

Fisheries

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**National Aquatic Species Risk Analysis:
A Call for Improved Implementation**

**Development of a Standardized DNA Database
for Chinook Salmon**

Fisheries

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The American Fisheries Society (AFS), founded in 1870,
is the oldest and largest professional society representing
fisheries scientists. The AFS promotes scientific research
and enlightened management of aquatic resources
for optimum use and enjoyment by the public. It also
encourages comprehensive education of fisheries scientists
and continuing on-the-job training.

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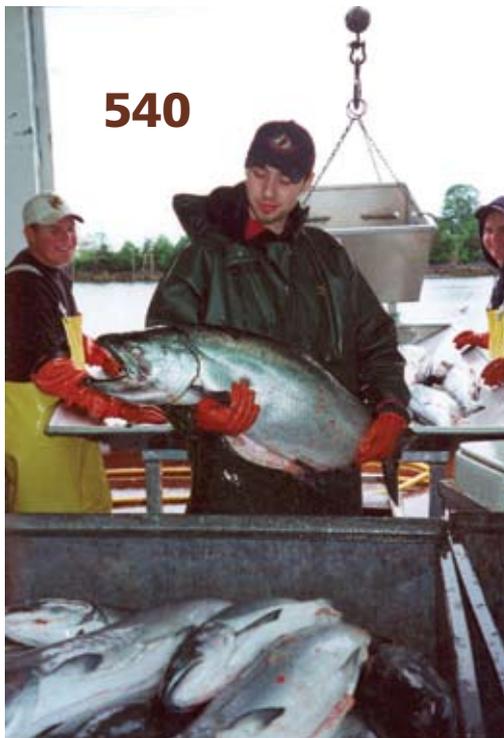


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National Aquatic Species Risk Analysis:
A Call for Improved Implementation

Federal risk analysis efforts have focused on risk assessments conducted by scientists. We argue that more effective implementation would include distinctive risk management efforts with input from a broad range of stakeholders.

Jeffrey E. Hill and Paul Zajicek

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540 GENETICS

Development of a Standardized DNA Database for Chinook Salmon

An international multi-laboratory project was conducted to develop a standardized DNA database for Chinook salmon

L. W. Seeb, A. Antonovich, M. A. Banks, T. D. Beacham, M. R. Bellinger, S. M. Blankenship, M. R. Campbell, N. A. Decovich, J. C. Garza, C.M. Guthrie III, T. A. Lundrigan, P. Moran, S. R. Narum, J. J. Stephenson, K. J. Supernault, D. J. Teel, W. D. Templin, J. K. Wenburg, S. F. Young, and C. T. Smith

COLUMN

553 GUEST DIRECTOR'S LINE AFS Members and the Intergovernmental Panel on Climate Change: A Broad Partnership

With the Intergovernmental Panel on Climate Change sharing the Nobel Peace Prize, it is fitting to recognize some of the AFS members who have contributed their knowledge on the effects of climate change on fisheries to this international effort.

John T. Everett

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COVER: Chinook Salmon (*Oncorhynchus Tshawtscha*) caught in the Columbia River.

CREDIT: Andrew Murdoch



John T. Everett
Everett, after 31 years with the National Marine Fisheries Service, is president of Ocean Associates, Inc., and can be contacted at JohnEverett@OceanAssoc.com.



AFS Members and the Intergovernmental Panel on Climate Change: A Broad Partnership

Climate change has been important to our understanding of fisheries since the first hook went in the water. More recently, it has become associated with change contributed by our society. Since we in "fisheries" have long studied environmental changes and their impacts on our flock, we tend to recognize that fisheries rise and fall with changes in the local and global environment, with many synchronous population changes in stocks around the world. Our understanding of these fast and vast changes gives us a distinct advantage in dealing with this complex issue. Change happens but not all change is equal. A change of 1 degree F (0.5 C) over 150 years is like noise in a system with El Niños, Pacific Decadal Oscillations, and North Atlantic Oscillations. The fisheries community has been much more reasoned in its response to climate change than many other sectors.

Some of us worked on climate cooling in the 1970s. This truly frightening possibility takes some of the dread out of present modeling projections. Even though we know that fish and all other aquatic life have endured much warmer (and cooler) times in the past, we realize that any human contributions to climate change will have an exaggerated effect due to present fisheries stresses and sharp conflicts among competing uses of aquatic ecosystems. As the Intergovernmental Panel on Climate Change (IPCC) noted in 1995, "Climate change impacts are likely to exacerbate existing stresses on fish stocks, notably overfishing, diminishing wetlands and nursery areas, pollution, and UV-B radiation. The effectiveness of actions to reduce the decline of fisheries depends on our capacity to distinguish among these stresses and other causes of change. This capacity is insufficient and, although the effects of environmental variability are increasingly recognized, the contribution of climate change to such variability is not yet clear." Repeating this theme, AFS member **Gary Sharp** and I testified earlier this year in the U.S. House of Representatives about the impact of climate change on fisheries, oceans, and ecosystems. The materials gathered for my testimony underpin a website at www.ClimateChangeFacts.info.

AFS and its members have been involved in climate change research and issues since

the cooling scare of the 1970s and the transition to warming in the late 1980s. For example, AFS co-hosted with Sea Grant an important symposium on "Climate Change and Fisheries" in Arizona in 2000 and the AFS website and its publications have many articles on the issue. With the IPCC sharing the Nobel Peace Prize, it is fitting to recognize all the AFS members who participated over the years. No one person has been involved in all phases of this extraordinary effort, but member **James Meehan** and I were involved in the first oceans meeting in Moscow in 1988 and I have continued, now as an IPCC expert reviewer, since leaving NOAA. If anyone is missing from the following recognitions, I'll take the blame (Please do let AFS know for future reference).

The IPCC structure and process focuses on assessments every five years, each with three working groups. Working Group I addresses the science of climate change, WG II addresses the impact and adaptations from climate change, and WG III examines the socioeconomic issues of both climate change and emission reductions. Fisheries issues have always been tackled by WG II (headed by Russia). Chapter co-chairs manage the entire process for each topical chapter and present and defend their reports during plenary. Lead authors usually prepare a section of a chapter, such as coastal or inland fisheries. Contributors write a paragraph or two, or make comments during several peer reviews of each document. More background information and the last two reports by WG II are available at www.ipcc-wg2.org. The selection of authors and topics is done by negotiation among nations.

Here are some contributions of AFS members we can identify. In the IPCC First Assessment Report in 1990, the World Oceans and Coastal Zones chapter was co-chaired by John Everett, with assistance from lead author James Meehan. Everett also co-chaired World Oceans and Coastal Zones in the IPCC Impacts Assessment Supplement in 1992.

In the 1995 assessment, Everett and **John Magnuson** served as lead authors for Chapter 8: Oceans, with **Suzanne Bolton, Stephan Arnott, and David Fluharty** as contributing authors. Chapter 16: Fisheries was chaired by Everett, with

Henry Regier and Daniel Lluch-Belda serving as lead authors, and contributions by Bolton, **Steve Clark, Glenn Flittner, Churchill Grimes, Jonathan Hare, Richard Methot, J. Richey, Gary Sharp, Kenneth Sherman, and David Welch.**

A 1998 special report: Polar Regions was co-chaired by Everett with contributions by Bolton. Climate Change 2001 included the efforts of Magnuson and **Richard Beamish** as lead authors of Chapter 5: Ecosystems and Their Goods and Services with contributing authors **J. Morgan, R. Neilson, and K. Wilson.** Beamish also served as lead author on Chapter 6: Coastal Zones and Marine Ecosystems.

Contributions to outside groups such as IPCC require support from supervisors, colleagues, and staff. AFS members **Bill Fox** and **Glenn Flittner** were my bosses while I spent inordinate amounts of my own and agency time writing and traveling. NMFS Director **Terry Leitzell** assigned global cooling to me and **Bill Evans** later changed it to global warming. All five bosses gave me all the resources I needed, particularly the assistance of Suzanne Bolton, who spent the equivalent of a lifetime in the library. Gary Sharp taught me to question conventional climate wisdom and modeling as he challenged the NOAA Climate Board's inability to consider the biology in the oceans as integrators and sensors of all that was going on. Lastly, special thanks go to Henry Regier for helping me keep some sanity as we got the fisheries chapter off the ground, and for suggesting to Gus that these IPCC contributions be recognized. This message is his idea!

I encourage everyone, particularly our young members, to participate in IPCC and similar global endeavors. The new contacts, ideas from different disciplines, broad views experienced, and most importantly, lessons learned in managing a global task force, will lead to enhanced productivity down the road for everyone. For organizations, major unrelated benefits also are made possible. For NOAA Fisheries, the trust built during IPCC meetings led to the rescue of 80 years of invaluable Soviet and Ukrainian fishing research done in U.S. waters and on the high seas, much of it on virgin stocks.