



# ***Realpolitik* and the Oceans**

## **Science, Law, and Politics in Marine Conservation**

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**Michael Sutton**

**The David & Lucile Packard Foundation**

# America's Living Oceans

CHARTING A COURSE FOR SEA CHANGE



**Summary Report**  
Recommendations for a  
New Ocean Policy  
*May 2003*



## Members OF THE PEW OCEANS COMMISSION

*Kenai Fjords National Park, Alaska*  
Dale Anderson/Pew Oceans Commission



### **The Honorable Leon E. Panetta, Chair**

He is director of the California State University Panetta Institute for Public Policy. He served in Congress for eight terms. He chaired the House Budget Committee and served as White House chief of staff.

### **John H. Adams**

He is the founder and president of the Natural Resources Defense Council—one of the nation's leading environmental organizations. In 1998, he was named one of Audubon's 100 Champions of Conservation.



### **The Honorable Eileen Claussen**

She is president of the Pew Center on Global Climate Change. She is a former assistant secretary of state for oceans, environment, and science.

### **The Honorable Carlotta Leon Guerrero**

She is a former member of the Guam Senate where she chaired committees with jurisdiction over transportation, telecommunications, and Micronesian affairs. She is currently co-director of the Ayuda Foundation, a nonprofit health care organization in Guam.



### **The Honorable Mike Hayden**

He is the secretary of the Kansas Department of Wildlife and Parks. The former governor of Kansas served as president and CEO of the American Sportfishing Association, a recreational fishing group.

### **Geoffrey Heal, Ph.D.**

He is the Garrett Professor of Public Policy and Corporate Responsibility and professor of economics and finance at the Graduate School of Business at Columbia University. One of his major research interests is the interaction of human societies and their natural resources.



### **Charles F. Kennel, Ph.D.**

He is director of the Scripps Institution for Oceanography and the author of more than 250 publications in plasma physics, planetary science, and astrophysics. He has been both a Fulbright and Guggenheim Scholar.

### **The Honorable Tony Knowles**

He recently completed his second term as governor of Alaska. He was the mayor of Anchorage and served on the North Pacific Fishery Management Council, where he was instrumental in efforts to reduce bycatch.



### **Jane Lubchenco, Ph.D.**

She is an Oregon State University professor of marine biology, a MacArthur Fellow, and past president of both the American Association for the Advancement of Science and the Ecological Society of America. She is president-elect of the International Council for Science, and recipient of the 2002 Heinz Award for the Environment.



### **Julie Packard**

She is the founder and executive director of the Monterey Bay Aquarium and vice chair of the David and Lucile Packard Foundation. She is the 1998 recipient of the Audubon Medal for Conservation.

### **The Honorable Pietro Parravano**

He is a commercial fisherman and owner of the *Anne B.* He is the president of the Pacific Coast Federation of Fishermen's Associations and an elected member of the San Mateo County Harbor Commission.



### **The Honorable George E. Pataki**

He is currently serving his third term as governor of New York. After graduating from Columbia Law School, he served ten years in the state legislature and was mayor of the city of Peekskill, his hometown.

### **The Honorable Joseph P. Riley, Jr.**

He is serving his seventh term as mayor of Charleston, South Carolina. He has served as the president of the U.S. Conference of Mayors and has received many awards, including the Outstanding Mayors Award from the National Urban Coalition.



### **David Rockefeller, Jr.**

He is director and former chair of Rockefeller Co., Inc., and is an active participant in the nonprofit fields of art, philanthropy, and the environment. He is a trustee of the National Park Foundation.

### **Vice Admiral Roger I. Rufe, Jr., U.S. Coast Guard (Retired)**

He is the president and CEO of The Ocean Conservancy. While in the U.S. Coast Guard, he led offices responsible for marine conservation in Alaska and the Southeast U.S.



### **Kathryn D. Sullivan, Ph.D.**

She is the president and CEO of COSI, a hands-on science center in Columbus, Ohio. As a NASA astronaut, she was the first U.S. woman to walk in space. She served as NOAA's chief scientist from 1992 to 1996. She has a Ph.D. in geology.

### **Marilyn Ware**

She is the chairman of the board of American Water Works Company, the nation's largest private drinking water utility. She is a former newspaper editor and publisher, and currently serves on the board of the American Enterprise Institute.



### **Patten (Pat) White**

He is a commercial fisherman and CEO of the Maine Lobstermen's Association. He is a member of the Atlantic States Marine Fisheries Commission, and serves on the editorial board of *National Fisherman*.

# Main Points

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- **Sound science is necessary but not sufficient to support conservation**
- **Law can be applied by all sides**
- **Essential ingredient is POLITICS!**
- **Extractive and development industries are politically powerful**
- **Without political will, science and law can be overruled or ignored**

# Three Case Studies

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- Two wins, one loss
- International Ban on Commercial Whaling: Win
- Dolphin-Safe Tuna: Win
- Conservation of Atlantic Bluefin Tuna: Loss
- Two new approaches to generate political will for conservation

# Commercial Whaling

- 18th-19th century industry
- Blue whale, others depleted
- Western nations stop whaling in 1970s
- Japan, Norway, USSR continue



# International Whaling Commission

- Established in 1946 to regulate whaling industry
- Failed to make whaling sustainable
- Presided over the depletion of the great whales
- Whaling nations regularly exceeded IWC quotas



# Public Becomes Concerned

- Evidence grows of depletion
- Scientists express concern
- Humpback song recorded
- Public begins to show alarm



# Anti-Whaling Movement

- Public concern spurs activists
- Demonstrations held in U.S., Europe
- IWC becomes a battleground
- Scientists square off in IWC Scientific Committee
- Conservationists encourage anti-whaling nations to join IWC
- IWC members become polarized



# Ban on Commercial Whaling

- IWC votes moratorium on commercial whaling in 1985
- Japan, USSR, Norway refuse ban, take “exceptions” under treaty
- U.S. uses trade sanctions to force Japan & USSR to accede
- Whale sanctuaries established in 1990s
- Limited whaling continues today



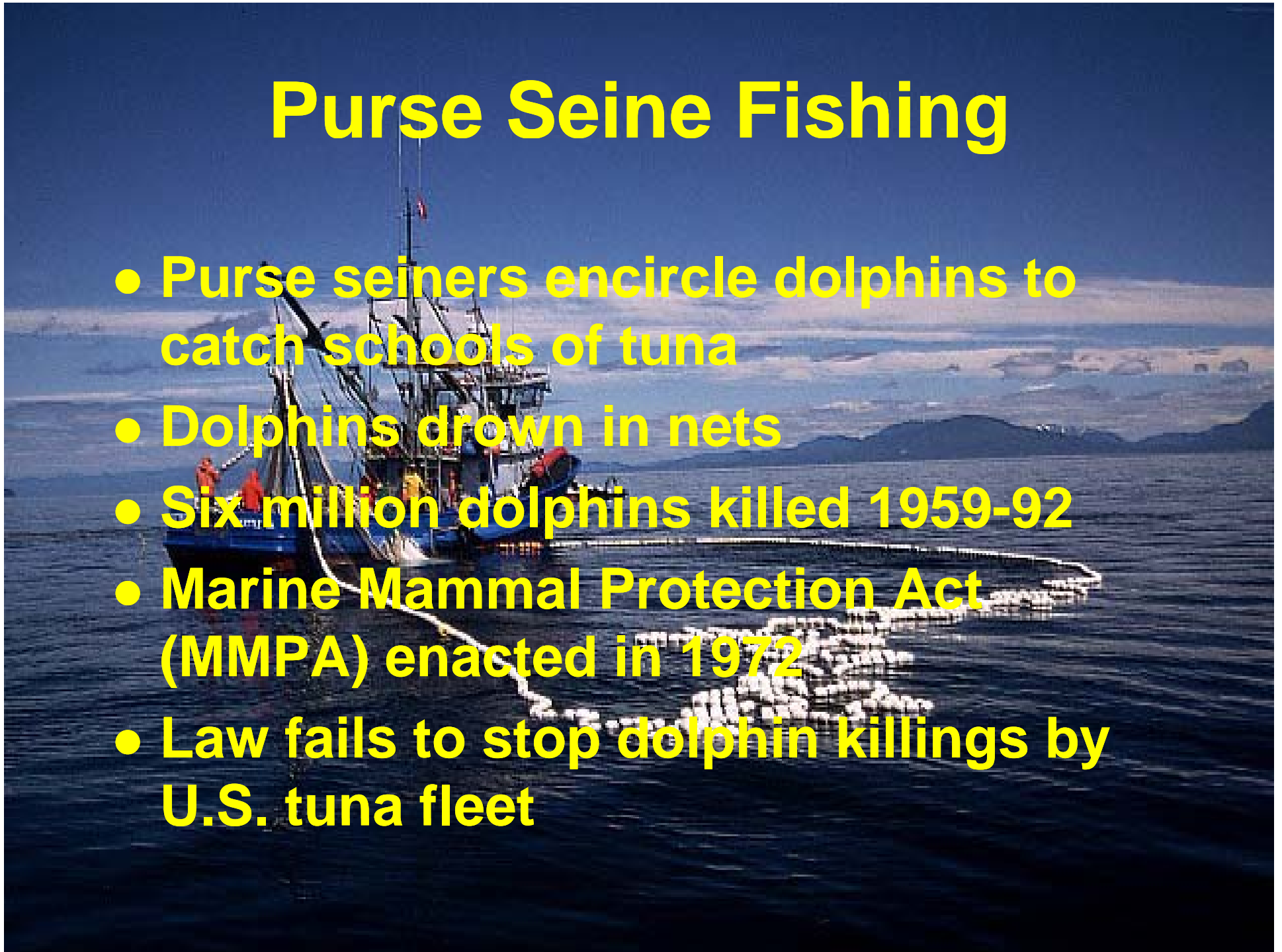
# Dolphins and Tuna

- Dolphins swim with tuna in ETP
- 30% of world's tuna supply
- Pole & line fishing original method



# Purse Seine Fishing

- Purse seiners encircle dolphins to catch schools of tuna
- Dolphins drown in nets
- Six million dolphins killed 1959-92
- Marine Mammal Protection Act (MMPA) enacted in 1972
- Law fails to stop dolphin killings by U.S. tuna fleet



# Flipper to the Rescue!

- Six-figure dolphin kills continue in 1980s
- Foreign fleets replace U.S. tuna boats
- American public taught to love dolphins
- Clandestine videotape shows dolphins dying in tuna nets
- Public outcry grows in late 1980s
- Congress prepares to act



# Dolphin-Safe Tuna

- Earth Day 1990: Starkist acts
- New laws enacted
- Lawsuits filed
- Most tuna sold is “Dolphin-Safe”
- U.S. embargoes foreign tuna



**Dolphin Safe**  
KEEP THE LABEL HONEST  
KEEP NETS OFF DOLPHINS

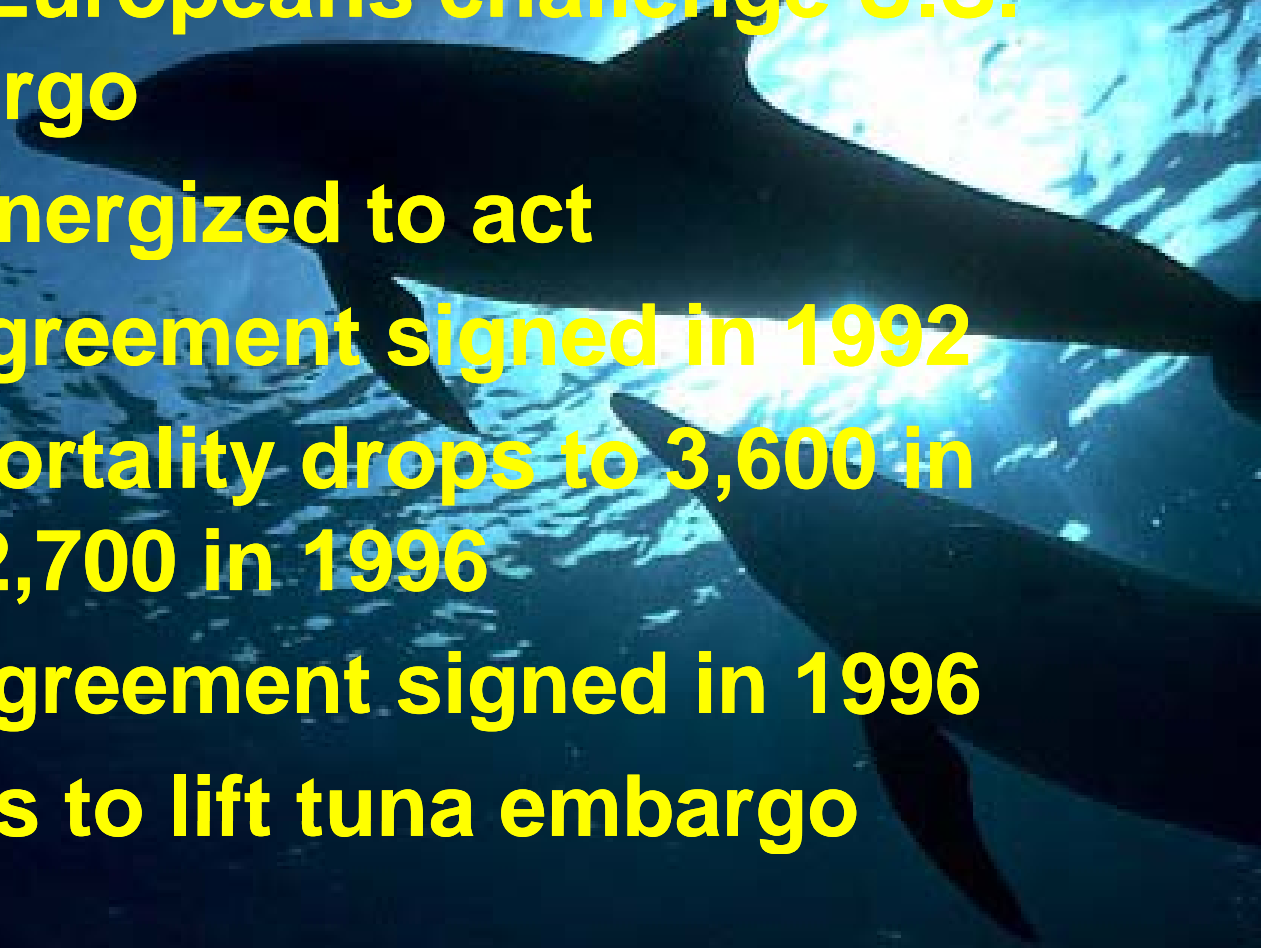
**DOLPHIN-SAFE TUNA PLEDGE**  
In keeping with the non-encirclement, dolphin-safe policy adopted in 1990 by American canned tuna processors,

(Company name)  
intends to retain our non-encirclement, dolphin-safe policy in the buying and selling of tuna. Today, most U.S. consumers understand and accept the non-encirclement policy for dolphin-safe tuna.

(Signature)  
(Name & Title)

# International Action

- Mexico & Europeans challenge U.S. tuna embargo
- IATTC is energized to act
- La Jolla Agreement signed in 1992
- Dolphin mortality drops to 3,600 in 1993 and 2,700 in 1996
- Panama Agreement signed in 1996
- U.S. agrees to lift tuna embargo



A large school of Atlantic Bluefin Tuna swimming underwater, viewed from below, creating a sense of depth and movement. The fish are silhouetted against a lighter blue background, with some showing their distinctive dorsal fins.

# Atlantic Bluefin Tuna

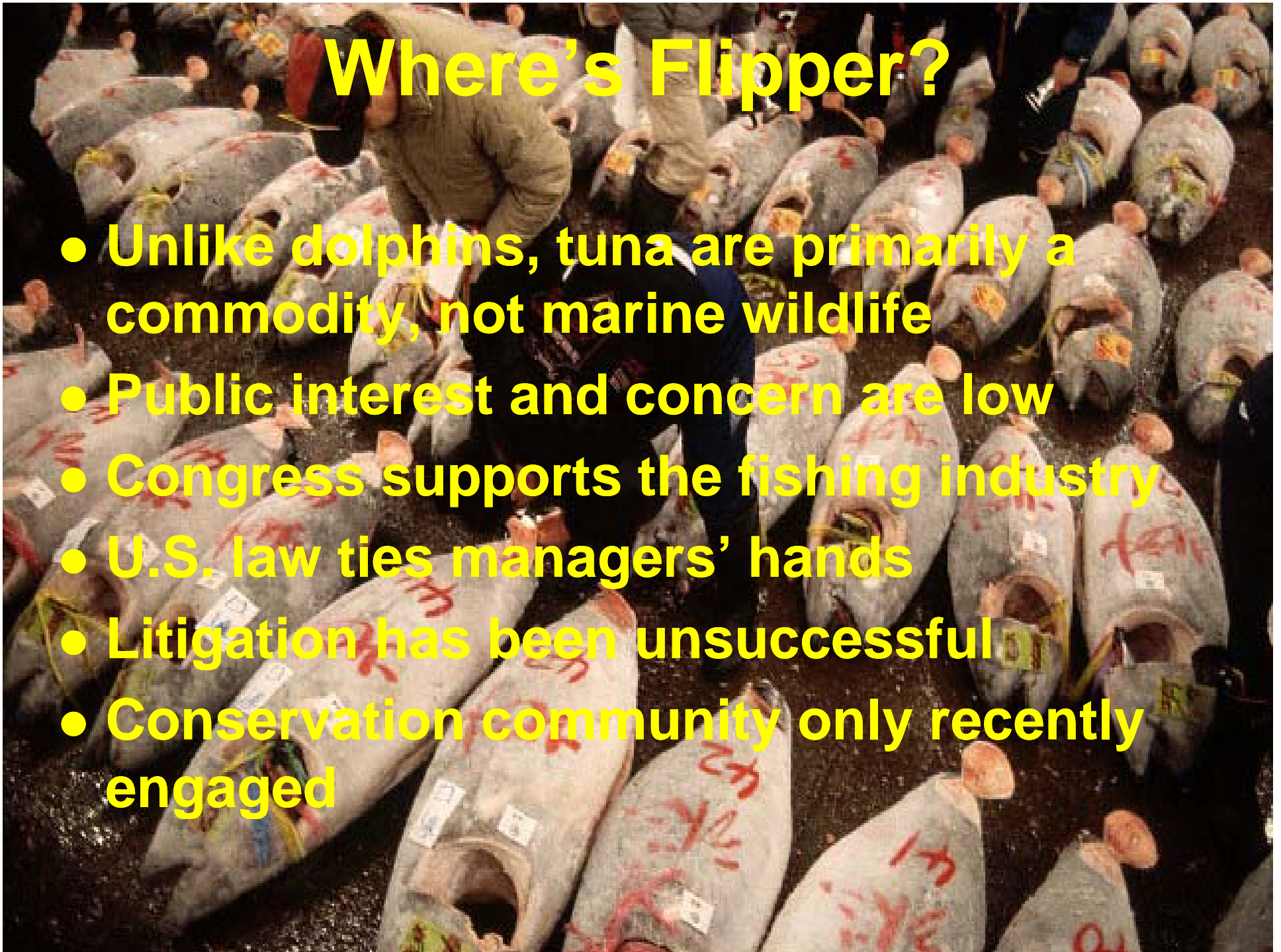
- “Porsche of the Oceans”: Biggest, Fastest, and Most Valuable Fish
- Managed by Atlantic Tunas Commission (ICCAT)
- 1970-1990: Population declines by 90% due to overfishing
- ICCAT fails to act; decline continues
- Bluefin fishermen fiercely resist catch reductions

# Bluefin Battleground

- 1990: Conservationists weigh in; take battle to CITES
- 1992: ICCAT halves catch quota
- 1993: NRC releases report; ICCAT eases quota restrictions
- Bluefin continue to decline
- Industry scientists promote uncertainty

# Where's Flipper?

- Unlike dolphins, tuna are primarily a commodity, not marine wildlife
- Public interest and concern are low
- Congress supports the fishing industry
- U.S. law ties managers' hands
- Litigation has been unsuccessful
- Conservation community only recently engaged



# Rapid worldwide depletion of predatory fish communities

Ransom A. Myers & Boris Worm

Biology Department, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4J1

Serious concerns have been raised about the ecological effects of industrialized fishing<sup>1–3</sup>, spurring a United Nations resolution on restoring fisheries and marine ecosystems to healthy levels<sup>4</sup>. However, a prerequisite for restoration is a general understanding of the composition and abundance of unexploited fish communities, relative to contemporary ones. We constructed trajectories of community biomass and composition of large predatory fishes in four continental shelf and nine oceanic systems, using all available data from the beginning of exploitation. Industrialized fisheries typically reduced community biomass by 80% within 15 years of exploitation. Compensatory increases in fast-growing species were observed, but often reversed within a decade. Using a meta-analytic approach, we estimate that large predatory fish biomass today is only about 10% of pre-industrial levels. We conclude that declines of large predators in coastal regions<sup>5</sup> have extended throughout the global ocean, with potentially serious consequences for ecosystems<sup>3–7</sup>. Our analysis suggests that management based on recent data alone may be misleading, and provides minimum estimates for unexploited communities, which could serve as the 'missing baseline'<sup>8</sup> needed for future restoration efforts.

Ecological communities on continental shelves and in the open ocean contribute almost half of the planet's primary production<sup>9</sup>, and sustain three-quarters of global fishery yields<sup>1</sup>. The widespread decline and collapse of major fish stocks has sparked concerns about the effects of overfishing on these communities. Historical data from coastal ecosystems suggest that losses of large predatory fishes,

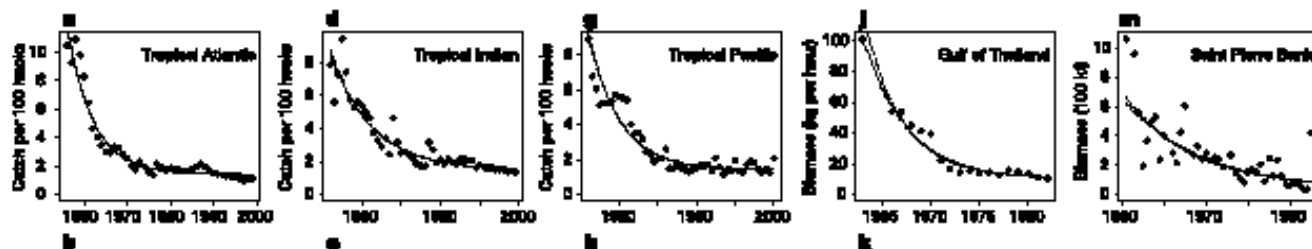
as well as mammals and reptiles, were especially pronounced, and precipitated marked changes in coastal ecosystem structure and function<sup>3</sup>. Such baseline information is scarce for shelf and oceanic ecosystems. Although there is an understanding of the magnitude of the decline in single stocks<sup>10</sup>, it is an open question how entire communities have responded to large-scale exploitation. In this paper, we examine the trajectories of entire communities, and estimate global rates of decline for large predatory fishes in shelf and oceanic ecosystems.

We attempted to compile all data from which relative biomass at the beginning of industrialized exploitation could be reliably estimated. For shelf ecosystems, we used standardized research trawl surveys in the northwest Atlantic Ocean, the Gulf of Thailand and the Antarctic Ocean off South Georgia, which were designed to estimate the biomass of large demersal fish such as codfishes (Gadidae), flatfishes (Pleuronectidae), skates and rays (Rajidae), among others (see Supplementary Information for detailed species information). In all other shelf areas for which we could obtain data, industrialized trawl fisheries occurred before research surveys took place. For oceanic ecosystems, we used Japanese pelagic longlining data, which represent the complete catch-rate data for tuna (Thunnini), billfishes (Istiophoridae) and swordfish (Xiphiidae) aggregated in monthly intervals, from 1952 to 1999, across a global 5° × 5° grid. Pelagic longlines are the most widespread fishing gear, and the Japanese fleet the most widespread longline operation, covering all oceans except the circumpolar seas. Longlines, which resemble long, baited transects, catch a wide range of species in a consistent way and over vast spatial scales. We had to restrict our analysis of longlining data to the equatorial and southern oceans, because industrialized exploitation was already underway in much of the Northern Hemisphere before these data were recorded<sup>11,12</sup>. Longlining data were separated into temperate, subtropical and tropical communities (see Methods).

For each shelf and oceanic community, *i*, we estimated

$$N_i(t) = N_i(0)[(1 - \delta_i)e^{-t/\tau} + \delta_i] \quad (1)$$

where  $N_i(t)$  is the biomass at time *t*,  $N_i(0)$  is the initial biomass



# What Have We Learned?

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- Science and law aren't enough to win
- Extractive industries are politically strong and well-financed
- Burden of proof is on conservation scientists to make their case
- Perverse use of “peer review” helps delay needed action
- Political clout is essential

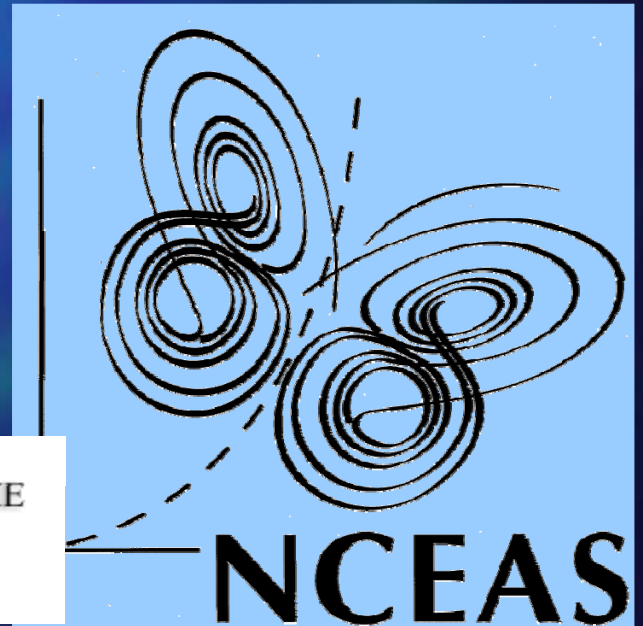
# Lessons for Conservation

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- **Public awareness and concern leads to increased political will**
- **Conservationists will need new approaches and new allies to help science prevail**
- **Two examples: Building public concern and market incentives**

# Making Science Work

**Consensus statement signed by 161 academic scientists reinforces the need for fully-protected marine reserves**

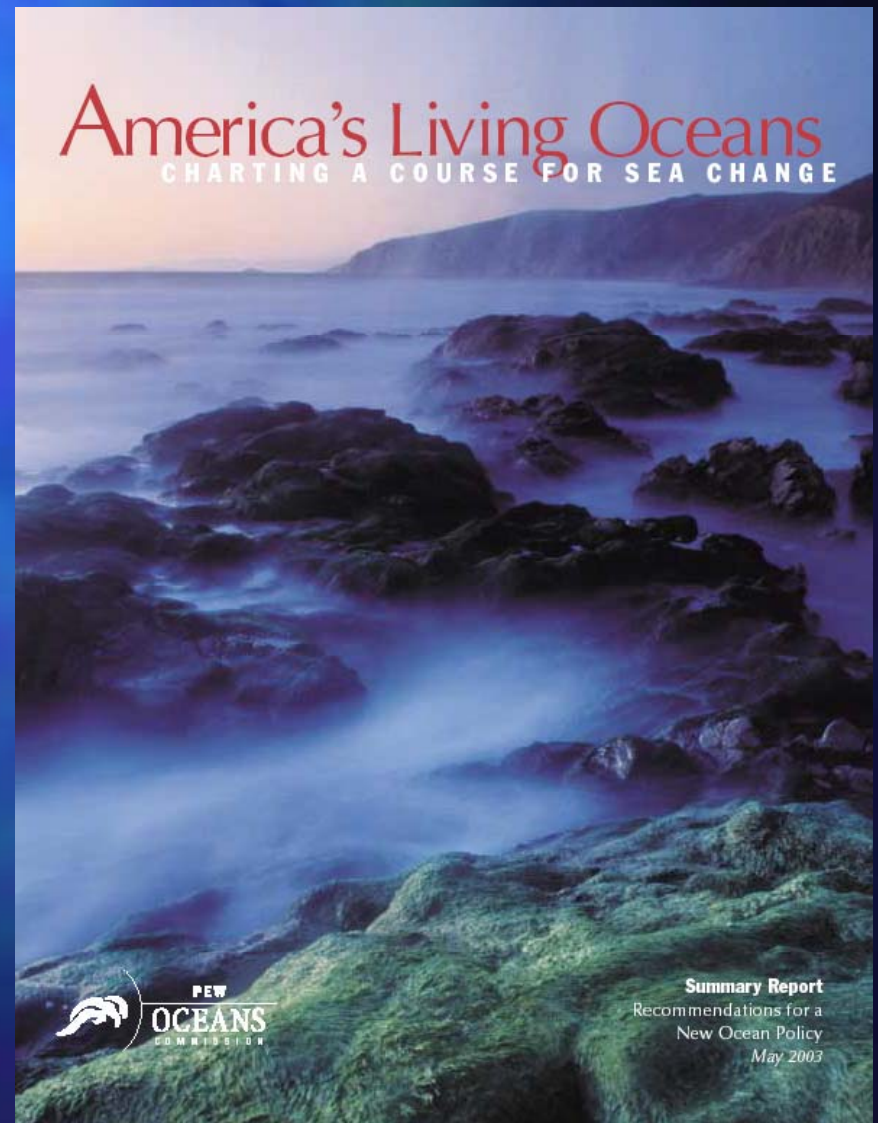


**AAAS**

AMERICAN ASSOCIATION FOR THE  
ADVANCEMENT OF SCIENCE

# Making Science Work

**Pew Oceans  
Commission  
reiterates call for  
fully-protected  
marine reserves**



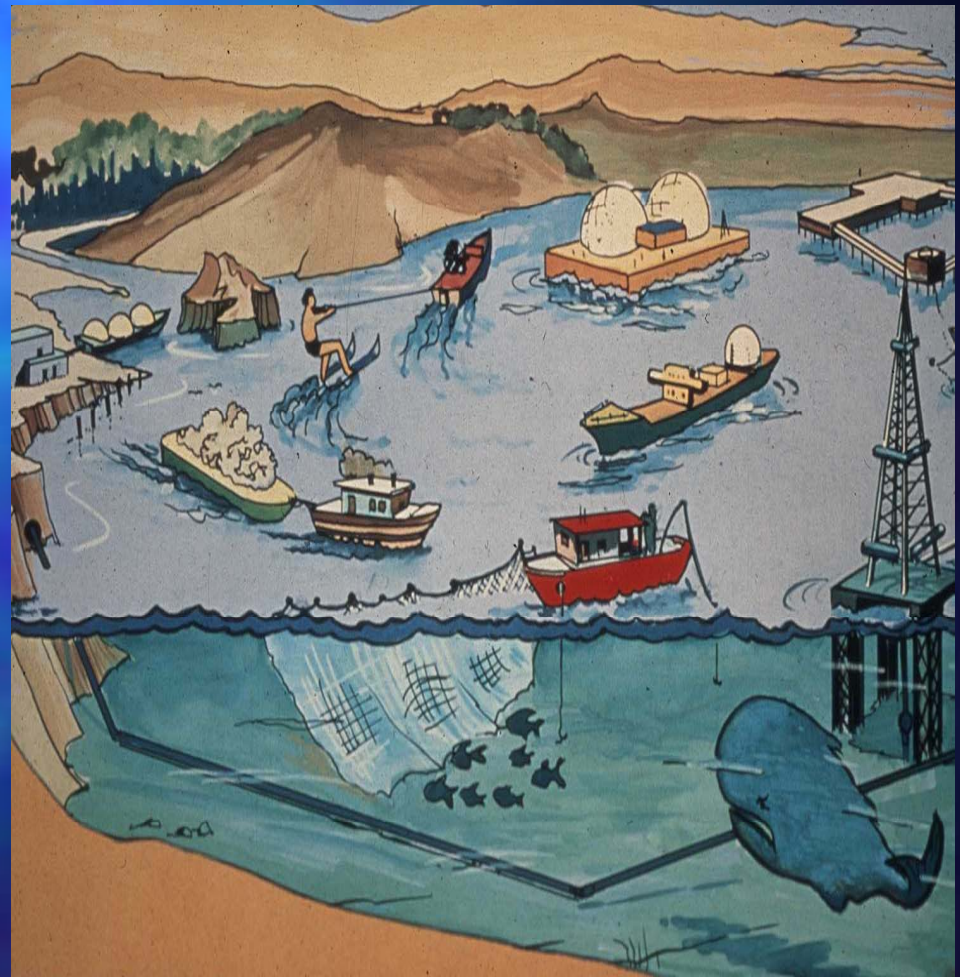
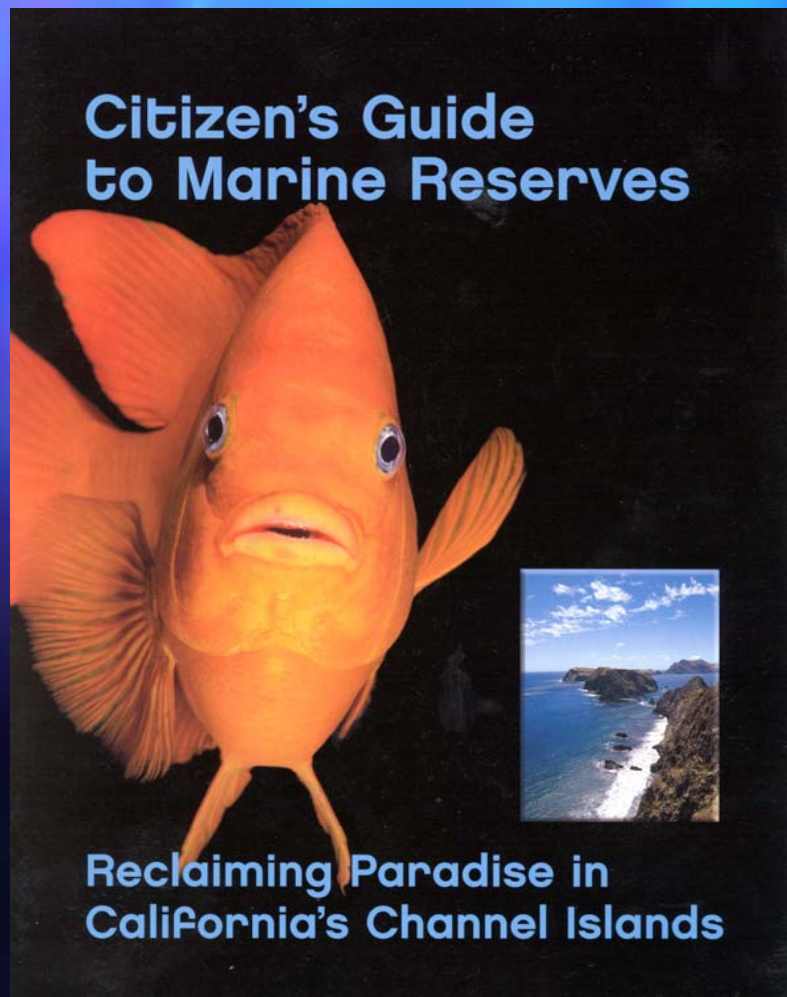
# Making Science Work

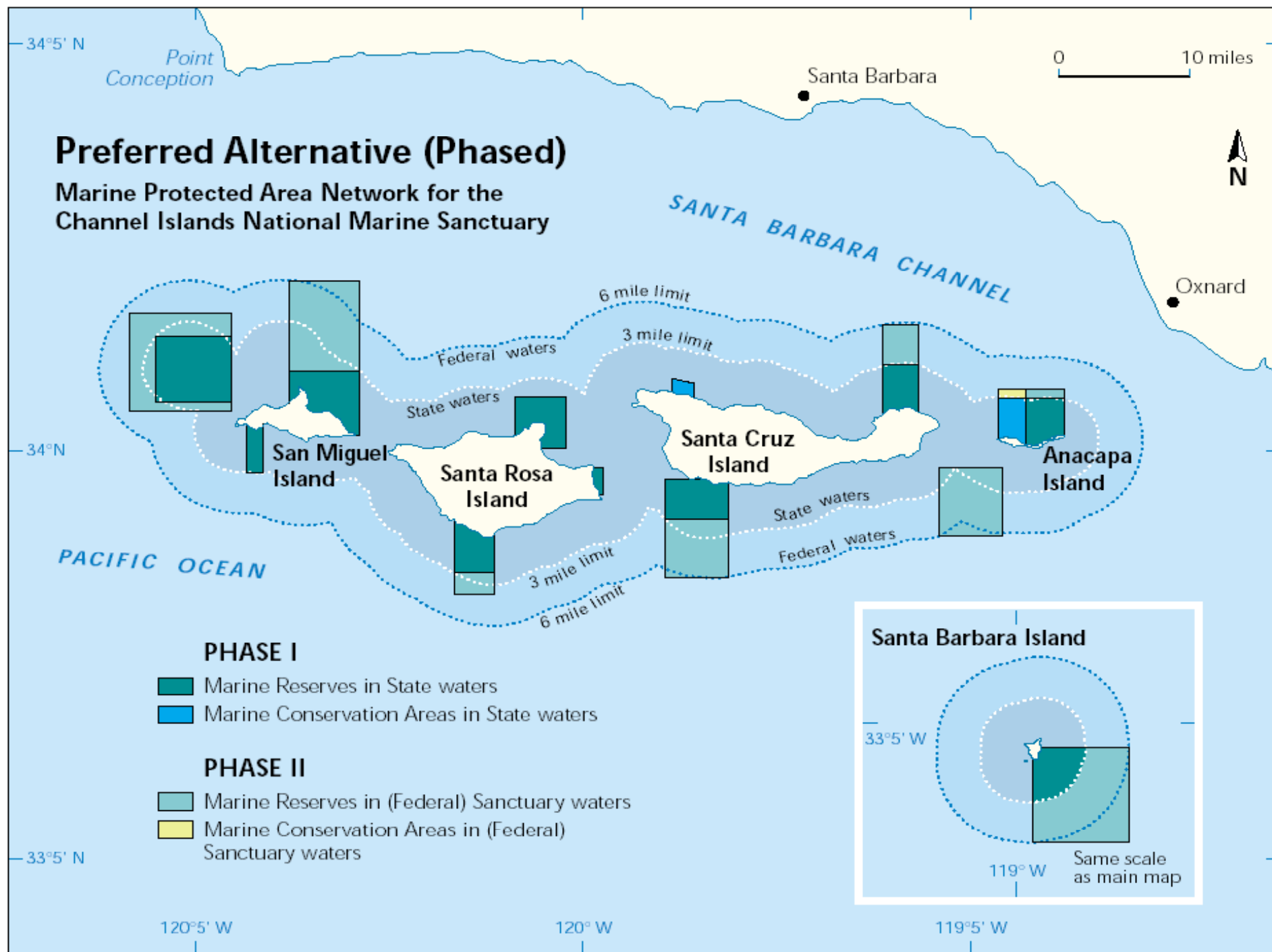
**COMPASS** briefs Congress; helps launch  
the *Ocean Wilderness Network*

The logo for COMPASS features the word "COMPASS" in a blue, serif, all-caps font. A red vertical line is positioned inside the second 'O', acting as a compass needle. The entire logo is set against a white rectangular background.

COMMUNICATION PARTNERSHIP FOR SCIENCE AND THE SEA

# Building Constituent Support





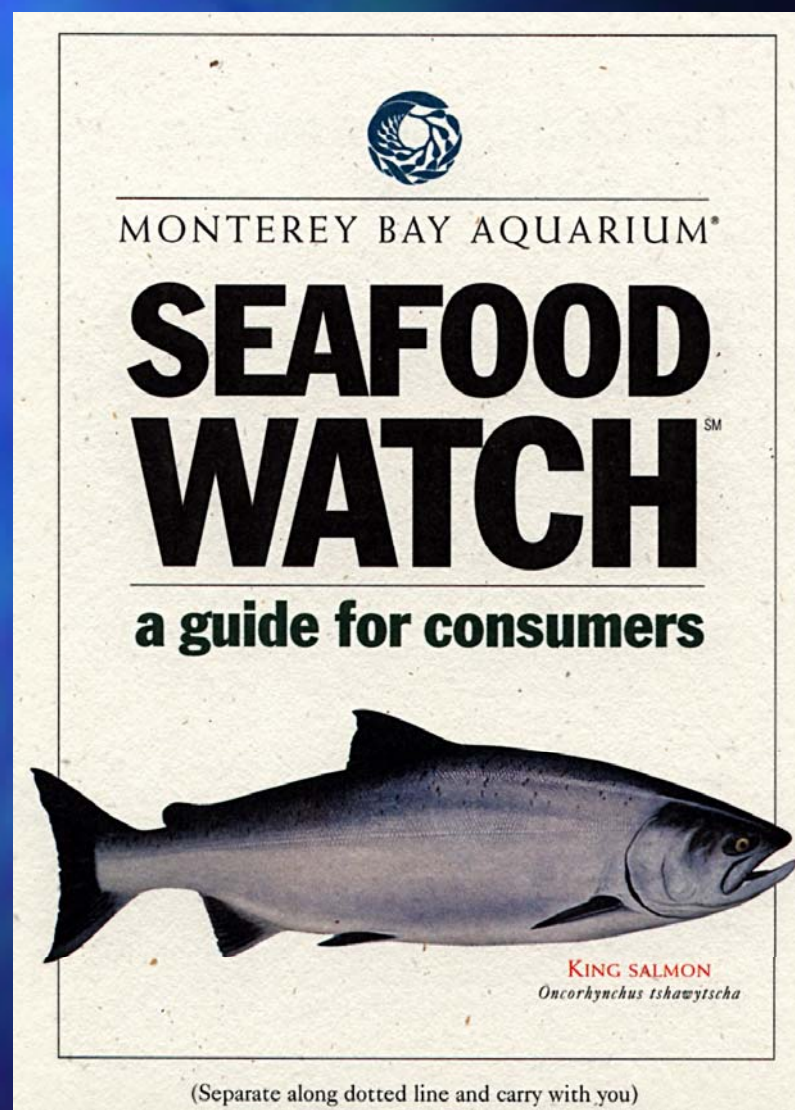
# United Seas of America



*Don't forget the blue!*

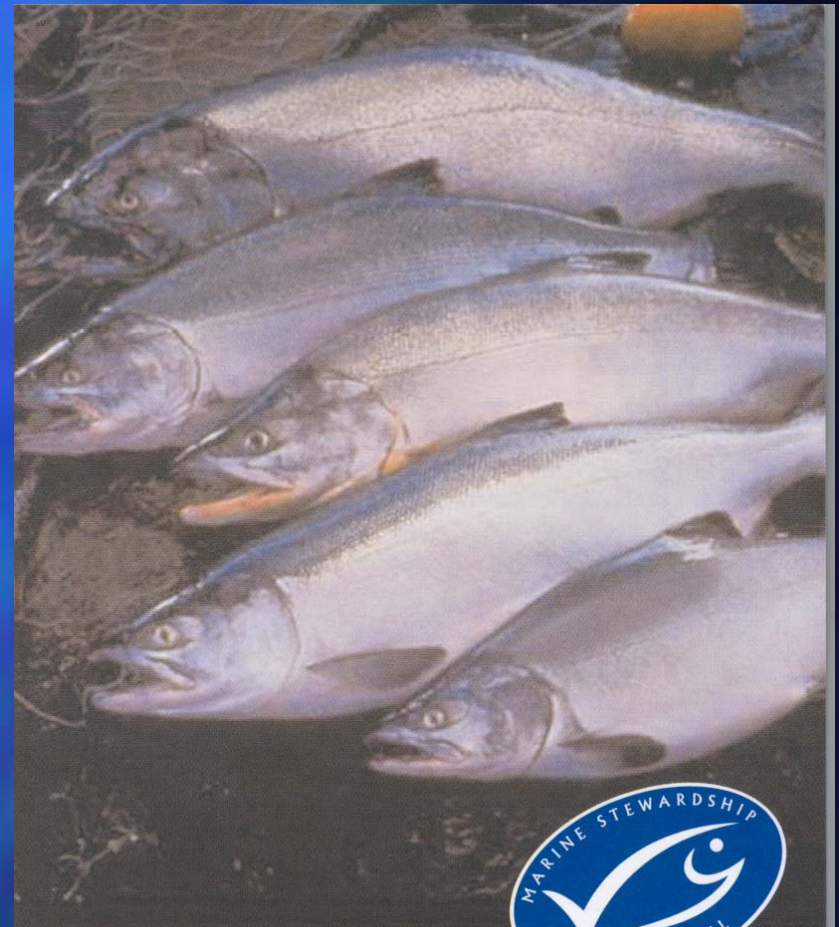
# Another New Approach

- Seafood choices impact the oceans
- Consumers are unaware of crisis
- Consumer choice is a powerful tool
- Chefs, aquariums can be key allies



# Marine Stewardship Council

- Founded by WWF & Unilever in 1996
- Developed tough standards
- First certifiers accredited in 1999
- First fisheries certified in 2000



Alaska Salmon

Certified to the Marine Stewardship Council Standard  
September 2000

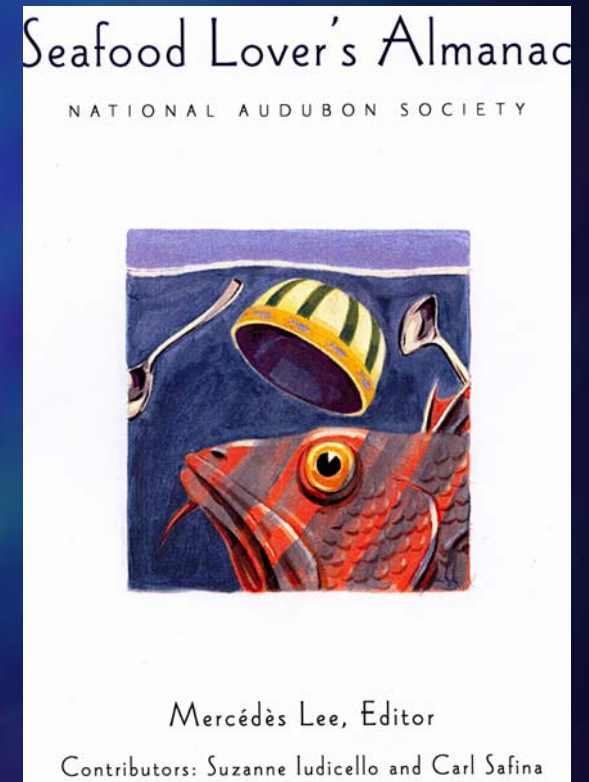
# Promoting Seafood Choices

## First MSC Labeled Seafood Appears on World Markets



# Promoting Seafood Choices

*Give Swordfish a Break, Caviar Emptor, and Seafood Lover's Almanac*



# Conservationists Write a Seafood Menu to Save Fish

By WILLIAM J. BROAD

As overfishing depletes the seas of prized species like cod, tuna and swordfish, conservation groups are urging consumers to make dining choices they say will help damaged ecosystems recover and support sustainable fisheries. Their lists recommend seafoods to eat and avoid.

"It's an environmental problem whose solution is in your hands every time you buy seafood," says the Monterey Bay Aquarium's seafood guide, which made its debut last month. "Make wise choices and you help assure healthy oceans for the future."

The aquarium, in Monterey, Calif., lists 11 species that it calls best choices, 14 that are potential problems and 15 that are better to avoid. Proposed for prohibition are such fish as cod, American lobster, monkfish, orange roughy, Chilean sea bass, shark, prawns, swordfish and bluefin tuna, all of whose populations are in decline or headed there.

In some cases, the proposed taboos are based on habitat destruction and risk, rather than population drops. For instance, the aquarium urges consumers to avoid farmed salmon because the ocean pens in which they live can pollute the water with feces and spread disease.

It adds that farmed salmon are usually Atlantic in origin — even those raised in Pacific waters. Salmon that escape can cause problems

some cases of extinction of stocks.

Despite remedial efforts and scattered improvements, the overfishing problem is generally seen as getting worse. By some estimates, more than two-thirds of all commercially important fish populations are now classified as "fully fished" or "over exploited."

Last month, the National Marine Fisheries Service, the federal agency that oversees the nation's commercial fishing fleets, issued an annual report to Congress that said 98 species were now overfished, up from 90 last year. Among the new additions are the Georges Bank cod, the Bering Sea snow crab, the yellowtail flounder and the Gulf of Maine haddock.

"This report is significant because it provides the clearest picture of the precarious state of the nation's fisheries that we've seen to date," said Lee Crockett, executive director of the Marine Fish Conservation Network, which is based in Washington.

The effort to guide consumer choices made a surprisingly strong debut last year when the Natural Resources Defense Council and SeaWeb, a conservation project of the Pew Charitable Trusts, mounted a successful effort to "Give Swordfish a Break" because of population drops. The effort prompted many restaurants, including some top New York City establishments, to forgo the delicacy. Market prices for swordfish dropped.

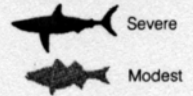
The campaign irked commercial fishermen and some federal regulators, who said it ignored American efforts to rebuild fallen swordfish stocks. The problem, some regulators said, was foreign states that ignored quotas and fishing agreements.









After the swordfish effort, the push widened last year as the Living Oceans Program of the National Audubon Society, based in Islip, N.Y., published a guide to seafood that made recommendations among 21

## An Environmental Agenda at the Dinner Table

With more and more people eating more and more fish, some fish populations are crashing. Now environmental groups are offering consumers advice about which commercial fisheries are in good shape, and which are struggling.

### ENVIRONMENTAL IMPACT



FISH	STATUS	CONCERNS
 <b>CHILEAN SEA BASS</b>	Heavy unregulated fishing is wiping out this slow-growing deep ocean species	As long as the illegal catch is 10 times as great as the amount legally allowed the future is dim.
 <b>SHARK</b>	Because sharks are slow-growing fish that produce relatively few offspring, intensive fishing has been devastating. Most species on the East Coast are depleted.	Shark-fishing methods also endanger turtles and marine mammals.
 <b>SWORDFISH, MARLIN</b>	Atlantic species are depleted. Conditions in the Pacific are unknown	Efforts to limit fishing are ineffective in the Atlantic, virtually nonexistent in the Pacific.
 <b>SHRIMP</b>	About half the shrimp sold today is farmed, but shrimp farms can pollute and destroy habitat. Shrimp are plentiful in some regions, depleted elsewhere.	The number of unwanted fish caught while harvesting shrimp is so high that, on average, every pound of shrimp sold means seven pounds of non-shrimp killed.
 <b>ORANGE ROUGHY</b>	Native waters of Australia and New Zealand are depleted; since fish take many years to grow they will not rebound quickly.	Nets used to catch these fish do significant damage to the ocean bottom.
 <b>GROUPE</b>	Fishing in spawning areas has seriously depleted many populations.	Management in the southeastern United States is improving, but the catch is unregulated elsewhere.
 <b>ATLANTIC COD, HADDOCK, POLLOCK</b>	Decades of overfishing caused populations to crash, severely disrupting the fishing economies of Maritime Canada and New England.	Nets dragged along the bottom damage the ocean floor, decreasing chances of recovery. But stocks are slowly rising in areas closed to fishing.
 <b>SCALLOPS</b>	Sea scallops are seriously overfished. Bay scallops are vulnerable to algae blooms and pollution.	Dredging for scallops disrupts habitat and takes in many other species. (Some scallops are farmed indoors.)

Wild Alaska salmon gets a thumbs up, but beware of shark, cod and bluefish tuna.

# Promoting Seafood Choices

Groups form the *Seafood Choices Alliance* to coordinate efforts and ensure that messages to consumers are consistent



# Conclusion

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- **Science and law are important tools, but can be ignored or overruled**
- **Political will stems from intense public concern and/or raw influence**
- **Conservationists must generate one or the other to win**

**“What kind of planet we want is ultimately a question of values. How much species diversity should be maintained in the world? How much climate change is acceptable?”**

**Science can illuminate these issues but cannot resolve them. The choice of answers is ours to make and our grandchildren's to live with.”**

**-William C. Clark. Managing Planet Earth. *Scientific American*. Vol. 261, No. 3. September 1989. pp 47-54.**



