

AGREEMENT ON THE INTERNATIONAL DOLPHIN CONSERVATION PROGRAM

SCIENTIFIC ADVISORY BOARD

4TH MEETING

BUSAN (KOREA)
22 JUNE 2005

DOCUMENT SAB-04-04

WORK PLAN

The attached work plan (Appendix A), to be reviewed at the fourth meeting of the Scientific Advisory Board (SAB) in June 2006, was prepared at the third meeting of SAB in October 2005, on the basis of the previous work plan (Appendix B). The work currently being done on each topic is as follows.

1. Prevalence and significance of cow-calf separation

Dr. Liz Edwards, of the US National Marine Fisheries Service (NMFS), has published a paper entitled "Duration of unassisted swimming activity for spotted dolphin (*Stenella attenuata*) calves: Implication for mother-calf separation during tuna purse-seine sets"¹. Another paper by Noren *et al.* entitled "Echelon position increases swim speed and reduces locomotor effort of dolphin calves" is currently in review. Noren *et al.* are also currently preparing a manuscript entitled "Swimming kinematics of dolphin calves (*Tursiops truncatus*) 1-24 months post-partum."

2. Life history and fishery-related stress effects studies

While funding has not yet been obtained for this study, the Secretariat has been inventorying required equipment obtained for past studies to begin a preliminary sampling study. Analyses of the samples, however, will need to wait for additional funding and an adequate sample size of specimens.

3. Review of currently available estimates of abundance for dolphin stocks

The review of the recommendations of the Technical Workshop on N_{min} , held in August 2005, was originally scheduled for the third SAB meeting but was postponed until the current meeting. The Workshop recommended to the SAB a new method for calculating N_{min} based on logistic models². The SAB should discuss whether to adopt the Workshop's recommendations.

Another NMFS cruise is scheduled for 2006 to estimate new abundances for dolphin populations. The surveys will focus on estimating abundances for the northeastern spotted and eastern spinner dolphins.

4. Stock assessment of coastal spotted dolphins

This study is pending until 2007, within the MEXUS-PACIFICO agenda, and with the aim of obtaining the support of other countries of the eastern tropical Pacific through the IATTC-AIDCP.

5. Ecosystem effects

Dr. George Watters of the NMFS is currently working on multi-species population models.

6. Mortality estimates

The Secretariat presented its annual comparison of the components of the On-Board Observer Program³ at the 40th meeting of the IRP in October 2005, and is also working on a data screening algorithm⁴ in cooperation with national programs. The NMFS has provided funding to the IATTC for placing observers on a sample of Class-5 and smaller vessels and to sample the unloadings of all such vessels.

¹ <http://fishbull.noaa.gov/1041/edwards.pdf>

² <http://www.iattc.org/PDFFiles2/Nmin-Workshop-Report-Aug-2005.pdf>

³ <http://www.iattc.org/PDFFiles2/IRP-40-12-Observer-program-comparison.pdf>

⁴ <http://www.iattc.org/PDFFiles2/IRP-39-08b-Measurement-of-performance.pdf>

Governmental approvals have not yet been received to place observers aboard vessels, but IATTC personnel are currently monitoring unloadings to sample tuna lengths in Ecuador.

7. Population modeling

Drs. Simon Hoyle of the IATTC and George Watters of the NMFS are revising and updating previous analyses of dolphin population trends.

8. Development in gear technology and fishing techniques to improve dolphin release

Regarding the *alermes* (net panel) project, there were no trips in 2006 that used them; currently the Mexican tuna-dolphin program in Ensenada has three sets of alermes that will be used after the season for bluefin.

11. Passively induced transponder (PIT) tagging of dolphins

A research plan has been developed and funding for a feasibility study was explored. However, personnel changes at Biomark, a company that produces PIT tags and that had shown interest in a joint research and development project in the past, have now put in doubt the possibility of conducting such a study without a large amount of funding to finance PIT tag detector construction.

Appendix A. SAB Work Plan for 4th Meeting, June 2006

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 Work Plan.
5. Ecosystem effects.	A) Trends in other EPO cetaceans B) Predator-prey models C) Effect of large-scale changes in 1970s D) Carrying capacity and R_{max} for dolphins	A-D) Maintain on 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 ⁵ and maintain on Work Plan.
7. Population modeling	A) Model effects of unobserved mortality B) Other population models	A) Expand NMFS simulation studies to prioritize research. B) Maintain on 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) Netprofilers	A-C) Widen studies, particularly for rescue craft and netprofilers
9. Capture of mature tuna not in association with dolphins.	A) Simultaneous tracking of dolphins and tuna	A) Maintain on Work Plan
10. Large-scale tagging of tunas	A) Abundance estimates B) Movement patterns	A-B) Maintain on Work Plan
11. Passively induced transponder (PIT) tagging of dolphins	A) Abundance estimates B) Movement patterns	A-B) Develop research plan

⁵ Pending consultation with the Parties regarding confidentiality issues.

Appendix B. SAB Work Plan for 3rd Meeting, October 2005

	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.	Stress effects.	A) Necropsy studies B) CHESS studies	A) Resume sampling program that would include stress-related necropsy research B) Remove from Work Plan.
3.	Review of currently available estimates of abundance for dolphin stocks.	A) Review current abundance estimates B) Reevaluate N min	A-B) Authorize working group to examine both of these topics so that the SAB can provide recommendations to the MOP.
4.	Ecosystem effects.	A) Trends in other EPO cetaceans B) Predator-prey models C) Effect of large-scale changes in 1970s D) Carrying capacity + R _{max} for dolphins	A-D) Maintain on Work Plan.
5.	Mortality estimates.	A) Historical mortality estimates. B) Potential unobserved sources of mortality 1) comparison of observer programs 2) new technology for monitoring mortality 3) Class-5 vessels. 4) Other fisheries.	A) Review historical estimates B) Monitor ongoing comparisons for IRP ⁶ and maintain on Work Plan.
6.	Life history studies.	A) Life history studies 1) Reproductive parameters/ vital rates 2) Food habits 3) Trophic interactions	A) Resume sampling program to conduct studies on these topics.
7.	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 Work Plan.
8.	Population modeling	A) Model effects of unobserved mortality B) Other population models	A) Expand NMFS simulation studies to prioritize research. B) Maintain on Work Plan
9.	Development in gear technology and fishing techniques to improve dolphin release.	A) Net panels B) Stephenson boleadoras C) Jet skis and other rescue craft D) Net profilers	A-D) Widen studies, particularly for rescue craft and net profilers
10.	Capture of mature tuna not in association with dolphins.	A) LIDAR B) Simultaneous tracking of dolphins and tuna C) Large-scale tagging	A) Request for NMFS update. B) Maintain on Work Plan C) Add to Work Plan

¹ Pending consultation with the Parties regarding confidentiality issues.