Appeal No. 02-1224

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

DEFENDERS OF WILDLIFE, EARTH ISLAND INSTITUTE, THE HUMANE SOCIETY OF THE UNITED STATES, ENVIRONMENTAL SOLUTIONS INTERNATIONAL, ANIMAL WELFARE INSTITUTE, INTERNATIONAL WILDLIFE COALITION, AMERICAN HUMANE ASSOCIATION, EARTHTRUST, GREENPEACE FOUNDATION, ANIMAL FUND, AMERICAN SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS, SIERRA CLUB, SAMUEL LABUDDE, and CRAIG VAN NOTE,

Plaintiffs-Appellants,

and

FUND FOR ANIMALS and DAVID BROWER,

Plaintiffs,

v.

WILLIAM T. HOGARTH, Assistant Administrator for Fisheries, National Oceanic and Atmospheric Administration, DONALD L. EVANS, Secretary of Commerce, UNDER SECRETARY OF COMMERCE, Administrator of the National Oceanic and Atmospheric Administration, ASSISTANT SECRETARY, National Oceanic and Atmospheric Administration, SECRETARY OF STATE, SECRETARY OF THE TREASURY, and COMMISSIONER OF THE UNITED STATES CUSTOMS SERVICE,

Defendants-Appellees.

On Appeal from the United States Court of International Trade in
Case No. 00-02-00060, Judge Judith M. Barzilay

BRIEF OF AMICI
DR. ALBERT MYRICK & ORCALAB
IN SUPPORT OF PLAINTIFFS-APPELLANTS

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UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

Defenders of Wildlife, et al. v. William T. Hogarth, et al.

No. 02-1224

Certificate of Interest and Corporate Disclosure Statement

Counsel for Amici Dr. Albert Myrick and OrcaLab, pursuant to Federal Circuit Rule 47.4 and Federal Rule of Appellate Procedure 26.1, certify the following:

1. The full name of every party or amicus represented by me is:

Dr. Albert Myrick
OrcaLab

2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

None.

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

None.

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

Brian B. O'Neill, Faegre & Benson, LLP
Colette B. Routel, Faegre & Benson, LLP

May 6, 2002
Date

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Brian B. O'Neill

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ISSUE PRESENTED

The National Environmental Policy Act ("NEPA") requires federal agencies to take a "hard look" at the environmental consequences of activities they perform, fund, or permit, and analyze any alternatives that may mitigate or lessen environmental impacts. On January 3, 2000, the National Marine Fisheries Service ("NMFS") issued an Interim-Final Rule permitting United States tuna fishermen to use purse seine net fishing in the eastern Pacific Ocean ("ETP"), and loosening the requirements for both the importation of tuna into the United States and "dolphin-safe" tuna labels. In adopting these regulations, however, the NMFS failed to consider a number of environmental impacts, including (1) the large number of unobserved dolphin deaths caused by purse seine fishing techniques, (2) the serious overfishing problems that plague the ETP, and (3) alternative technologies that can identify tuna while simultaneously protecting dolphins and other marine wildlife species. Did the NMFS violate NEPA by failing to consider and analyze the environmental consequences and alternatives to the regulation?

INTEREST OF AMICI

Dr. Albert Myrick

Dr. Albert Myrick served as a Research Wildlife Biologist for 18 years with NMFS's Southwest Fisheries Science Center ("the Center"). While at the Center, Dr. Myrick's work focused exclusively on the impact commercial fishing in the ETP had on dolphins, and included observer training, cetacean field identification, dissection and

sampling protocol, age determination, population dynamics, reproductive biology, and dolphin stress pathophysiology. As leader of the Dolphin Stress Physiology Project, he was the senior author on most of the research papers emanating from the Center that examined the fishery's acute and chronic stress effects on the associated dolphin populations. Dr. Myrick holds a Ph.D. and an M.A. in Biology from the University of California, Los Angeles. He has authored 30 published papers on dolphins and has received numerous academic awards.

OrcaLab

OrcaLab is a whale research station located on Hanson Island in the Johnstone Strait area of northern Vancouver Island, Canada. Dr. Paul Spong is its director. Established in 1970, OrcaLab is a permanent research facility dedicated to the study of the northern resident community of British Columbia orca whales, as well as other marine mammals. Its methodology is non-intrusive; acoustic data is obtained through a network of remote hydrophone stations, and visual data is gathered by land-based observation and reports from a network of experienced observers. Via the Internet (www.orca-live.net), OrcaLab's data is accessible to people around the world. Dr. Spong has published in the scientific literature, appeared as an expert witness in court proceedings, given public lectures, and appeared in television programs. He has an international reputation as an expert in the field of cetacean research and conservation.

STATEMENT OF FACTS

A. Purse-seine fishing in the ETP

For reasons that are still not totally understood, schools of mature yellowfin tuna frequently associate with pods of dolphins in the ETP[1]. Fishermen have long been known to exploit this relationship by spotting dolphins when they surface for air in order to catch the yellowfin tuna that swim below. For many years, fishermen used traditional hooks and lines to catch the tuna, a method that was both ecologically benign and economically viable. In the late 1950s, however, a new fishing technique was introduced to the ETP: purse seine nets.

Tuna fishermen using purse seine fishing technology begin by locating dolphins swimming along the ocean's surface. Motorboats, helicopters, and small explosives called "seal bombs" are then used to herd the dolphins and drive both dolphins and tuna to the surface. This "chase phase" lasts anywhere from 20 minutes to several hours. The fishing vessel eventually encircles the disoriented animals with a net, and uses a winch to draw together the edges of the net like a purse. Although this technique enables thousands of pounds of tuna to be caught at one time, large numbers of dolphins are also caught in the nets and drown before they can be released. In fact, purse seine

[1] The ETP is a seven million square mile oceanic area stretching from the coast of southern California to Peru, and out into the high seas at 160 degrees West longitude.

fishery practices in the ETP have resulted in the deaths of more than seven million dolphins.[2]

B. The Marine Mammal Protection Act

Congress, outraged with the number of dolphin deaths caused by the yellowfin tuna fishing industry in the ETP, enacted the Marine Mammal Protection Act ("MMPA") in 1972. Pub. L. No. 92-522, 86 Stat. 1027 (codified as amended at 16 U.S.C. § 1361-1407). The Act required that all marine mammal populations be managed to maintain their "optimum sustainable population" ("OSP"), or the number of animals that will result in the maximum productivity of the population or species. 16 U.S.C. §§ 1361(2), 1362(9).[3] The "taking"[4] of marine mammals therefore required a federal permit, and permits could not be issued without determining that the taking would not "disadvantage" the species or stock involved. 16 U.S.C. §§ 1373(a)-(d), 1374.

Dolphins taken incidentally during tuna fishing were subject to this general scheme, with some additional provisions. The U.S. tuna fleet was given a two-year

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[2] See The Provisions of the International Dolphin Conservation Act, How It Is Affecting Dolphin Mortality, and What Measures Can Be Effected to Keep the Mortality to a Minimum: Hearings Before the Subcomm. on Fisheries, Wildlife and Oceans of the House Comm. on Resources, 104th Cong., 1st & 2d Sess. 60 (1996).

[3] Populations or species that fell below their OSP were to be declared "depleted." 16 U.S.C. § 1362(1)(A).

[4] The term "take" was defined as any attempt to "harass, hunt, capture or kill" any marine mammal. 16 U.S.C. § 1362(13).

exemption from the OSP management regime to provide the industry with sufficient time to develop solutions to the dolphin mortality problem. The two-year exemption was followed, however, by a declaration that the "immediate goal" of the MMPA was to reduce the incidental kill and serious injury of dolphins in the fishery to "insignificant levels approaching a zero mortality and serious injury rate." 16 U.S.C. § 1371(a)(2). U.S. vessels were required to accept on-board observers, 16 U.S.C. § 1381(d), comply with gear and practice requirements, 16 U.S.C. § 1381(a)-(b), and remain within fleet-wide mortality limits established by the NMFS.[5] 16 U.S.C. § 1374; Regulation Governing the Taking and Importing of Marine Mammals, 42 Fed. Reg. 64,548 (1977). These provisions helped reduce observed dolphin mortality from an estimated 300,000 dolphins per year in 1972, to a little over 25,000 animals per year in 1977. Eugene Buck, Congressional Research Service Issue Brief of Comm. For Nat'l Inst. Of Env't 96011: Dolphin Protection and Tuna Seining, at 2; 1994 NMFS Ann. Rep., app.C.

C. MMPA Amendments of 1984, 1988, 1990, and 1992

Although the MMPA initially produced dramatic results, reductions in the number of incidental fishing-related dolphin mortalities came to an abrupt halt during the 1980s. In 1980, the NMFS issued a 5-year static mortality limit of 20,500 dolphins per year. Taking of Marine Mammals Incidental to Commercial Fishing Operations, 42

[5] The task of implementing the MMPA with respect to commercial fisheries fell to the NMFS, a sub-agency of the National Oceanic and Atmospheric Administration. See e.g., 16 U.S.C. § 1362(12), 1371, 1373, 1378.

Fed. Reg. 72,178 (1980). This mortality limit was then indefinitely extended by Congress in the 1984 Amendments to the MMPA. Pub. L. No. 98-364, 98 Stat. 440 (1984). Static standards produced static performance, and U.S. fleet kill rates remained just under this mortality limit for most of the 1980s. In actuality, mortality per ton of tuna caught by the U.S. fleet *rose* substantially during the decade, because the mortality limit was applied without adjustment to a rapidly shrinking U.S. fleet.

In 1988, however, public concern over purse seine fishing techniques once again gained national media attention when Sam La Budde, a biologist and environmental activist, released a dramatic videotape he recorded while aboard a Panamanian tuna vessel. The video showed large numbers of dolphins drowning in fishing nets. Marine Mammal Protection Act Reauthorization Hearings before the National Ocean Policy Study of the Senate Comm. on Commerce, Science, and Transp., 100th Cong. 98, 100 (1988). Congress quickly reacted by passing the 1988 MMPA Amendments. Pub. L. No. 100-711, 102 Stat. 4766. Recognizing that the foreign fleet now dominated the ETP tuna fishery, these amendments imposed mandatory embargoes on tuna imports from countries who failed to meet U.S. dolphin conservation standards.[6]

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[6] The 1984 MMPA Amendments had previously required, as a condition of imports, that the government of each harvesting nation adopt a regulatory program "comparable" to the MMPA, and that its fleet achieve a "comparable" dolphin kill rate. 16 U.S.C. § 1371(a)(2)(B). Congress, however, left the definition of "comparable" to agency regulation, and the NMFS did not issue final regulations until March 1988.

Public concern also had an effect on U.S. tuna canneries. In April 1991, the Heinz company, which markets tuna under the "StarKist" label, announced it would no longer purchase any tuna caught by chasing and encircling dolphins. Within weeks, all other major U.S. brands had followed suit, marketing only "dolphin-safe" tuna. Tuna Boycott Victory: How a Small Environmental Group Took on the Multi-Billion-Dollar Tuna Industry, and Won!, National Boycott News, Winter 1992/1993, at 25. Congress supported this movement, first by making it illegal to use the term "dolphin-safe" (or any other term suggesting that tuna was caught in a manner not harmful to dolphins) if the tuna was harvested on a trip in which dolphins had been encircled, see Fishery Conservation Amendments of 1990, Pub. L. No. 101-627, 104 Stat. 4436 (1990) (repealed), and later, by categorically banning the sale of all non-"dolphin-safe" tuna in the United States. International Dolphin Conservation Act of 1992, Pub. L. No. 102-523, 106 Stat. 3425 (1992).

As a result of these amendments to the MMPA, the United States eventually imposed embargoes on tuna from Colombia, the Congo, Costa Rica, El Salvador, Italy, Japan, Mexico, Panama, Peru, Senegal, Spain, the USSR, Vanuatu, and Venezuela. 53 Fed. Reg. 8,911 (1988); Taking and Importing of Marine Mammals: Notice of Embargo and Revocation of Findings, 56 Fed. Reg. 26, 995 (1991); Earth Island Inst. v. Mosbacher, 746 F. Supp. 964 (N.D. Cal. 1990), aff'd, 929 F.2d 1499 (9th Cir 1991). In turn, foreign countries become increasingly vocal about their opposition to the MMPA. Mexico, the Netherlands, and the European Community each asked a General

Agreement on Tariffs and Trade (GATT) arbitral dispute panel to address the issue. Although the dispute panels concluded that the U.S. tuna embargoes violated the GATT, these decisions were never adopted by the full GATT and the United States continued to enforce the MMPA as written. Eventually, however, international pressure led the United States to negotiate a series of international agreements regarding tuna fishing in the ETP.

D. The Panama Declaration and the International Dolphin Conservation Program Act

In 1995, the United States and eleven other countries signed the Panama Declaration ("the Declaration"). In this agreement, the twelve signatories made affirmative commitments to strengthen the protection of dolphins by (1) reducing dolphin mortality in the ETP to levels approaching zero; (2) establishing annual dolphin mortality limits; (3) creating incentives for vessel captains; and (4) enhancing the compliance of participating nations to these commitments. The Declaration anticipated that the United States would lift embargoes for tuna caught in compliance with its terms, open the U.S. market to signatory states, and revise the term "dolphin-safe" to include tuna caught by purse seine fishing techniques, so long as no dolphin deaths occurred during the set. The Declaration was not self-executing, however, and could not become a legally-binding domestic instrument unless Congress amended U.S. law.

In 1997, Congress gave effect to certain provisions of the Panama Declaration by adopting amendments to the MMPA known as the International Dolphin Conservation Program Act ("IDCPA"). Pub. L. No. 105-42, 111 Stat. 1122 (1997). The IDCPA

provided that a nation would be permitted to export tuna to the United States if it provided documentary evidence that (a) it participates in the IDCP and is a member of the Inter-American Tropical Tuna Commission ("IATTC"); (b) it meets its obligations under the IDCP and the IATTC; and (c) it does not exceed certain annual dolphin mortality limits. 16 U.S.C. § 1371(a)(2)(B).

The IDCPA also addressed "dolphin-safe" labeling under the MMPA. During congressional hearings, environmental groups strenuously objected to any modifications in the "dolphin-safe" definition, noting that dolphin mortalities caused by purse seine fishing are routinely underestimated, because observers do not record the deaths of dolphins who die outside the nets as a result of injuries sustained in the chase, mother-calf separation, and other fishery-related causes. Additionally, studies indicated that the stress of repeated chase and encirclement might be impairing dolphin reproductive functions.[7] In light of these concerns, Congress deferred any changes in the dolphin-safe label until further research could be conducted. The IDCPA directed the Secretary of Commerce to make an initial finding by March 1999, of "whether the intentional deployment on or encirclement of dolphins with purse seine nets is having a significant adverse impact on any depleted dolphin stock in the eastern tropical Pacific Ocean." 16

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[7] See e.g., Tuna Dolphin Issues: Hearings to Obtain Testimony on H.R. 2823, International Dolphin Conservation Act and H.R. 2856, International Dolphin Protection and Consumer Information Act of 1995, Before the Subcomm. on Fisheries and Wildlife and Oceans of the House Comm. on Resources, 104th Cong., 2d Sess. 321 (1996).

U.S.C. § 1385(g)(2). Only if the March 1999 finding was negative (i.e. no finding of significant adverse impact) would the no-encirclement definition of dolphin-safe be changed to the definition contemplated in the Panama Declaration. 16 U.S.C. § 1385.

E. The Current Controversy: NMFS's implementing regulations

On June 14, 1999, the NMFS published proposed regulations in the Federal Register to implement the IDCPA. Taking of Marine Mammals Incidental to Commercial Fishing Operations: Tuna Purse Seine Vessels in the Eastern Tropical Pacific Ocean (ETP), 64 Fed. Reg. 31806 (June 1999) ("Proposed Rule"). Under these regulations, United States fishing vessels would be permitted to fish for tuna in the ETP using purse seine fishing techniques, and embargoes on foreign tuna would be lifted so long as those countries complied with the provisions of the IDCPA. Additionally, the regulations provided that tuna should be considered "dolphin safe" under the Act, even though it was caught using purse seine techniques, if no dolphins were observed killed in that particular set.

Pursuant to NEPA, the NMFS published an Environmental Assessment ("EA") analyzing the potential environmental impacts of the proposed rule. The October 1999 EA concluded that allowing purse seine fishing in the ETP would not have a significant negative impact on already depleted dolphin populations. The analysis indicated that although annual dolphin mortalities would likely increase, observed fishing-related deaths had been drastically reduced over the past decade, and therefore, stock-specific mortality limits would not be reached. Amazingly, the EA did not even discuss the

concerns that had been raised during congressional debate over the IDCPA: that the number of reported dolphin deaths grossly underestimates the actual number of deaths because observers do not record the deaths of dolphins who, although not found in the net, later die as a result of injuries sustained in the chase, through mother-calf separation, and stress-related complications. Additionally, the EA failed to discuss overfishing data and alternatives to purse seine fishing technologies.

Despite a clearly inadequate EA, the regulations were adopted in a Record of Decision, which was issued in December 1999. The interim final rule was published in the Federal Register on January 3, 2000, with an effective date of February 2, 2000. Taking of Marine Mammals Incidental to Commercial Fishing Operations: Tuna Purse Seine Vessels in the Eastern Tropical Pacific Ocean (ETP), 65 Fed. Reg. 30 (Jan. 3, 2000) ("Interim-Final Rule").

As biologists involved in the study of marine wildlife and associated fishing issues, amici have long maintained an interest in the ETP fishery and are knowledgeable in the body of science undertaken in this area. Our overall position is that Defendant federal agencies could have and should have done a much more thorough and accurate job analyzing cryptic dolphin kills, overfishing data, and alternative technologies when finalizing and implementing U.S. agency actions pursuant to the International Dolphin

Conservation Program.[8] See, e.g., Robertson v. Methow Valley Citizens Ass'n, 490 U.S. 332, 356 (1989) (NEPA has "twin aims," one of which is to take a "hard look" at the environmental consequences of proposed actions).

ARGUMENT

I. THE NMFS ERRED IN ANALYZING ONLY REPORTED DOLPHIN DEATHS, BECAUSE PURSE SEINE FISHING RESULTS IN POTENTIALLY LARGE NUMBERS OF UNOBSERVED DOLPHIN DEATHS

Despite reductions in *observed* fishery-caused dolphin deaths, scientists agree that depleted dolphin populations have not recovered. Southwest Fisheries Science Ctr., NMFS, Report to Congress 18-21 (1999) [hereinafter 1999 Report to Congress]. The best available scientific evidence, including the NMFS's 1999 Report to Congress, demonstrates that the leading explanation for this discrepancy is the significant number of *unobserved* dolphin deaths resulting from purse-seine fishing operations in the ETP. In particular, scientists have identified four circumstances where under-counting of dolphin deaths is occurring[9]: (1) mother-calf separation, (2) dolphin stress, (3)

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[8] Indicative of Defendants' failure to take a hard look at the fishery is the fact that they have known about the issue of toxic methyl mercury in tuna – especially in uninspected shipments into the U.S. of Mexican tuna – for at least six years and have done little to remedy the situation. Mercury, Power Plants and the Fish We Eat, Clean Air Task Force (2000); Fishing For Trouble: How Congress Would Endanger Pregnant Women by Opening Up U.S. Borders to Contaminated Mexican Tuna, Pure Food Campaign (1996); Michael Lasalandra, State issues new warning on mercury in fish, The Boston Herald, July 25, 2001. See Amici Appendix.

[9] Another commonly recognized cause of unobserved fishing-related dolphin mortalities lies with the observers themselves, either because of 1) observer error (lack of ability to

(continued on next page)

impairment of dolphin reproduction, and (4) lethal muscle and tissue damage to dolphins. Because the NMFS did not consider the impact of these additional fishery-related dolphin deaths, the proposed regulations cannot stand.

A. Mother-Calf Separation

In modern purse seine fishing, the chase and capture of dolphins and tuna is conducted over miles of ocean and usually lasts for 20-40 minutes. B. Curry, Stress in Mammals: the Potential Influence of Fishery-Induced Stress on Dolphins in the Eastern Tropical Pacific Ocean, NMFS Southwest Fisheries Science Center 6 (1999). During the chase, juvenile dolphins, or calves, can become separated from their mothers. Because calves are dependent on their mothers for nutrition, permanent separation will result in their death. Frederick Archer, Tim Gerrodette, et al., Unobserved Kill of Nursing Dolphin Calves in a Tuna Purse-Seine Fishery, 17 Journal of Marine Mammal Science No. 3, July 2001, at 540, 542.

Studies reporting the number of dolphin fatalities resulting from purse seine fishing in the ETP, however, have failed to include deaths caused by mother-calf

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count dead dolphins due to, inter alia, sea conditions, distance from the dolphins, on different deck of fishing vessel, low light, or sinking of dead dolphins), or 2) deliberate falsification of observations (due to intimidation or bribery). See Nancy Kubasek, et al., Protecting Marine Mammals: Time for a New Approach, 13 UCLA J. Envtl. L & Pol'y 1, 5-6 (1994/1995) ("Observers were frequently harassed by the crew of the vessel. For example, in some instances, seal bombs were allegedly set to explode near them to discourage them from reporting correct numbers. More fortunate observers were offered bribes to report lower takes.").

separation. These deaths have gone unreported because studies have relied solely on the number of dolphins actually recovered from the nets. If separation occurs during the fishing process, and the mother is killed without the calf, the resultant calf deaths would remain undetected by fishery observers. Thus, the number of dolphins observed dead in the net would be less than the number actually killed. Id. at 542.

A recent study conducted by the NMFS attempted to calculate the number of calf deaths occurring as a result of mother-calf separation. Using data previously assembled, scientists counted the number of lactating females and calves found dead in a particular fishing net, called a "set." For each set, scientists then determined the number of calves one would have to add to the set to bring the total number of calves equal to the number of lactating females. Id. at 543. The data showed that more lactating females than calves were killed in 31% of spotted-dolphin sets and 18% of spinner-dolphin sets examined. Id. at 545.

As a result of this calf deficit, the study determined that the number of dolphins observed killed in this sample of dolphin sets underestimated the total number of dolphins killed during the fishing process. The study conservatively approximated this underestimation at 10% - 15% for spotted dolphins and 6% - 10% for spinner dolphins. Id. at 551. The study concluded that "it is likely that there has been unobserved nursing calf deaths and hence an underestimation of dolphin kill throughout the history of the fishery." Id. at 552.

Even this recent NMFS study likely underestimates the actual number of calves killed by purse seine fishing. Because the study only examined "permanent" separation (i.e., instances in which the mother was killed in the net), it does not include instances where the mother is later freed from the net, or is simply separated from her calf during the chase, but was unable to reunite with her calf. The EA, however, failed to include any estimates of dolphin mortalities resulting from mother-calf separation.

B. Dolphin Stress

Setting nets on dolphins subjects dolphins to a variety of stress-inducing stimuli. Although the debilitating or lethal effects of stress on land mammals are well-known, they are only now becoming apparent with regard to dolphins. A. Myrick & P. Perkins, Adrenocortical Color Darkness and Correlates as Indicators of Continuous Acute Premortem Stress in Chased and Purse-seine Captured Male Dolphins, Pathophysiology, December 1995, at 191-92. Among these stimuli are "forced high-speed swimming, close pursuit, gear and vessel noise, confinement and crowding." Id. In a 1995 study, NMFS scientists studied the effects of stress on male spinner and spotted dolphins subjected to fishing sets by examining adrenal glands, which, in mammals, are known to change color as a result of negative physiological responses when the animal undergoes acute stress. Id. at 193. The results indicated that virtually all of the dolphins studied had undergone continuous acute stress before death. There was also a highly significant statistical correlation between the length of chases during dolphin fishing and the tissue indicators of increasing continuous acute stress.

Moreover, the authors concluded that "entanglement and death throes were not the primary source of the continuous acute stress." Id. at 201 (emphasis added). In other words, stress caused by the chase and encirclement process itself could have been responsible for the deaths.

Mortality estimates that include only observed dolphin deaths, therefore, would underestimate the number of actual deaths. The 1995 NMFS study concluded that "if acute stress contributed to dolphin mortality, then deaths might occur before some dolphins reached, or after they were released from, the net. Mortality estimates from carcasses in the nets used to assess these populations would then be underestimates." Id. at 191. Releasing dolphins after chasing and netting does not mitigate the deadly effects of physiological stress on dolphins.[10]

An extensive review conducted by NMFS of literature regarding stress in mammals found that the search, chase, and capture process in the ETP tuna fishery has a variety of potential short- and long-term stress effects, including tissue and muscle damage (especially heart muscle damage), compromise to the immune system, impaired reproduction, decreased growth in young dolphins, and disruption of habitat utilization, foraging activities, and social activities. Curry at i, 62. The review concluded that

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[10] In addition, in thousands of cases annually, vessels chase dolphin schools for various periods of time and then break off the chase without deploying the net. These thousands of "no sets," which have never been considered in Defendants' studies of the fishery, can certainly adversely affect dolphin populations by disrupting feeding, nursing, socializing, communication, and reproduction.

"stress resulting from chase and capture in the ETP yellowfin tuna purse-seine fishery could have a population level effect on one or more dolphin stocks." Id. at ii. Again, the EA contained no analysis of this additional source of unreported dolphin deaths.

C. Impairment Of Dolphin Reproduction

Studies indicate that setting nets on dolphins has adverse effects on dolphin reproduction. S. Chivers & A. Myrick, Comparison of Age at Sexual Maturity and Other Reproductive Parameters for Two Stocks of Spotted Dolphin, *Stenella attenuata*, 91 Fish Bulletin 611-618 (1993). In one such study, Chivers and Myrick demonstrated that average age at sexual maturity was significantly older (11.1 years old) in females of more frequently exploited spotted dolphin populations than in those less frequently targeted populations (9.8 years old). Id. at 613-14. Pregnancy rates were also distinctly lower in the more frequently exploited populations. Id. at 615. In heavily targeted populations, one would normally expect a "rebound"–a lowered age of sexual maturity and higher pregnancy rates. The study results indicate that dolphins in the ETP are experiencing continued "pressure."

D. Lethal Muscle And Tissue Damage To Dolphins

Finally, dolphins that are severely injured in tuna nets are not counted as mortalities, despite ample documentation of such injuries. These injuries include having beaks or flippers torn off by nets. Such injuries can become infected or attract sharks through loss of blood, leading to additional mortality not accounted for in observed

mortality data. Even dolphins with severe internal injuries that lead to death are rarely considered mortalities, unless they are observed not moving.

By relying only on reported numbers of dolphin deaths in the ETP, the NMFS underestimated the actual number of dolphin deaths by failing to account for deaths due to mother-calf separation, stress, and lethal muscle and tissue damage caused by purse seine fishing. When coupled with the negative effect of purse seine fishing on dolphin reproduction, it is clear that the EA relied on statistics that grossly underestimate actual dolphin deaths in the ETP, and therefore, its conclusions cannot be considered reliable.

II. NMFS FAILED TO CONSIDER THE EFFECTS PURSE SEINE FISHING WOULD HAVE ON THE ETP, WHICH IS ALREADY PLAGUED BY OVERFISHING

It is not disputed that the ETP suffers from both vessel overcapacity and overharvesting, both of which are causing harm to dolphins and other marine wildlife. The Appellees, however, have failed to consider these overfishing problems when implementing the IDCPA.

A. Vessel Over-Capacity

From 1992 to 1999, the total on vessel storage capacity of the ETP purse seine fleet increased from 100,000 tons to 158,837 tons, an almost 60% increase in less than a decade. Appendix (A) 1725, 1733. The IATTC, however, has stated that a sustainable fleet storage capacity is "no more than 135,000 tons" and "most likely significantly less." A1730. Simultaneously, the efficiency of fishing vessels and operations is improving, as is overall fishing effort in the ETP. A1730-32. As a result, the fishing

effort for most of the world's stocks "is greater than the stocks can support and, even when catch limits are in effect to conserve the resources, the large number of vessels makes it difficult to implement such measures effectively. Tuna fisheries are no exception to this high demand and heavy exploitation; nearly all of the major tuna stocks of the world are fully exploited . . ." A1724.

B. Over-Harvesting

The total estimated catch of the ETP tuna fleet in 1998 was 446,152 metric tons– the second highest since recordkeeping began in 1961 and exceeded only by the 473,778 tons in 1997. A1527. Catch of yellowfin tuna in 1998 was 264,426 metric tons, the highest since 1990, right before major reform changes were instituted by the U.S. industry and Congress that year. Id. In fact, the IATTC reports that overall yellowfin tuna fishing effort has increased at least 27% over the past five years in the ETP, with observed catch of yellowfin tuna also significantly higher. A1541, 1544. In 1999, for example, the catch of 270,000 metric tons in the IATTC's CYRA (yellowfin tuna regulatory area) exceeded the 240,000 metric tons recommended by IATTC science staff. Resolution for Implementing the Catch Limit For Yellowfin Tuna in 1999, IATTC, October 10, 1999 [hereinafter 1999 IATTC Resolution];[11] Letter from IATTC Director, dated January 3, 2000 (P. Supp. App. L); Assessment of Yellowfin Tuna in the ETP, IATTC, June 1, 1998 [hereinafter 1998 IATTC Assessment]. In

[11] This appeared in the administrative record as AR CO2-34.

addition, heavy FAD fishing occurs in the ETP between 150 degrees west and 160 degrees west longitude (bounded by 40 degrees north and south latitude), which the international agreement excludes from regulation but that is explicitly covered by the MMPA. 16 U.S.C. § 1385(c); A968; A1643. Finally, reports of overfishing in the ETP abound. 1999 IATTC Resolution; P. Supp. App. L; 1998 IATTC Assessment.

Perhaps most incredible is the recent increase in all types of purse-seine net sets -- dolphin sets, floating object sets, and free-swimming tuna sets -- with 1998's total number of 28,333 sets being the highest in history. A1531. Specifically disturbing are the spikes in dolphin sets, from 6,987 in 1993 to 11,430 in 1998, which is the highest number since 1989. Id. Sets on floating objects, conventionally believed to result in the greatest amount of bycatch, have also increased, from an average of 3000 such sets from the mid-80s to mid-90s, to an all-time high of 7,308 in 1997, before dipping only slightly to 6,425 in 1998. Id.[12] In fact, bycatch in the ETP has risen, despite the goals and restrictions imposed by the 1998 International Agreement. And, inexplicably, the IATTC continues to raise the annual catch limit for yellowfin tuna, with the most recent limit set at 310,000 metric tons in 2001, thus ensuring that the overfishing problems plaguing the ETP will continue. NMFS should recognize the fact that overfishing is a serious problem in the ETP, analyze the situation, and attempt to offer solutions and/or alternatives. Instead, it has refused to address the issue.

III. THE EA FAILED TO CONSIDER ALTERNATIVE TECHNOLOGIES CAPABLE OF IDENTIFYING FREE-SWIMMING MATURE TUNA WITHOUT ENDANGERING MARINE MAMMALS

Since at least 1992, when the prestigious U.S. National Academy of Sciences ("NAS")/ National Research Council examined the tuna/dolphin problem, biologists and other technicians have known that mature yellowfin tuna can be found apart from both dolphins and other bycatch such as sea turtles. Dolphins and the Tuna Industry, NAS/National Research Council (1992), at vii-viii, 7-9, 34-35, 60-70, 80-84 [hereinafter NAS Report].[13] Although few resources have been devoted to pursuing alternative methods of catching tuna, A1254-55, the record clearly demonstrates the existence of other viable means of catching yellowfin tuna, as well as other species of tuna, from both the eastern and western Pacific Ocean. See e.g., Will Martin, Deputy Assistant Sec'y of Commerce for Int'l Affairs (NOAA), Memorandum NOAA Conversations with Selected Activists re Tuna/Dolphin, (April 11, 1995), at 3-4 ("bait fishing closer to shore for large yellowfin tuna" that fetch substantially higher prices); A1524 (21 baitboats operating in the ETP tuna fishery in 1998); Minutes of the 65th Meeting, IATTC, October 4-10, 1999, at 6 (western Pacific Ocean availability)[14]; A1730

(continued from previous page)

[12] Significantly, NMFS has done little to train fishing captains to use techniques that reduce bycatch when setting on floating objects.

[13] This appeared in the administrative record as AR S2-3.

[14] This appeared in the administrative record as AR CO2-29.

(skipjack "can most likely sustain increased yields"). The Defendants'-Appellees' EA, however, fails to even consider these important alternatives.

For example, scientists and fishermen have recognized the potential of setting tuna nets on fish aggregating devices, or "FADs," in the deep-sea or high-seas (as opposed to coastal areas). Although it was originally thought that such devices could result in only small catches of yellowfin tuna, the NAS recently concluded that this "conventional wisdom . . . may not be as well founded as it seems." NAS Report at 66. Indeed, in the western Pacific Ocean, purse seiners rely heavily on FADs for locating and catching tuna. NAS Report at 65. As a result, the NAS found that FADs should be considered "an attractive option for fishermen in the eastern Pacific." Although the NMFS and IATTC have agreed that further study of FADs would be prudent, see NAS Report at 65-66, 82; see also, A696 (list of NMFS FAD experiments), the EA failed to consider this technique as a viable alternative.

Other promising methods of catching tuna without setting on dolphins exist, although they have hardly received sufficient study. FADs could be designed to mimic dolphin sounds, release dolphin-like odors, or be equipped to sense when mature tuna have aggregated around it and transmit this information to fishing vessels. See e.g., NAS Report at 67 ("the possibility of substituting FADs for dolphins as a means of aggregating large yellowfin tuna in the ETP has yet to receive the attention it deserves"). Additionally, "remote sensing" techniques such as satellite imagery, radar and LIDAR offer the possibility of locating mature tuna not associated with dolphins.

See NAS Report at 64 (satellites "could hold an important key to developing a dolphin-safe fishery for tuna"); id. at 64-65 (synthetic aperture radar, which employs a high-frequency radio wave, could be used to detect wave formations caused by mature yellowfin tuna feeding on the surface); id. at 64; A697-98 (LIDAR, "light-induced detecting and ranging," which is similar to radar except that it transmits light rather than radio waves, may be useful for studying the conditions where the tuna-dolphin bond breaks, for studying tuna at night to determine whether they separate from dolphins, and for deciding where to place FADs or nets to maximize the chances of aggregating large tuna); id. (sonar, though harmful to some cetaceans at certain frequencies, has been successfully used in the western Pacific tuna fishery and "may let fishermen follow tuna and dolphins and set their nets whenever the fish move away from the mammals"); A1576 (IATTC already reports that sonar is useful for differentiating various species of tunas by their swimming depths and behavior). The EA, however, failed to include an analysis of these alternatives.

Finally, biological researchers have suggested that understanding the behavior of tunas and dolphins and the association between them is crucial to finding ways to catch mature tuna not associated with dolphins. To date, a number of studies have been conducted – many by NMFS itself – to discover the ecological link between yellowfin tuna and dolphins, including a focus on sea birds, food supplies, and water temperature. Studies revealed "very different" patterns of depth preference between tuna and dolphins. Studies have also noted that particular areas of the ETP exhibit higher catch

rates of large yellowfin tuna not associated with dolphins. See, e.g., NAS Report at 34-35, 67. The EA failed to discuss these studies.

CONCLUSION

For all the aforementioned scientific reasons, we support Appellants' NEPA claims against Defendant-Appellees, and urge this Court to order an accurate and complete environmental impact statement for the new International Dolphin Conservation Program.

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CERTIFICATE OF COMPLIANCE

The undersigned, counsel of record for Amici Dr. Albert Myrick and OrcaLab, certify that this brief complies with the requirements of Fed. R. App. P. 29(d) & 32(a)(7)B), in that it is printed in 14-point, proportionally spaced typeface and contains 5,274 words.

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Brian B. O'Neill

AMICI APPENDIX

Mercury, Power Plants and the Fish We Eat, Clean Air Task Force (2000).

Fishing For Trouble: How Congress Would Endanger Pregnant Women by Opening Up U.S. Borders to Contaminated Mexican Tuna, Pure Food Campaign (1996).

Michael Lasalandra, State issues new warning on mercury in fish, The Boston Herald, July 25, 2001.