlines consist of about 1200 baited hooks attached to a mainline that is suspended from buoys floating at the sea surface. They are deployed each evening and retrieved the next day. The catch is air-freighted fresh to the USA and lucrative sashimi markets in Japan.

The independent observers collected biological samples and data from the catches. The information is used in scientific research that underpins conservation and management of the fishery and marine resources.



Longline deployment

## Covering Australia's fishing zone and beyond

Observers monitored 13 longline trips during April 2003 – June 2004 (Figure 1). The trips involved 104 daily operations, which deployed a total of 134 755 hooks and caught 3593 fish and other animals. This represented 4% of the total fishing effort reported by

Australian longliners off Western Australia over the same period. Some longliners travelled over 1000 nautical miles from port, where water depths exceed 3000 metres. Longline hooks range down to several hundred metres below the ocean's surface.

## Bycatch

The observers identified 46 different species in the longline catches, a diverse mixture of surface- and deep-dwelling fish and other animals. Many of the species, such as mahi mahi, live in the sunlit surface waters. Other species, like lancetfish and swordfish, prefer

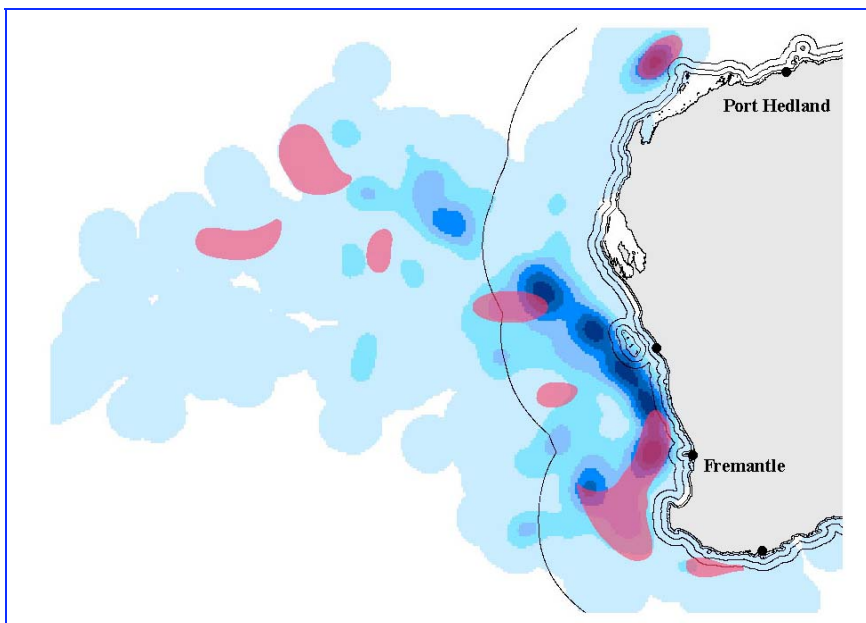


Figure 1. Distribution of observer coverage (pink areas) and Australian longline fishing (shaded blue according to intensity).

## Key findings

- Bycatch species outnumbered commercial target species.
- Most bycatch was alive when longlines were retrieved and was released alive.
- Seabirds and turtles were rare. They were all released alive.
- Catch rates of crocodile sharks were unusually high.
- Observers need to be placed on longliners fishing near the coast to improve estimates of the catches of sharks and other bycatch.

much deeper depths during the day. They are caught on longlines when they migrate to surface waters at night.

More than half the animals caught were “bycatch”. The bycatch included species like stingrays, which do not have markets, and several species, like mahi mahi, which are sold locally. Sharks dominated the bycatch (Figure 2). Blue shark, were the most frequently caught species. Their catch rates exceeded those of commercially valuable target species, such as broadbill swordfish and bigeye tuna.

### Most bycatch released alive

Most bycatch species were alive when longlines were retrieved and the animals were released without being brought on board the vessel. For example, 95% of the blue shark were alive (Figure 3); 90% of the live blue shark were released by crewmembers freeing the hook or cutting the line. Other species of interest included dusky shark (of the 37 caught, 97% were alive when longlines were retrieved), striped marlin (83% of 29), sailfish (38% of 24) and black marlin (50% of 8). Survival after release will vary with the animal’s condition, the prevalence of scavengers that might attack released animals and environmental conditions.

### Catches of marine wildlife are rare

The observers reported five turtles (two leatherback turtle, two loggerhead turtle and an Olive Ridley turtle). All were released alive by crewmembers.

Seabirds, such as shearwaters, petrels and albatrosses, often followed the vessels as they retrieved their longlines. Shearwaters were occasionally snagged in branchlines during hauling. However, they escaped or were released unharmed by crewmembers. No seabirds were reported killed, probably because fishers are not allowed to deploy longlines during the day in southern waters. In those areas seabirds sometimes dive for baits as longlines are being deployed.



Sea turtle

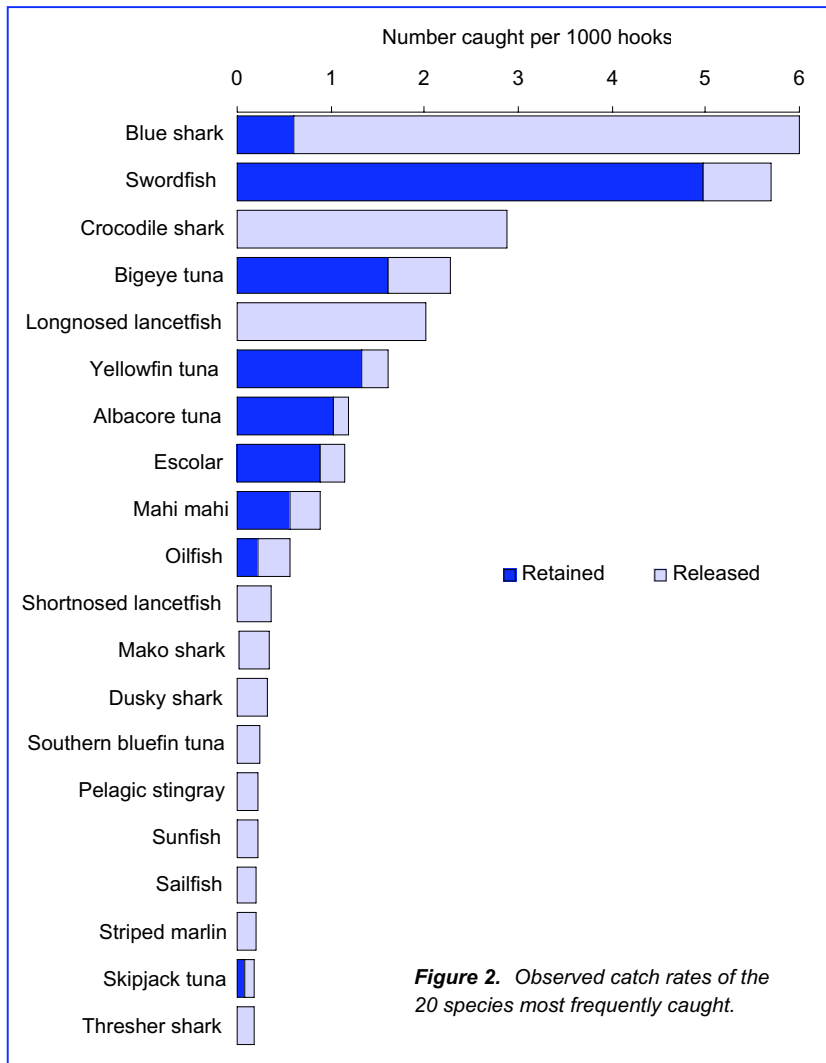


Figure 2. Observed catch rates of the 20 species most frequently caught.

### What on earth is a “crocodile shark”?

Longliners off Western Australia frequently catch crocodile sharks. *Pseudocarcharius kamoharai* are actually a species of shark. A ferocious mouth of teeth set on powerful jaws, with a habit of snapping when removed from the water, are their only similarity to true crocodiles.



Crocodile sharks are found in oceanic waters of tropical and temperate areas around the world.

Crocodile shark [AFMA Observer Program]

They migrate to surface waters at night, but live in deeper waters—600 m or more—during the day where they are known to damage deep-sea phone cables. They also feed on small deep-sea fish, squid and shrimp.

Crocodile sharks grow to just over one metre in length, but their pups are a whopping 40 cm at birth. They practice “uterine oophagy” where pups in the uterus eat eggs and other embryos. They have 2–4 pups per litter and are believed to be extremely slow growing.

The observer data show that crocodile sharks were the third most frequently caught species off Western Australia. They are quite rare in longline catches in other parts of the world. More information is needed on crocodile sharks from the Australian fishery and the broader Indian Ocean to determine whether they are vulnerable to current levels of fishing.

## Shark interactions

Dusky and sandbar sharks support another fishery in Western Australia and there is concern that the additional pressure of longline catches may harm those species. Observers reported 37 dusky and 8 sandbar sharks. They were released alive except for one dusky shark. The dusky and sandbar sharks were caught near the coast in northern waters off Exmouth. More observer trips are required to obtain accurate estimates of shark catches in coastal waters further south.

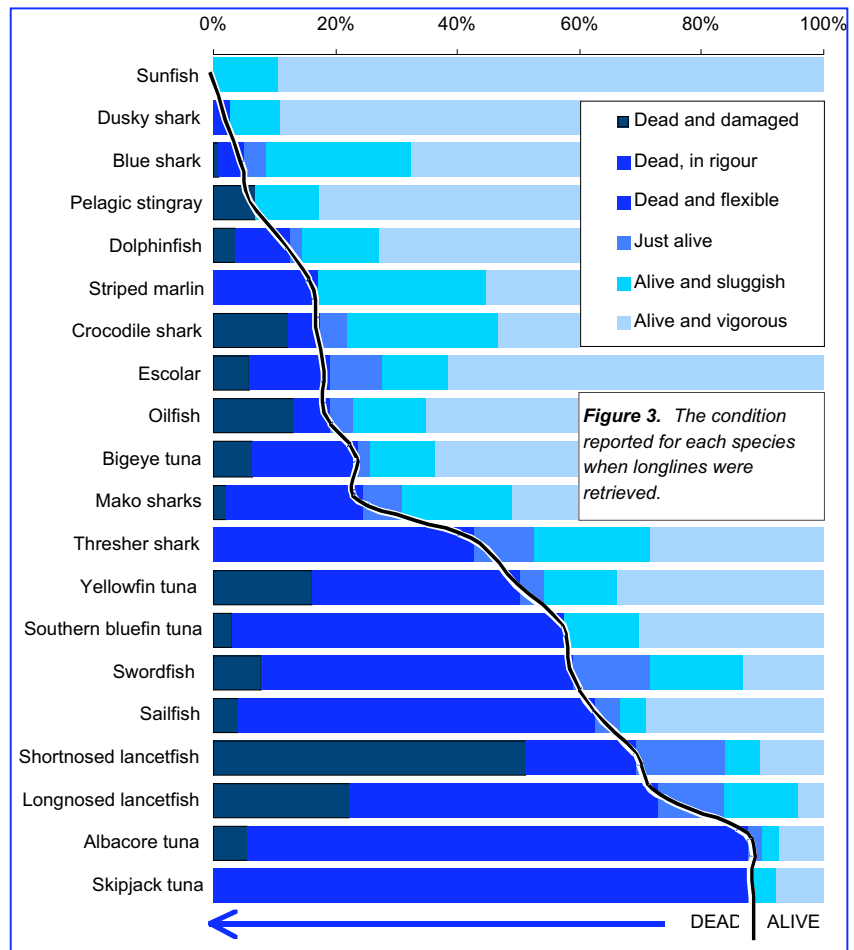


Blue shark

## Further research

The results are of immediate value in revealing a low rate of interaction of protected species with longline fishing gear. Continued monitoring is required to determine whether interaction rates vary with the season or area, and that protected species are released unharmed. The data on bycatch levels are timely for ecological risk assessments that are identifying pelagic fish communities and species that may be endangered by fishing. Furthermore, there are indications that several commercial species, such as bigeye tuna and swordfish, are now overfished in the broader Indian Ocean. The analysis of size data and biological samples collected by observers will help to reduce uncertainties in assessments, thereby supporting management actions that are required to stabilize and rebuild the stocks.

The data collected to date are inadequate for making scientifically based conclusions on the condition of populations of rare species. The scientific monitoring program is to be



continued for another year, providing an opportunity to determine coverage levels and develop sampling methods for a routine program that will cost-effectively meet the fishery's conservation and management requirements. Please contact [peter.ward@brs.gov.au](mailto:peter.ward@brs.gov.au) (ph. 02 6272-4163) for further information.

## More information

Copies of this pamphlet can be downloaded from <http://affashop.gov.au/product.asp?productid=12842> <http://www.brs.gov.au/fisheries> provides a link to the Fisheries and Marine Sciences section and various Bureau of Rural Sciences (BRS) publications, including the *Fishery Status Reports* series, which are authoritative assessments of the status of each Commonwealth-managed fishery.

<http://www.afma.gov.au> provides details of management arrangements for Commonwealth fisheries, including activities of the Western Tuna and Billfish Fishery Management Advisory Committee (WTBF MAC).

<http://www.fishbase.org> and <http://www.elasmo-research.org>

provide descriptions of many fish species, including crocodile sharks.

<http://www.iotc.org> provides fishery statistics, details of regional assessments of tuna and billfish resources and information about tuna fishing in the Indian Ocean.

## Acknowledgements

The pilot observer program was supported by the WTBF MAC and funded by the Australian Fisheries Management Authority (AFMA) MAC Initiated Research Fund. BRS, Western Australia Department of Fisheries, Tuna West and AFMA provided additional support. We are especially grateful for the thorough work of observers and the assistance provided by the vessel owners, skippers and crewmembers.



Albatross

**Senate Standing Committee on Environment, Communications and the Arts  
Legislation Committee**

Answers to questions on notice

**Environment, Water, Heritage and the Arts portfolio**

Additional Estimates, February 2010

<b>Outcome:</b>	1	<b>Question No:</b>	49
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	CMS Meeting 2008 - delegation		
<b>Hansard Page ECA:</b>	50 (9/2/10)		

**Senator COLBECK asked:**

**Senator COLBECK**—We have taken information from your website that indicates participation in the delegation. Is that full participation in the delegation that is listed on the website?

**Mr Oxley**—Are you referring to the delegation of a couple of years ago?

**Senator COLBECK**—Yes

**Mr Oxley**—I do not have it in front of me. If you could share with me what information you have, that would (be) helpful in answering the question.

**Senator COLBECK**—While that is being prepared so that you can have a look at it I should ask: how was the delegation selected?

**Mr Oxley**—I do not have information at my disposal that tells me how the delegation was selected, so I will need to take that one on notice.

**Answer/s:**

The Department's website does not include a list of participants in the Australian delegation. The report from the 9<sup>th</sup> Conference of Parties, which lists participants, is available from the Convention on Migratory Species website at

[http://www.cms.int/bodies/COP/cop9/Report%20COP9/COP9\\_Report\\_E/Annex\\_XI\\_COP9\\_Participants\\_List.pdf](http://www.cms.int/bodies/COP/cop9/Report%20COP9/COP9_Report_E/Annex_XI_COP9_Participants_List.pdf).

Participants from Australia were:

- Mr Franco Alvarez, DEWHA
- Mr Andrew McNee, DEWHA
- Mr Glen Ewers, DEWHA
- Ms Danielle Annese-Arenas, Humane Society International (HSI)

HSI sent a written request to join the Australian delegation on 10 October 2008, following which an invitation was extended to several other conservation non-government organisations. The composition of the delegation was confirmed in consultation with relevant Australian Government agencies.

**Senate Standing Committee on Environment, Communications and the Arts  
Legislation Committee**

Answers to questions on notice

**Environment, Water, Heritage and the Arts portfolio**

Additional Estimates, February 2010

<b>Outcome:</b>	1	<b>Question No:</b>	50
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	CMS Meeting 2008 – CSIRO assessment		
<b>Hansard Page ECA:</b>	51 (9/2/10)		

**Senator COLBECK asked:**

**Mr Oxley**—The Australian government position was to support the nomination for listing on appendix II of the CMS. I might add that that position was based on analysis of the nomination proposals that was undertaken by CSIRO. That advice to us indicated that the science was sufficiently strong to support a listing of those species under appendix II.

**Senator COLBECK**—The CSIRO did an analysis for the government of the proposal-

**Mr Oxley**—That is correct.

**Senator COLBECK**—for consideration at the convention?

**Mr Oxley**—To help inform the Australian government's position.

**Senator COLBECK**—Is it possible to get hold of that assessment?

**Mr Oxley**—I am happy to take that on notice.

**Answer/s:**

The report provided by CSIRO is at [Attachment A](#).



## Review of CMS nominations for shortfin and longfin mako, porbeagle and spiny dogfish.

J.D. Stevens, *CSIRO Marine & Atmospheric Research, PO Box 1538, Hobart, Tas 7001*

September 2008

Report to Department of the Environment, Water, Heritage and the Arts

### Shortfin mako (*Isurus oxyrinchus*)

The information used in this nomination is generally accurate, comprehensive and current. The proponent is Government of Croatia and the case would almost certainly have been prepared by Alen Soldo from the Centre of Marine Studies at the University of Split, who is well informed on pelagic shark issues.

The shortfin mako is one of the few pelagic sharks (and one of few sharks in general) for which a stock assessment has been attempted. The nomination refers to this assessment by ICCAT in 2004 that produced varying results with one approach suggesting reductions to about 30% of virgin biomass while another suggested current stock size is about 80% of virgin levels in the North Atlantic. However, these assessments are compromised by a lack of catch data from some major fleets (notably Spain). Every tuna or swordfish fishery would be expected to catch some pelagic sharks, but many nations submitted no catch data, or submitted data only for recent years. For example, Spain reported no catches of blue sharks until 1997, and catches of 20-30,000 t/year thereafter accounting for 80% of the total. Without complete historical catch estimates it is impossible to carry out a realistic assessment of the trend in population status using any method that depends on accurate catch data. Not mentioned in the nomination is that a recent ageing study for shortfin mako in the North Atlantic show slower growth and that the species is less productive than previously thought (Natanson *et al.* 2006). A new ICCAT assessment is due this year and will almost certainly show more pessimistic results than previously reported. While the proponent noted that ICCAT found stock declines to be smaller in the South Atlantic than in the North Atlantic, Simpfendorfer *et al.* (2008), reporting on the ICCAT assessment, said that stock levels in the South Atlantic were below those in the North Atlantic. In the NE Pacific, the combination of domestic management of the US swordfish fishery, the lack of a target fishery for shortfin makos, and the absence of adult makos from the region, appears to have limited the effect of fishing on the population in this area, though its exact status is uncertain (Taylor and Bedford 2001 cited in Simpfendorfer *et al.* 2008). To summarise this species population status, the case put by the proponent is certainly defensible and in all probability under-estimates population declines due to the more recent ageing data.

An integrated risk approach to determining the threat status for data-poor pelagic Atlantic sharks was discussed recently at an expert working group meeting in Washington DC

(Simpfendorfer *et al.* 2008). This analysis concluded that shortfin mako (along with two other species) are at the highest risk of all the Atlantic pelagic sharks and that MSY can be reached or exceeded at relatively low levels of exploitation. These data, along with that presented in the nomination should satisfy CITES and IUCN criteria. The shortfin mako is listed as Vulnerable by IUCN globally, Critically Endangered in the Mediterranean and Last Concern in the NE Pacific. The integrated risk analysis of Simpfordorfer *et al.* (2008) found that shortfin mako were at higher risk than porbeagle (*Lamna nasus*); porbeagle were nominated for inclusion on Appendix 2 of CITES, although this was rejected. It would be informative to know the reasons for this rejection.

#### Longfin mako (*Isurus paucus*)

The longfin mako is a relatively rare species that appears to be cosmopolitan in tropical and warm temperate seas, but its complete distribution remains unclear due to confusion with the shortfin mako. For example, sampling of Spanish fishing ports showed only 0.1% of makos were *I. paucus* (Moreno and Morón 1992 reported in Compagno 2001) As a consequence of its rarity its biology and ecology are poorly known. These two mako species are superficially very similar and are most easily separated on the length of the pectoral fins (about equal to head length in *I. paucus* and shorter than head length in *I. oxyrinchus*). In the past, fishery catch records have rarely distinguished between the two species.

Life history parameters are poorly known; stock structure and migratory behaviour are unknown with the species rarity making tagging studies unpractical at present. Abundance trends are unknown as the species is not usually identified in catches. The proponent's nomination case represents an accurate account of what is known of this species.

The longfin mako is of conservation concern due to its apparent rarity, large maximum size (427 cm TL), small litter sizes (2–8 pups; although based on limited data), and bycatch in intensive oceanic fisheries including retention of fins for the international fin trade. It is probably taken regularly as bycatch in tropical pelagic longline fisheries for tuna, swordfish and shark and in other oceanic fisheries which operate throughout its range; in fact the same fisheries that take shortfin mako. For the period 1989–1994, the USA reported catch statistics to FAO ranging from 2–12 t per year of longfin mako, but landings do not accurately reflect the numbers that are discarded because of poor markets for the meat (Castro *et al.* 1999). Unlike shortfin mako, the meat of longfin mako is of low quality and these animals are often finned and discarded at sea. Overall, the severity and extent of threats to this species need urgent appraisal because of the extent of current oceanic fishing practices, the apparent rarity and low productivity of the species, and because the more resilient member of the genus is known to have undergone significant declines. The integrated risk analysis of Simpfordorfer *et al.* (2008) determined that longfin mako (along with shortfin mako) were at the highest risk of all Atlantic pelagic sharks. While nothing is known of the movement patterns of longfin mako, it seems reasonable to assume that it is highly migratory based on what we know of its close relative.

In summary, given the species is apparently even less productive than shortfin mako, it is reasonable to take the precautionary approach and assume it has suffered similar population declines to that species. It is also reasonable to assume it is highly migratory and that its conservation and management would benefit from international cooperation.

If only shortfin mako were listed this would probably not cause significant enforcement problems given the low ratio of longfin mako in fisheries catches. However, I would see little value in this approach and even though data are scarce for longfin mako, I think both species should be listed together given their similarity.

### Spiny dogfish *Squalus acanthias*

The proponent's nomination for this species is generally accurate and comprehensive. This is a commercially important and consequently well-studied species particularly in the North Atlantic and NE Pacific. It is one of the least productive of all shark species although it was (once) extremely abundant so much so that control measures were even introduced to try and reduce its numbers because of its perceived impacts on other fisheries.

Stock assessments have been carried out for spiny dogfish in several regions, notably the NE and NW Atlantic, NE Pacific and in New Zealand. For the most part, these have been subject to peer review and international scrutiny and I would consider them to be reliable. The species is assessed by the IUCN as Vulnerable globally. Regional IUCN listings are Critically Endangered in the NE Atlantic, Endangered in the NW Atlantic, NW Pacific and Mediterranean, Vulnerable in the NE Pacific, South America and Black Sea and Least Concern in South Africa and Australasia. Spiny dogfish were proposed for CITES Appendix 2, although this was rejected. It would be informative to know the reasons for this rejection although it may be associated with difficulties in differentiating spiny dogfish products from other dogfish species in trade.

The North Atlantic and North Pacific stocks of spiny dogfish are highly migratory with even trans-oceanic movements being reported from tagging. High-seas catches have also been reported, particularly in the North Pacific, lending further support to these long-distance movements. There is considerable exchange between USA and Canadian waters in the North Pacific although as with most species, including very highly migratory ones, the majority of tag returns show relatively localised movements. There are no data to suggest whether southern hemisphere stocks are highly migratory. Very limited tagging in SE Australia and New Zealand (Stuart Hanchet, NIWA, New Zealand, personal communication) has shown relatively localised movements. The ecology and habitat of spiny dogfish in Australasia appears to be different to that in the northern hemisphere with populations in Australia occurring closed inshore and even penetrating into estuaries and brackish water.

Data from the southern hemisphere are currently limited (with the exception of New Zealand) and given the apparent differences in habitat and ecology from the northern

hemisphere there could be some justification for a split listing. Threatening processes for southern hemisphere populations are fewer as the species is either not targeted, or where it is (New Zealand) the species is subject to quota management. Populations in South Africa and Australasia are assessed as Least Concern by IUCN; however the South American population is assessed as Vulnerable. There should be few difficulties in enforcement at sea or in port sampling given that the species distribution is essentially anti-tropical and thus separate in the two hemispheres. However, this is a major commercial species with the products entering international trade. The source of imports and exports could be hard to determine without effective product labeling.

#### Porbeagle *Lamna nasus*

The proponent's nomination for this species is generally accurate and comprehensive. This is a commercially important and consequently well-studied species particularly in the North Atlantic. The porbeagle was determined to be at a moderately high level of risk in the integrated risk approach of Simpfendorfer *et al.* (2008). Evaluation of North Atlantic porbeagle status by Canadian scientists (Gibson and Campana 2006) and the International Council for Exploration of the Sea has revealed significant depletion in this region; IUCN classifies porbeagle as highly threatened in the North Atlantic (Endangered in the Northwest Atlantic and Critically Endangered in the Northeast Atlantic and Mediterranean).

Stock assessments have been carried out for porbeagle in the NW Atlantic. These have been subject to peer review and international scrutiny and I would consider them to be reliable. The species is listed by the IUCN (see above) and they were proposed for CITES Appendix 2, although this was rejected. It would be informative to know the reasons for this rejection

There are no tagging data to suggest whether southern hemisphere stocks of porbeagle are migratory, however, this would be a reasonable assumption based on data from northern hemisphere populations. Fisheries catch data provides some support for this with evidence of seasonal latitudinal migration (Francis and Stevens 1999).

There are some justifications for a split listing given the lack of a population assessment or information on movements from tagging in the southern hemisphere. There should be few difficulties in enforcing this at sea or in port sampling given that the species distribution is essentially anti-tropical and thus separate in the two hemispheres. However, this is a major commercial species with the products entering international trade. The source of imports and exports could be hard to determine without effective product labeling. There are also some data indicating population declines in the SW Pacific and SW Atlantic and together with the species even lower productivity from Australasia and its commercial take by a variety of fisheries in the region my recommendation would be for joint listing of populations in both hemispheres.

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**Senate Standing Committee on Environment, Communications and the Arts  
Legislation Committee**

Answers to questions on notice

**Environment, Water, Heritage and the Arts portfolio**

Additional Estimates, February 2010

<b>Outcome:</b>	1	<b>Question No:</b>	51
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	CMS Meeting 2008 – CSIRO assessment		
<b>Hansard Page ECA:</b>	52 (9/2/10)		

**Senator COLBECK asked:**

**Mr Oxley**—CSIRO would have made its assessment on the basis of the nomination documentation and whatever analysis supported those nominations. Then looking at that data against the criteria for the species it would have made its findings known to the department.

**Senator COLBECK**—Was there any active advocacy of the process or of the listing from Australia at the meeting, do you know?

**Mr Oxley**—I am not in a position to answer that.

**Senator COLBECK**—Would you take that on notice?

**Mr Oxley**—Certainly.

**Answer/s:**

The delegation's input to the proceedings of the 9<sup>th</sup> Conference of Parties to the Convention on Migratory Species in relation to the nominations of longfin mako, shortfin mako and porbeagle sharks was to support the nomination, consistent with the agreed Australian Government position.

**Senate Standing Committee on Environment, Communications and the Arts  
Legislation Committee**

Answers to questions on notice

**Environment, Water, Heritage and the Arts portfolio**

Additional Estimates, February 2010

<b>Outcome:</b>	1	<b>Question No:</b>	52
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	CMS Meeting 2008 – consultations post listing of Mako		
<b>Hansard Page ECA:</b>	52 (9/2/10)		

**Senator COLBECK asked:**

**Senator COLBECK**—We do not necessarily need to deal with it now, but could you table for me on notice a list of your consultations post the listing process in 2008?

**Mr Oxley**—Yes, I would certainly be happy to do that.

**Answer/s:**

**24 October 2008**

The Department wrote to state and territory fisheries and environment agencies seeking comments on the potential implications for their jurisdiction of the nomination of Irrawaddy dolphin and four shark species. The department advised that successful nominations would result in the species being automatically considered a listed migratory species and all provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) relating to ‘listed migratory species’ would apply. The department sought views on how best to approach the nominations to minimise impacts on domestic activities while complying with international obligations.

**30 October 2008**

The Department wrote in similar terms to the Commonwealth Fisheries Association (CFA), seeking comments on potential implications for stakeholders of the potential listing of four shark species under the Convention on Migratory Species (CMS). The letter requests a response by 6 November 2008.

**19 March 2009.**

The Department wrote to state and territory fisheries and environment agencies and CFA advising that nominations for the three shark species had been successful, that these species must now be included under listed migratory species under the EPBC Act, and that further consultation with stakeholders on the implications would occur.

**10 September 2009**

The Department wrote to state and territory fisheries and environment agencies, the CFA, the Humane Society International and the World Wide Fund for Nature, as well as a number of Australian Government agencies, advising that the requirement for automatic listing of Appendix II species under the EPBC Act was under consideration as part of the Independent Review of the Act, and that the listing of the three sharks would be considered once the Review’s findings on this matter were known.

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Answers to questions on notice

**Environment, Water, Heritage and the Arts portfolio**

Additional Estimates, February 2010

**2 November 2009.**

The Department wrote to state and territory fisheries agencies and the Australian Fisheries Management Authority, advising that the necessary legislative instruments were being prepared to allow for the listing of the three shark species as migratory under the EPBC Act. The department outlined the implications for commercial fisheries and requested advice regarding interactions between commercial fisheries and the three shark species. The implications for recreational fisheries were also outlined.

The Department also wrote to RecFish Australia, the Gamefishing Association of Australia and the Boating and Fishing Council of Australia to advise that, following inclusion of the three sharks species on Appendix II to the CMS, there was a legal obligation to list them as migratory species under the EPBC Act.



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**Environment, Water, Heritage and the Arts portfolio**

Additional Estimates, February 2010

<b>Outcome:</b>	1	<b>Question No:</b>	53
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	CMS Meeting 2008 – cost to sectors		
<b>Hansard Page ECA:</b>	52 (9/2/10)		

**Senator COLBECK asked:**

**Senator COLBECK**—In the national interest analysis paper that was compiled – and the tabling date that I have got is 25 November – it stated that it is anticipated that the costs for most sectors will be minor. Can I ask where that assessment comes from?

**Mr Oxley**—I will need to take that particular-

**Senator COLBECK**—I do not have a page or a reference point.

**Mr Oxley**—No, I understand that, but to answer the question as to where that conclusion came from I do need to take that on notice.

**Senator COLBECK**—If anything stirred up the recreational sector more – apart from the fact that they could not catch a fish when they wanted to – it was the fact that they did not have much of an investment in it. I think they have come out to demonstrate that in terms that you might understand.

**Mr Oxley**—In those circumstances that assessment would have been based, I presume, on economic cost and I would suggest it would have been focused substantially on commercial fishing impacts. It may not have accounted for recreational impacts but, as I offered, I will take that on notice and come back.

**Answer/s:**

The National Interest Analysis (NIA) states that no additional costs are expected for Australia to meet its international obligations under the Convention on Migratory Species.

The assessment that costs of domestic implications would be minor was focused broadly across the economy. In this sense, the overall the impacts were not anticipated to be significant. The NIA did include a focus on the implications for commercial fisheries, where any changes to management arrangements were anticipated to be minor and therefore low cost. The NIA also indicated there would likely be some costs associated with changes required by the recreational sector (in particular game and charter fishing operators) where they target the species concerned. There was no detailed analysis of the economic implications for this sector.

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Answers to questions on notice

**Environment, Water, Heritage and the Arts portfolio**

Additional Estimates, February 2010

<b>Outcome:</b>	1	<b>Question No:</b>	54
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	Southern Ocean Research Partnership		
<b>Hansard Page ECA:</b>	57 (9/2/10)		

**Senator SIEWERT asked:**

**Ms Petrachenko**—This is part of the multiyear program that was announced by the minister about 18 months ago. We have been doing localised research and preparatory work, but this is the first actual cruise that has gone out under the program.

**Senator SIEWERT**—Is this particular project a joint Australia-New Zealand project?

**Ms Petrachenko**—No, it involves more countries than that, but the New Zealand government have generously offered us the use of the vessel as a platform for the research, so it involves a number of scientists from Australia and other IWC countries.

**Senator SIEWERT**—Which ones?

**Ms Petrachenko**—I might have to take that one on notice.

**Answer/s:**

The joint Antarctic whale research expedition involves 18 scientists and support staff representing three countries: Australia, New Zealand and France.

**Senate Standing Committee on Environment, Communications and the Arts  
Legislation Committee**

Answers to questions on notice

**Environment, Water, Heritage and the Arts portfolio**

Additional Estimates, February 2010

<b>Outcome:</b>	1	<b>Question No:</b>	55
<b>Program:</b>	1.2		
<b>Division/Agency:</b>	Marine Division		
<b>Topic:</b>	Whaling Envoy		
<b>Hansard Page ECA:</b>	Written Question on Notice		

**Senator FISHER asked:**

Please summarise all costs related to the appointment of the Whaling Envoy, including:

1. Daily and total fees paid; days for which fees were paid; and extent of staff support costs.
2. Total costs of travel, itemised by trip and countries visited, inclusive of any accompanying officers.
3. Any other costs.

**Answer/s:**

1. The Special Envoy for Whale Conservation (Mr Hollway) is engaged at a rate of \$1,800 per day (excluding GST). The total cost to the Department of the Environment, Water, Heritage and the Arts (DEWHA) for fees, including GST incurred by Mr Hollway since the commencement of his engagement to 24 February 2010 is \$13,365.

For the period 5 October 2008 to 19 March 2009, Mr Hollway was engaged under a contract managed by DEWHA. During this period, Mr Hollway was paid for 35 days of work. The total cost fees paid to Mr Hollway during this period was \$69,300. However, because the Department of Foreign Affairs and Trade (DFAT) received funding in Additional Estimates 2008-09 for Mr Hollway's engagement and travel costs, these costs were refunded to DEWHA in full and the cost to DEWHA for this period was \$0.

Under administrative arrangements agreed to by DEWHA and DFAT from 1 July 2009 onwards, DEWHA agreed to reimburse DFAT fifty per cent of the expenses incurred by Mr Hollway and the total cost of \$13,365 mentioned above was incurred during this period.

The extent of staff support costs other than accompanying Mr Hollway on overseas trips, was negligible and has been absorbed.

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2. The total cost to DEWHA for Mr Hollway's travel since the commencement of his engagement to 24 February 2010 is \$16,161.59.

From 5 October 2008 to 19 March 2009, while Mr Hollway's contract was being managed by DEWHA, the total cost of Mr Hollway's travel was \$65,420.41 as itemised below at **Table A**. This amount was reimbursed by DFAT from funding received in Additional Estimates 2008-09 and therefore the cost to DEWHA was \$0.

**TABLE A**

<b>Date</b>	<b>Country/s Visited</b>	<b>Envoy Travel</b>	<b>DEWHA Accompanying officers</b>	<b>Other</b>	<b>TOTAL</b>
5-12 Oct 2008	Japan, USA	\$20,670.99	\$15,549.20		\$36,220.19
14-15 Oct 2008	Canberra	\$325.81			\$325.81
14-15 Oct 2008	Canberra	\$73.73			\$73.73
21-23 Oct 2008	Canberra	\$1,319.35			\$1,319.35
28-30 Oct 2008	Japan	\$7,408.76	\$7,149.02		\$14,557.78
31-Oct-08	Canberra	\$684.81			\$684.81
7-Nov-08	Canberra	\$162.72			\$162.72
14-Nov-08	Sydney	\$26.99			\$26.99
25-Nov-08	Canberra	\$49.02			\$49.02
9-10 Dec 2008	Melbourne	\$1,012.26	\$1,099.70		\$2,111.96
14-15 Jan 2009	New Zealand	\$3,028.43	\$2,727.25		\$5,755.68
13 Feb-3 Mar 2009	Africa/Europe /Japan	\$30,657.54	\$27,663.80	\$290.91	\$58,612.25
	<b>Total</b>	<b>\$65,420.41</b>	\$54,188.97	\$290.91	\$119,900.29

Under administrative arrangements agreed to by DEWHA and DFAT from 1 July 2009 onwards, the total cost to DEWHA for Mr Hollway's travel is \$16,161.59 as itemised in **Table B** below. Note that costs were shared equally between DEWHA and DFAT.

**TABLE B**

<b>Envoy travel costs contract extension (1 Jul - 30 Sep 2009)</b>				
<b>Dates</b>	<b>Location</b>	<b>Envoy Travel</b>	<b>DEWHA accompanying officers</b>	<b>Total</b>
30-31 Jul 2009	New Zealand	\$3,090.12	\$4,694.62	\$7,784.74
26 Aug – 4 Sep 2009	Germany, Iceland, USA, Mexico	\$29,233.06	\$26,369.01	\$55,602.07
	<b>Total</b>	<b>\$32,323.18</b>	\$31,063.63	\$63,386.81

The total cost of DEWHA officials accompanying Mr Hollway up to 24 February 2010 is \$102,550.77.

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3. Other costs to DEWHA include SES domestic travel costs of \$574.63 prior to the beginning of Mr Hollway's engagement. The purpose of this travel was to meet with Mr Hollway and brief him on the appointment.