The U.S. Government Accountability Office has issued a report critical to the development of dedicated access privilege (DAP) programs designed to end overfishing and promote conservation. On the gao.gov Web site under recently issued reports, GAO-06-289 is titled “Core Principles and a Strategic Approach Would Enhance Stakeholder Participation in Developing Quota-Based Programs.”

Study tables result from interviews of 58 regional council members — not stakeholders.

The GAO found that current council practices do not fully reflect core principles nor are they based on a strategic approach, nor do they include an implementation strategy. Public comment at council meetings is a one-way communication, not an effective way to share information, because it does not lead to a dialogue between stakeholders and decision makers.

Groundswell Fisheries Movement’s impression was that lacking an effective participation framework, it makes no sense for crews, skippers and the public to let our council go forward with more DAPs at this time. If DAPs are to fight overfishing, then given our council’s proud record of biological management and other tools already available and working, why do we need any more?

The GAO recommended NMFS establish a formal participation policy; adopt core principles; provide training on developing and using a strategic approach; and ensure councils implement a framework for effective stakeholder participation. NOAA agreed to follow the recommendations and form a working group, to jointly develop core principles.

Core principles include: using an open and clearly defined decision-making process; making key information readily available and understandable; actively conducting outreach and soliciting stakeholder input (and involving them early and throughout); fostering responsiveness and interactive communication; using formal and informal participation methods; and including all stakeholder interests.

Methods suggested to enhance participation were greater outreach; holding meetings using different times, locations and formats; streamlining the DAP program development process; diversifying the interests represented in the council process; and sharing decision-making authority. They also mentioned broadcasting meetings to reach those who cannot attend in person, and using facilitators to run meetings.

Over...
Finally, stakeholders said the councils could share decision-making authority by putting DAP proposals to a vote in a referendum, and participating experts suggested using collaborative or consensus-based decision making that allows stakeholders to fully explore issues together.

The GAO said stakeholders new to the process and not members of an organization do not understand which meetings to attend and the appropriate times to submit information on DAP proposals. Most helpful to all stakeholders would be getting involved early and staying involved throughout the development of a DAP program.

Finally, councils do not always provide explanations of how stakeholder input was used, especially when they vote immediately after public comment and do not explain how those views were considered. Meeting minutes do not always address issues raised by stakeholders or explain how their input was used in making decisions.

Respondents said that the cost of travel and time away from work to attend council meetings, discomfort in speaking out, the belief that one’s input will not make a difference, and the complexity of DAP programs most “severely and substantially hinders” the crew and skippers.

The respondents said those who turn to the legislative process to obtain DAPs rather than use the council process do so because “stakeholders wanted to ensure that they got their way.”

In a pre-release letter, NOAA said the “membership of advisory committees is determined by the councils to fulfill specific tasks. While representation is important, primary concerns are that “the committees have the necessary expertise to perform their mission and that they are of appropriate size to be productive.”

Regarding referendum by stakeholders, NOAA adds, “Congress, NMFS, and the councils will have to weigh the benefits of greater stakeholder involvement through such referenda against the need for procedural efficiencies.”

We understand what that means. Meanwhile, plans for DAPs move forward in the most important diverse fishery in the USA – the Gulf of Alaska. And the North Pacific Advisory Panel is so processor-lopsided it makes a laughingstock out of the importance of stakeholder representation.

The GAO staff did well; but a second survey should be conducted by the Department of Justice and choose the crews, skippers and small businesses devastated by crab privatization as respondents. Why not ask more insightful questions, like whether or not DAP programs that include cooperatives or linkages with processors should occur at all?

Until then, keep writing your representatives to ask for better.

Stephen Taufen is a former Alaska resident and has worked for processors in financial and operational capacities for more than 22 seasons in Alaska coastal fisheries. He writes for the Fishermen’s News and other publications.

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See also: Groundswell’s page on AlaskaReport.com website
By STEPHEN TAUFEN, Groundswell Fisheries Movement

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Management of Salmon Mortality Caused by Ceratomyxa shasta in the Klamath River System

Researcher: Jerri Bartholomew

The decline of Pacific salmon has had its full share of controversy and conflict. Certainly one of the most controversial incidents in recent years was the die-off of an estimated 34,000 fish in the Klamath River in September 2002. Although this loss was dramatic because it involved adult fish, the epidemic drew attention to the chronic disease issues that affect the health of migrating juvenile fish. What should be done to improve the health of these fish and insure that such incidents don’t recur is a question with consequences for the farmers, fishers, and communities that depend on the river’s water in Oregon and California, as well as for the tribes and agencies that manage the river.

Fish disease issues in the Klamath River are complicated. The U.S. Fish and Wildlife Service (USFWS), in its report on the 2002 fish die-off, concluded that a “combination of factors” caused it, specifically, “high density of fish, low [river] discharges, warm water temperatures, and possible extended residence time of salmon [which] created optimal conditions for parasite proliferation.” An epidemic outbreak of two pathogens, Ich (Ichthyophthirius multifiliis) and columnaris (Flavobacterium columnare), was the “proximate cause of death,” the agency said. However, fish health-monitoring studies conducted by the USFWS show that mortality in juvenile salmon results primarily from infections caused by myxozoan parasites. As many as 45 percent of juvenile Chinook salmon captured in 2004 in the lower Klamath River were infected with one particularly injurious species, Ceratomyxa shasta, which infects the intestine. Prevalence of infection by another myxozoan, Particapsula minibiornis, which infects the kidney, can be greater than 90 percent. Infection can reach 100 percent for both parasites in fish migrating during spring.

As agencies and the courts have become involved in attempting to balance the needs of the river’s human users, fish, and other wildlife, a key concern is limiting fish disease caused by parasites. Research on these pathogens is a specialty of an Oregon State University (OSU) scientist, Jerri Bartholomew. Bartholomew, a microbiologist with the OSU Center for Fish Disease Research, has investigated the life cycles of these parasites, their distribution in the Pacific Northwest, and their effects on salmon. Additionally, her laboratory has developed molecular methods to better enable detection of the parasite.

Breakthroughs in Parasite Detection

Until now, researchers had no quick, easy way to test for parasite abundance. The assay developed by Bartholomew and co-worker Saskia Hallett with funding from Oregon Sea Grant uses the organism’s own DNA. The method, known as quantitative polymerase chain reaction (QPCR), can detect even 1/1000th of a parasite spore in a water sample.

In the QPCR, a small sample of DNA is copied multiple times so it can be used for analysis, such as in genetic fingerprinting and paternity testing. A fluorescent tag is used to track the reaction so that the amount of accumulated PCR product can be measured.

To detect C. shasta before this breakthrough, scientists had to maintain fish in cages along areas of the river suspected to be infectious and then return them to the laboratory and wait for months to see if clinical signs appeared. There was no way to quantify the number of infectious spores moving through the water.

Bartholomew and her partners used the QPCR methodology to investigate the distribution of C. shasta in the Klamath River (figure 1).
The parasite was detected throughout the river, and two of five tributaries tested contributed parasites to the main stem. Several sites were found to have parasite abundance in excess of 20 spores per liter.

"This is a huge advance in what we're able to do," said Bartholomew. "We wanted to offer a tool that would be useful if managers were to test management options like altering flows at certain times of year, so that effects could be determined immediately."

**Disease Epidemiology**

Another significant finding of Bartholomew's Sea Grant-supported work is that there is a distinct advance in the severity of *C. stasta* infection in fish exposed in different portions of the Klamath River. Specifically, in the reaches below Iron Gate Dam, Chinook salmon are exposed to high parasite numbers that are responsible for the high mortality documented in outmigrating juvenile fish. Above the projects, infection patterns are variable, and particularly in reservoirs, exposure is low and not likely to result in mortality. The life cycle of *C. stasta* is established in the main stem of the Klamath, with little contribution from the tributaries.

**Parasite Life Cycles**

*C. stasta* was previously discovered to have a two-host life cycle with development in both a fish and a polychaete worm (*Manayunkia speciosa*) (figure 2). One additional result of Bartholomew's Sea Grant project has been the discovery that the life cycle of *P. minibicornis* is very similar, requiring the same worm host (figure 2). This organism was only recently identified in the Klamath system. However, the parasite is considered a contributor to mortality of adult salmon in rivers in British Columbia and has been detected in the Columbia River Basin. The finding that these parasites share the same host will have important implications for management of these diseases.

During the past two years, a graduate student in the Bartholomew lab has conducted an extensive survey for polychaetes throughout the Klamath River. As a result, says Bartholomew, "we are beginning to understand why disease is so severe in certain locations."

Polychaete distribution is highly patchy and influenced by in-stream primary productivity, flow, substrate embeddedness, and the presence of compact algal epiphytes such as *Cladophora* species. Infection rates in these polychaete populations also differ, contributing to variations in disease severity in fish.

In a new research project with Oregon Sea Grant, Bartholomew focuses on both *C. stasta* and *P. minibicornis*. The objectives include the development of similar diagnostic methods for *P. minibicornis*, a comparison of the distribution and seasonal occurrence of these parasites in the Klamath River, a determination of the role of various salmonids in supporting the life cycle of these parasites, and a determination of the effects of the parasites on seawater survival of salmonids.

"One of our goals is to provide information to those involved in salmon recovery that will enable them to more effectively manage the system to decrease the effects of the disease."

Collaborators with the OSU research team include the California-Nevada Fish Health Center; the U.S. Fish and Wildlife Service, Arcata, California; the Yurok, Hoopa, and Karuk tribes; PacificCorp; and Humbolt State University.

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Written by Joe Cone and Jerri Bartholomew. Virginia Gewin contributed to this report.

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