INTERNATIONAL DOLPHIN CONSERVATION PROGRAM

SCIENTIFIC ADVISORY BOARD

3RD MEETING

LA JOLLA, CALIFORNIA (USA)
17 OCTOBER 2005

MINUTES OF THE MEETING

AGENDA

	Documents
1. Opening of the meeting	
2. Adoption of the agenda	
3. Adoption of the minutes of the second meeting of the SAB	
4. Consideration of frequency of future meetings	
5. Review of proposed data screening method	IRP-39-08b
6. Report from Workshop on calculation standard for Minimum Estimated Abundance for each stock of dolphins	
7. Review of the SAB work plan	SAB-03-06
8. Other business	
9. Place and date of next meeting	
10. Adjournment	

APPENDICES

1. List of attendees
2. Plan of work

The third meeting of the Scientific Advisory Board (SAB) was held in La Jolla, California, on 17 October 2005. The attendees are listed in Appendix 1.

1. Opening of the meeting

Dr. Robin Allen, Director of the IATTC, welcomed the participants, and noted that several Board members were unable to attend.

2. Adoption of the agenda

The group added, under new agenda item 3, the approval of the minutes of the second meeting of the SAB. The group also added, under agenda item 8, *Other business*, a discussion of the SAB involvement with bycatch produced in the fishery on fish-aggregating devices (FADs). The agenda was then adopted as amended.

3. Adoption of the minutes of the second meeting of the SAB

Dr. Dreyfus suggested changes to item 3a. The minutes were then adopted as amended.

4. Consideration of frequency of future meetings

The Meeting of the Parties to the AIDCP requested the advice of the SAB as to the frequency and timing of future meetings of the SAB. Dr. Allen reminded the group that it is most convenient and cost-effective to schedule meetings in conjunction with AIDCP and IATTC meetings, particularly in regards to the availability of simultaneous translation. The SAB recommended that the group meet annually, in conjunction with the June meetings. If an additional meeting is required in the interim, the Director will

schedule it in conjunction with the October meetings.

5. Review of proposed data screening method

Dr. Allen explained that the IRP had requested the advice of the SAB on this issue. The performance of vessels is reviewed for the assignment of DMLs, and that of captains to recognize the three captains with the best records in minimizing dolphin mortality each year. A screening method was proposed so that unusual observer data would not be included in these two performance evaluations.

Dr. Lennert-Cody reviewed the submitted manuscript *Statistical Learning Procedures for Monitoring Regulatory Compliance: An Application to Fisheries Data*, which describes the proposed data screening procedure. The procedure is based on developing a collection of classification trees (a "forest") that are used to predict whether any mortality occurred in dolphin sets, using 36 predictor variables. The most important variables were duration of backdown, occurrence of net canopies, number and species of dolphins encircled, amount of tuna encircled, and year. The procedure was used to identify those dolphin sets for which observer data should be further screened. This determination is based on the presence of large negative residuals which indicate that no dolphin mortality was reported but that there was strong prediction from the forest that dolphin mortality had occurred.

After discussion, it was decided to recommend that the IRP adopt the screening technique for purposes of evaluating the performance of vessels and captains.

6. Report from Workshop on calculation standard for Minimum Estimated Abundance for each stock of dolphins

Dr. Allen reviewed the Report from the Technical Workshop on calculating the minimum estimated abundance (N_{min}) of dolphin stocks of the eastern Pacific Ocean (EPO), held in August 2005 in La Jolla. The Workshop examined several options for calculating N_{min}, and recommended using a logistic model that incorporated the data from 1986-2003. The SAB decided to defer making a recommendation to the Parties until its next meeting in June 2006, so that the members could have more time to evaluate the Workshop Report. The SAB will also consider then whether to recommend that N_{min} estimates and SMLs should be updated as soon as new abundance estimates become available.

One of the issues raised by the Workshop Report was the problem of common dolphin abundance estimates that have changed dramatically in the past, due to movements of the dolphins in and out of the area of the fishery. The Secretariat, in cooperation with other scientists, is continuing to work on calculating N_{min} estimates appropriate for common dolphin stocks. The SAB recommended that a group of these scientists be set up that could inform the SAB by correspondence of the progress of their analyses. Dr. Hall suggested that studies of exchange rates between the eastern tropical Pacific and central California would be important to assess the status of the northern stock of common dolphins, and satellite tracking, or other methods, could be used to follow changes in dolphin distribution during El Niño events.

7. Review of the SAB work plan

Dr. Allen presented Document SAB-3-06 which described the current work plan of the SAB.

1. **Cow-calf separation**: Dr. Reilly offered the use of the NMFS time series of aerial photographs of dolphin herds for examination of the movements of cow-calf pairs within the herds. He noted that the NMFS will be switching to use of a land-based airplane rather than a helicopter until at least 2009. It was suggested that future studies could perhaps incorporate a video camera to detect potential evidence of calf separation.
2. **Stress effects**: It was decided to group this topic with life history sampling (Work Plan item 6 below). It was decided that the life history sampling program has been sufficiently described that an implementation plan is not needed and progress should be made on this research as soon as possible.

3. **Current abundance estimates:** The SAB will consider the recommendations of the N_{min} workshop at its next meeting in June 2006.

4. **Ecosystem effects**: Dr. Reilly announced that NMFS is attempting to recover data from the EASTROPAC surveys conducted in the late 1960s. A graduate student has been contracted to recover and analyze these historical data, which may allow comparison of environmental conditions prior to the oceanic regime shift in the 1970s. An update will be presented at the next meeting of the SAB.

5. **Mortality estimates**: Dr. Allen noted that the IATTC has received a contract from NMFS to place, on a voluntary basis, observers aboard Class-5 vessels, and to monitor unloadings to determine to what extent, if any, smaller vessels set on large tuna typically associated with dolphins. Dr. Hall also noted that observations from longline vessels in the EPO have provided evidence of incidental captures of small numbers of dolphins, but not of the stocks associated with the purse-seine fishery. The dolphins were released alive. Item 5.B.2, "New technology," will be removed from the Work Plan, as it is mainly a compliance issue rather than a scientific one.

6. **Life history studies:** See Work Plan item 2.

7. **Stock assessment of coastal spotted dolphins**: This item is closely associated with Work Plan item 3, and should follow it in the Work Plan. The planning of the proposed joint survey is being led by Mexico, and was discussed at recent U.S. and Mexico bilateral meetings. Dr. Compean was not available to present the survey plan to the SAB. It was proposed that the project leaders provide the SAB with progress reports to facilitate international cooperation on this research.

8. **Population modeling**: Dr. Hoyle of the Secretariat and Dr. Watters of the NMFS are currently developing population and assessment models. Population models were also evaluated by the N_{min} Workshop.

9. **Gear technology and fishing techniques to improve dolphin release**: Dr. Dreyfus announced that Mexico is conducting more research on net panels (9a), and that Dr. Lennert-Cody of the Secretariat has provided suggestions regarding the experimental design and offered to participate in the analysis of the data. The use of jet skis for dolphin rescue (9b) has been established in the fleet and their use is spreading. Net profilers (9c) may still be too costly for widespread use.

10. **Capture of mature tuna not in association with dolphins**: It was recommended that the large-scale tagging research (10b) be should be listed separately, as it can tie in with several other items and not just the capture of tunas unassociated with dolphins.

11. **Passively induced transponders (PIT) for tagging of dolphins:** The 2nd meeting of the SAB endorsed the concept in principle, and the proposers were encouraged at this meeting to develop more concrete plans.

With the modifications and corrections proposed at the meeting, the Plan of Work was approved.

8. Other business

Mr. Delgado proposed that, under the terms of the AIDCP, the SAB should consider the issue of bycatch associated with the fishery for tunas with FADs in the EPO. Some members agreed, while others pointed out that the IATTC had created a working group on the subject, and taking on this matter within the SAB could be a duplication of effort. The SAB decided to request guidance from the Meeting of the Partiesas to whether the SAB should be given a mandate to consider research on bycatch issues other than those associated with dolphins.

9. Place and date of next meeting

The next meeting of the SAB will take place in June 2006 in Pusan, Korea.

10. Adjournment

The meeting was adjourned on October 17, 2005.

Appendix 1.

INTERNATIONAL DOLPHIN CONSERVATION PROGRAM
PROGRAMA INTERNACOINAL PARA LA CONSERVACIÓN DE LOS DELFINES

SCIENTIFIC ADVISORY BOARD - CONSEJO CIENTÍFICO ASESOR

3RD MEETING – 3ª REUNIÓN

17 OCT 2005
LA JOLLA, CALIFORNIA (USA)

ATTENDEES - ASISTENTES

MEMBERS - MIEMBROS

JAVIER ARÍZ TELLERÍA
Instituto Español de Oceanografía
MICHEL DREYFUS
Instituto Nacional de la Pesca de México
ALVIN DELGADO
Programa Nacional de Observadores de Venezuela
STEVE REILLY
U.S. National Marine Fisheries Service

OBSERVERS - OBSERVADORES

ENRIQUE DE CÁRDENAS
Instituto Español de Oceanografía
MANUEL CORREA
Programa Nacional de Observadores de Venezuela
JIM JOSEPH
JESSICA KONDEL
JEREMY RUSIN
U.S. National Marine Fisheries Service
LUIS TORRES
Ministerio de Comercio Exterior, Industrialización, Pesca y Competitividad, Ecuador

SECRETARIAT– SECRETARÍA

ROBIN ALLEN, Director
MARTIN HALL
BRIAN HALLMAN
SIMON HOYLE
CLERIDY LENNERT-CODY
MICHAEL SCOTT

Appendix 2.

INTERNATIONAL DOLPHIN CONSERVATION PROGRAM

SCIENTIFIC ADVISORY BOARD

3RD MEETING

LA JOLLA, CALIFORNIA (USA)
17 OCTOBER 2005

WORK PLAN

	Research Topics	Proposed Studies	SAB Recommendations
1.	Prevalence and significance of cow-calf separation.	A) Aerial photogrammetry B) At-sea observations C) Spatial distribution of chase time	A-C) Conduct research to discover evidence of cow-calf separation during chase.
2.	Life history and fishery-related stress effects studies.	A) Life history studies 1) Reproductive parameters/ vital rates 2) Food habits 3) Trophic interactions B) Stress effects 1) Necropsy studies	A-B) Resume sampling program to conduct studies on these topics.
3.	Review of currently available estimates of abundance for dolphin stocks.	A) Review current abundance estimates	A) Review N_{min} Workshop recommendations
4.	Stock assessment of coastal spotted dolphins	A) Genetics and taxonomy research B) Historical mortality, abundance, and status of any new stocks.	A-B) Maintain on SAB Work Plan.
5.	Ecosystem effects.	A) Trends in other EPO cetaceans B) Predator-pray models C) Effect of large-scale changes in 1970s D) Carrying capacity and R_{max} for dolphins	A-D) Maintain on SAB Work Plan.
6.	Mortality estimates.	A) Historical mortality estimates. B) Potential unobserved sources of mortality 1) Comparison of observer programs 2) Class-5 vessels. 3) Other fisheries.	A) Review historical estimates B) Monitor ongoing comparisons for IRP[1] and maintain on SAB Work Plan.

[1] Pending consultation with the Parties regarding confidentiality issues.

7. Population modeling	A) Model effects of unobserved mortality B) Other population models	A) Expand NMFS simulation studies to prioritize research. B) Maintain on SAB Work Plan
8. Development in gear technology and fishing techniques to improve dolphin release.	A) Net panels B) Jet skis and other rescue craft C) Net profilers	A-C) Widen studies, particularly for rescue craft and net profilers
9. Capture of mature tuna not in association with dolphins.	A) Simultaneous tracking of dolphins and tuna	A) Maintain on SAB Work Plan
10. Large-scale tagging of tunas	A) Abundance estimates B) Movement patterns	A-B) Maintain on SAB Work Plan
11. Passively induced transponder (PIT) tagging of dolphins	A) Abundance estimates B) Movement patterns	A-B) Develop research plan