

Fisheries Management Section of the American Fisheries Society

(<http://www.sdaafs.org/fmsafs/>)



NEWSLETTER VOL. 20 #2

FALL 2001

President's Message

Fisheries Management Relevance in Today's World

Like many of you I suspect, I have been attempting to reach down deep within myself during the past few weeks to make some sense out of what I do for a living in relation to what has been going on in the world around me. Don't get me wrong. I have been hearing many other people outside of the fish and wildlife professions also say that it has been difficult for them to focus since September 11. Evil in our fisheries world seldom goes beyond poaching or intentionally taking fish beyond the creel or harvest limits. Sometimes board or commission members seem bent on exhausting a resource beyond its capacity to rebound, but it is difficult putting this into the same context as actions that result in the direct taking of the lives of thousands of innocent people.

So what is a fisheries manager to do in this crazy world? I certainly don't have all or even most of the answers. It does seem to me that we are a truly committed bunch of people who believe that human beings are capable of taking care of this earth. When I began writing this article, I gazed up at my Vermont Department of Fish and Wildlife calendar that I brought with me to Arlington this year. I noticed that I had forgotten to flip September over, but before doing so, read again the quote from Aldo Leopold that was used for that month. "We shall never

achieve harmony with land any more than we shall achieve justice or liberty for people. In these higher aspirations the important thing is not to achieve but to strive."

I am not sure that I could have found any more sage advice. As long as the good people of this earth strive for justice and liberty, we must protect that for which we fight and for which many give their lives. Our way of life is sustained by the land and the water and the creatures that dwell upon and within them. We must not fail to strive for harmony between man and fishery resources, lest those that come after us will have lost some of their freedoms as a result.

Continue to fight the good fight in fisheries management. Take a kid fishing, and let him or her know what life in a free world is all about. Thanks, and may God bless you, your families and friends, and all countries engaged in this battle.

-- Tim Hess (President)



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ISSUE FEEDBACK

Issue Background: For some states, the issue of including sport fish consumption advisories as part of the annual fishing regulations booklet is a conflict between the state's fish and wildlife agency and public health agency. Some states include substantial fish consumption advisory information in the regulations booklet, some include none at all. Some states have an advisory booklet produced by the public health agency that is completely separate from the fishing regulations booklet.

The Issues:

- 1.) How much and what type of fish consumption advisory information does your agency include in your sport fishing regulations booklet?
- 2.) Why do you put in this amount and type of fish consumption advisory information?
- 3.) If extra pages or expenses are involved, who pays the extra cost?



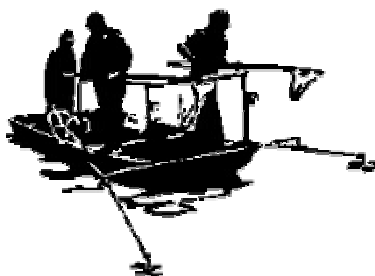
Chuck Coomer

Georgia Department of Natural Resources

Four pages of the 36-page regulations booklet are on fish consumption advisories. The four pages provide information on the health benefits of eating fish, a descriptions of how the guidelines are developed, special restrictions for pregnant women, nursing mothers and children, ways to reduce your risk, a listing of the reservoirs and rivers tested in the state, and what consumption restrictions are recommended. The consumption restrictions are listed by species and are either no restrictions, one meal per week, or one meal per month.

This is the minimum information we feel each sport angler should have available. Additional information is available in the "Guidelines for Eating Fish from Georgia's Waters" produced by our Environmental Protection Division and available on the internet at www.dnr.state.ga.us/dnr/environ/.

Cost for the sport fishing regulations is paid for by our agency. The four pages on fish consumption advisories contain information we consider important to our anglers.



Dennis Riecke

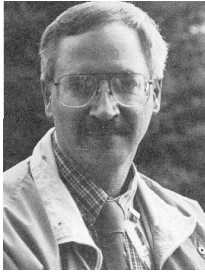
Mississippi Department of Wildlife, Fisheries, & Parks

We publish the name of the water body, the contaminant, the year the advisory or commercial fishing ban was issued and health department recommendations on consumption levels for adults, children and pregnant women.

We feel that including complete fish consumption advisory information in our annual digest of fishing and hunting regulations is the best way to inform our anglers about the health risks associated with their consumption. We print 375,000 copies of our digest for distribution at all agency facilities and license vendors. The Mississippi Department of Environmental Quality and the Mississippi Department of Health do not have any publications that would reach this number of anglers. No one is willing to post signs at the water bodies having consumption advisories.

One extra page is involved and MDWFP pays for it.

ISSUE FEEDBACK



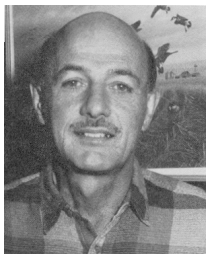
Ron Payer

Fisheries Chief, Minnesota
Department of Natural Resources

We provide the Minnesota Department of Health one full page in our 8"x5" regulations booklet. The information that is presented in the booklet is submitted by the Health Department. Our graphics staff works with them to do the layout. The information in the booklet covers general guidelines for consumption by adults, children, and women of child-bearing age. It also covers the benefits of eating fish, highlights that contaminated fish can be store-bought or sport-caught, tips on how to reduce contaminants, and directs them to sources to get additional information, including each agency's web site.

We work closely with the Department of Health. We follow their recommendations as to what type of information they think should be provided to the anglers through this booklet.

We provide the one page for this information at no cost to the Department of Health. If they wished to expand the number of pages of information, we might ask them to pick up some or all of the cost depending on what that information entailed.



Marion Conover

Iowa Department of Natural
Resources

Iowa may be the only state where the Fisheries shop in that state's resource management agency determines when and where fish consumption advisories are issued. Our state health department has elected to not weigh in on this issue. Advisories are issued when two consecutive samples from a site exceed Food and Drug Administration action levels. Advisories are not fragmented into levels, but rather simply recommend that no fish of the species in question be consumed. This information is printed in our fishing regulations booklet along with a general outline of our past and present fish tissue sampling program and trends in fish contaminants. This information is straightforward and contained in less than 200 words.

We are fortunate that we have but one consumption advisory from the 525 sample sites where fish tissue has been collected in recent years. Using FDA action limits greatly simplifies the process and allows us to communicate advisories to the public in concise and meaningful ways.



Douglas L. Stang

Bureau of Fisheries, NYSDEC

In New York State, we include health advisories for sport-caught fish in our regulations guide. Our advisory lists the general, statewide consumption recommendation of no more than one meal (1/2 pound) per week of fish from any freshwater as well as further restrictions on a water-by-water, species, and size basis for those waters where monitoring has found elevated levels of contaminants. We also provide advice on eating fish from portions of the marine district, on reducing exposure to chemical contaminants in fish via proper preparation and cooking, and where to seek additional information concerning advisories (including the most up-to-date listing of advisories), contaminant levels in sport fish, and Department of Health information on health effects from exposure to chemical contaminants. The consumption advisory and information takes up 5 of 64 pages in our regulations guide.

Our agency bears the cost of this information. The NYS Department of Health also produces an annual booklet on the latest advisories concerning consumption of sport caught fish. This information is also accessible via our agency website.

See Stang page 4...

ISSUE FEEDBACK



Eric Schwaab

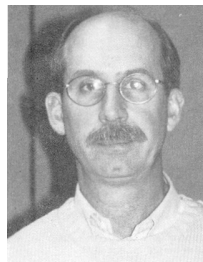
Maryland Department of Natural Resources

The Maryland Department of Natural Resources produces two license brochures. One for non-tidal waters and one for Chesapeake Bay. The freshwater license brochure lists details of the only fishing health advisory in non-tidal waters in Maryland, Lake Roland in Baltimore County. The notice lists the body of water, the species of fish affected by the advisory, limitations on consumption, and the contaminants involved. The Chesapeake Bay Sport Fishing License brochure lists the only two fishing health advisories in Maryland's tidal waters, Back River in Chesapeake Bay and the Baltimore Harbor. The notice lists the bodies of water, the species of fish affected by the advisory, limitations on consumption, and the contaminants involved.

We feel that fish health advisories need to be visible and the public needs to be aware of the risks associated with consuming fish in those areas. As a result, we have tried to make the information on these areas as visible and understandable as possible. It is important to note that the same advisories that are listed on our sport fishing license brochures are featured on our website in much greater depth. In fact, we are also exploring ways to enhance the effectiveness of our notification process, with our web site being a primary vehicle.

Stang (continued)...

We provide this information as a service to anglers in New York State so they can, hopefully, make an informed decision about consuming fish from a given body of water and to plan their outings accordingly. We also provide additional information via brochures on preparation and cooking of anglers' catch to reduce possible contaminant exposure. We could provide an additional service to anglers if we also listed those waters where we have conducted contaminant testing of sport fish and found undetectable or "below actionable" levels of contaminants. To date, we have not been approved to provide this information due to the "mixed message" it would send in light of the general, statewide advisory.



Dennis Unkenholz

Fisheries Program Administrator,
South Dakota Game, Fish, and Parks

Currently, no information regarding fish consumption advisories occur in the South Dakota Fishing Handbook. South Dakota has one lake with a fish consumption advisory at present. We have chosen to post the lake and publicize the advisory locally. We plan to add a section to the 2002 Fishing Handbook that discusses fish consumption advisories and a bit about the sampling program in South Dakota. The wording to explain all that has not been developed at this time.

The justification for adding fish consumption advisory information to the Fisheries Handbook is that the Game, Fish and Parks Department has a responsibility to inform those we serve. We also know the Fisheries Handbook is the single most read publication by South Dakota anglers making it a good means to share information.

The cost of the Fisheries Handbook is underwritten by the Game, Fish and Parks, Wildlife Division. The cost is pro-rated based on whether information is aquatic education information, biological information regarding fisheries, boating safety, or rules and regulations. At this time we will edit existing text to allow space for consumption advisories without adding additional pages to the handbook.



All printed materials and information created for our web server is funded by the Department of Natural Resources.

ISSUE FEEDBACK



Don Gabelhouse

Nebraska Game and Parks
Commission

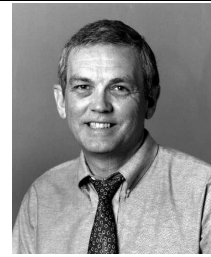
The *2001 Guide to Nebraska Fishing Regulations and Public Waters* contains one 8½ x 11-inch page that lists the water bodies with advisories, their location, the pollutant(s) of concern (dieldrin, PCB's, DDE or mercury), the year each advisory was first issued, the fish species sampled to establish each advisory, and whether each advisory is for the entire human population or restricted to women of child-bearing age, infants and children less than 15 years of age. We advise that, "Although fish consumption advisories have been issued for the water bodies listed here, please note that a person consuming an occasional meal of fish (less than one 5-ounce serving per week) from these waters is not considered to be subject to a significant health risk." and "At this time, there are no advisories that limit total consumption!" We also illustrate how to clean a fish to minimize risk of exposure (cut away all fat along the back; remove all skin; slice off all belly fat; and cut away a V-shaped wedge to remove the fatty tissue along the entire length of the fillet).

Through 2000, we had two additional pages of information. On

one page, there was information that explained the fish tissue testing program, compared our advisory program to those of other states, described Nebraska's primary contaminants, established the probabilities of risk, explained a "bottom line" and provided addresses and phone numbers to contact for more information. An additional page recorded sites removed from the advisory list the previous year and waters tested and found to be safe. But, for 2001, we decided that it was excessive to dedicate 10% of our guide to this subject; much of the information contained in the 2000 guide was provided in a separate pamphlet, *Eating Fish Caught in Nebraska*, developed jointly by the Nebraska Game and Parks Commission, the Nebraska Department of Environmental Quality, and the Nebraska Health and Human Services System.

We believe we have an obligation to inform the public of the potential risk. In addition, one of our state senators champions and drives Nebraska's multi-agency efforts related to fish consumption advisories. Even though we have a fairly aggressive fish consumption advisory program, we still need to make improvements. Fish tissue is currently tested with the skin attached; fillets processed as described above need to be analyzed in addition to or instead of tissue with the skin attached. In our pamphlet, *Eating Fish Caught in Nebraska*, we explain that advisories are based on samples of predator (largemouth bass and northern pike) and bottom-dwelling species (channel catfish and common carp)

See Gabelhouse page 17...



Fred A. Harris

Chief Division of Inland Fisheries
North Carolina Wildlife Resources
Commission

We list each advisory for each body of water in our regulations booklet. We summarize in the advisory: number of meals per week, no consumption, groups affected (children, women of child bearing age, etc.), and we list the pollutant causing the advisory.

We feel we have an obligation to inform anglers about consumption advisories so they can make informed decisions about eating fish. As a result we display the advisories very prominently in our regulations booklet.

Lastly, we pay all costs associated with publishing the information.

Hall of Excellence

The Hall of Excellence (HOE) Committee is soliciting nominations for induction into the Section's Hall of Excellence located at the AK-SAR-BEN Aquarium in Gretna, Nebraska.

Background information on the HOE can be found at the FMS website at www.sdafs.org/fmsafs.

Please submit all nominations to Stephen G. Rideout or visit the FMS website for information.

ISSUE FEEDBACK

John Roussel

In our fishing regulations booklet we inform anglers of the various contaminants that may be found in fish, the fish consumption advisory process, the differences between organic chemical contamination and metal contamination, a cleaning method than can be used to partially remove organic contamination, and water body specific advisories. The advisory list includes water body, type of advisory (fish consumption or water contact), the species included in consumption advisories, and the consumption limits by species. In Louisiana, we divide consumers into 2 groups: 1) pregnant women, breast-feeding women, women planning to become pregnant and children less than 7 years of age, and 2) other adults and children. We include all state fish consumption advisories. Our fishing pamphlet has 47 pages with the consumption information taking up 5 pages.

The Department worked closely with several other state departments developing the advisory process. During those discussions we realized the necessity of informing the public of the advisories by a means in addition to news releases. From a practical standpoint, the fishing regulation pamphlet appeared to be the best means of providing the information to those needing it.

The first year we printed the advisories in the Department's fishing regulation pamphlet, the La. Department of Health and Hospitals paid for the extra pages. Since that time, the LDWF has paid for the extra pages.



Stan Cook
Chief of Fisheries
Alabama DCNR

Fish tissue samples are run by Alabama Department of Environmental Management for various toxic chemicals from selected bodies of water each year. They turn their results over to Alabama Department of Public Health who issues fish advisories through the media and print. Our agency assists when available in the collection of fish and also has assisted Public Health with the posting of signs.

Therefore, our agency does not specifically print advisory material. This responsibility falls under the Department of Public Health. However, we do use their pamphlets and website to inform anglers.

Gary L. Isabell
Executive Administrator
Fish Management & Research
Ohio Division of Wildlife

Our regulations pamphlet has only a minimal amount of information about fish consumption advisories and directions for people to get access to more. In Ohio, the Health Department has primary responsibility for this issue. We do



Virgil Moore
Fisheries Chief
Idaho Department of Fish & Game

In Idaho - none at this time. We have put some in the past but felt this was the responsibility of the Idaho Department of Health and Welfare to get this out.

We do not put it in because our regulations are biennial and the health advisory information is not updated in a timely fashion and has not been consistent in coming from the Dept. of H&W.

The IDH&W would have to bear the extra page charges in the brochure if they desire to get this printed. We sell ads in our brochure so they could also buy an ad from our contractor.

cooperate in the preparation and distribution of a separate advisory booklet from ODH. While we bear the cost of distribution of the pamphlet along with our regulations guide, ODH prints them.

It is our position that the ODH should be the primary source of the advisory information and that they should bear the majority of the costs. When changes in the advisories are made, anglers need to understand that ODH, with some collaboration with ODNR and OEPA, makes the final call.

ISSUE FEEDBACK/ARTICLES

Larry Peterman

Fisheries Division Administrator
Montana Fish, Wildlife, and Parks

We include a two-paragraph section, which mentions that the Advisory is issued by the Department of Public Health and Human Services. A phone number is provided as a way for interested persons to get a copy of the Advisory. This brief section also mentions that some Montana waters have fish containing chemicals that may be harmful to different groups of people.

It was felt that listing the entire advisory (i.e. the levels of mercury and PCBs in different fish species in different water bodies) in the regulations would take up too many pages and add "clutter" to a regulations booklet that is already crowded and complex. It was also felt that listing the entire Advisory would potentially lead to an irrational reaction and/or a hasty interpretation. Some people might not take the time to fully understand the Advisory and the science behind it, and would overreact by not eating or fishing on lakes merely because they were listed on the Advisory. If this misunderstanding was transferred by word of mouth, then it would not be long before large numbers of anglers had wrong information. It was felt that by asking people to phone in for a copy of the Advisory, it would give the staff an opportunity to talk individually with people and make sure that they understood the Advisory and its implications.

Montana Fish, Wildlife, and Parks would pay for the extra costs that might ensue during the publication of an advisory.

Capture more fish While slashing fish injury with the Coffelt CPS™ Electrofishing System

Traditional electrofishing equipment can cause significant spinal injury in up to 80% of captured fish -- with obviously prejudicial effects on fish research or management data.

Now, Coffelt engineers have developed the CPS™ (Complex Pulse System), a pulse train with the ideal shape, duration, frequency and repetition sequence to combine a dras-

tically reduced injury rate with a capture efficiency equal to or better than traditional systems.

This revolutionary new system is now available in either the Mark 20 boat mounted model or the popular Mark 10 backpack model. Give us a call for more information.

Returning healthy fish to the water. Isn't that what it's all about?



Klamath Mountains Steelhead Among the Region's More Abundant: Federal Protection Won't Be Needed, Fisheries Service Says

Brian Gorman
(206)526-6613

http://www.nwr.noaa.gov/1press/kmp_pr.ht
[ml](#)

March 30, 2001: The National Marine Fisheries Service said today a population of steelhead salmon from southern Oregon and Northern California is among the more abundant in the region, making federal protection not needed. The population, known officially as KMP steelhead (for Klamath Mountains Province), includes summer- and winter-run steelhead

from the basins of the Rogue and Klamath rivers.

In 1995, the fisheries service responded to a 1992 petition, that the fish be listed as "threatened" under the Endangered Species Act. Then in 1998, following a series of scientific reviews, the agency concluded that protection for the population was "not warranted," saying that it would continue to monitor the fish's condition and re-assess it by 2002. A lawsuit followed, and last October, a U.S. district court set aside the "not warranted" determination and told the fisheries service to reconsider its decision. The October court ruling required the fisheries service to make its final determination by March 31.

See Steelhead page 12...

ARTICLES

LAKE FORK SLOT-LENGTH LIMIT EXEMPTION STUDY

Based on the results of the Texas Parks and Wildlife (TPW) bass tournament slot-length limit exemption study, it is recommended that exemptions from length and bag limits for tournament participants at Lake Fork not be allowed at this time.

Slot-length limits that require anglers to release fish of a certain size group are sometimes unpopular with tournament organizers and tournament anglers because some of the bass caught during a tournament must be released before they can be "weighed-in". With some exceptions, this has typically meant that fewer bass tournaments are held at lakes that are managed using slot-length limits.

Currently a 16-24-inch slot length limit is used to manage largemouth bass at Lake Fork. As a result, some tournament organizers and merchants in the Lake Fork area expressed their interest to the Texas Legislature and TPW for a rule change that would exempt organized tournaments at Lake Fork from the slot-length limit.

Groups supporting an exemption believed that allowing an exemption from the slot-length limit would facilitate more tournament activity at Lake Fork and result in a greater economic impact on the local area. Others, including non-tournament anglers and fishing guides, subsequently expressed opposition to exemptions citing that such a rule would grant a special privilege to a small number of anglers. Although tournament anglers would be required to release all bass following weigh-in, they believed

that increased bass mortality could impact bass populations over time.

Because little information existed concerning the biological, social, or economic impacts that such an exemption could have on the Lake Fork fishery, TPW Inland Fisheries staff conducted research relating to that question at Lake Fork in October 1999.

An experimental bass tournament allowing a slot-length limit exemption was held on October 9 and 10, 1999 at Lake Fork under TPW supervision. Portions of the bass caught during the 2-day tournament were held in large holding nets to determine delayed mortality due to angling. Mortality was determined for three groups of bass: catch and release bass (bass caught and immediately released), catch cull and release bass (bass caught, held in a live well for a period of time and later culled) and catch weigh-in and release bass (bass caught, held in a live well, transported, weighed for competition and then released).

Questionnaires were mailed to tournament participants, tournament spectators, and tournament staff to determine their economic impact on the local area and to obtain their attitudes and opinions concerning slot-length limit exemptions for tournaments at Lake Fork. Likewise, questionnaires were mailed to Lake Fork anglers, merchants, and guides to obtain their attitudes and opinions.

Numerous bass died as a result of the tournament activities, and many were large slot-sized fish.

After being held in nets for 6 days, 3% of the catch and release bass died, 20% of the catch cull and release bass died, and 38% of the catch weigh-in and release bass died. These mortality rates are at the high end of the range experienced in previous studies. It is likely that the combination of larger fish and water temperatures increased the susceptibility of bass to tournament-induced mortality.

A clear difference of opinion existed among the various stakeholder groups. Most tournament participants (71%), merchants (61%), and tournament staff (100%) supported allowing slot-limit exemptions for tournaments at Lake Fork while most spectators (56%), Lake Fork anglers (67%), and guides (75%) opposed exemptions for tournaments. However, high tournament-related mortality was apparently a concern for all stakeholder groups. Less than 20% of stakeholders from all groups supported an exemption when they were aware that mortality of bass in tournaments could potentially be 40% or greater. Although additional experimental tournaments were planned, none were held because the stakeholders originally supporting exemptions declined to organize them. Apparently this change in attitude was a result of weigh-in mortality during the first tournament approaching the maximum accepted level for all stakeholders.

See Lake Fork page 13...



ARTICLES

Fish Consumption Advisories as a Result of Increased Mercury Concentrations

The Fisheries Management Section of the American Fisheries Society is deeply concerned about the elevated levels of mercury in fish flesh that have resulted in fish consumption advisories being issued in forty-two (42) states on one or more species of freshwater fish. In addition to advisories on freshwater fish, the Food and Drug Administration has issued advice on mercury in ocean and coastal fish such as shark, swordfish, king mackerel, or tilefish bought from stores and restaurants.

While mercury occurs naturally at low levels in some areas, emissions from coal-fired power plants, industrial boilers, and waste combustors are the primary sources of mercury found in our water bodies. Mercury is highly volatile and once airborne can travel short <100 km to very long distances (globally) before settling to earth. Mercury that enters water bodies settles in the substrate where it is transformed by microorganisms to the highly toxic organic form-methylmercury. The methylmercury is taken up by invertebrates and other aquatic life then moved up the food chain where it bioaccumulates or concentrates in the flesh of fish. Methylmercury concentrations are highest in larger, predaceous fish, such as largemouth bass, and have reached the level of concern for human consumption in the flesh of fish found in many water bodies. Methylmercury primarily affects the central nervous system of

developing fetuses and young children. Women who are pregnant, nursing, or of childbearing age and young children should follow their state consumption advisories guidelines. The fish consumption advisories are of particular concern because fish are a critically important and otherwise healthy source of protein in our society and throughout the world. Additionally, fish-eating birds and mammals that eat large amounts of fish are at risk of developing mercury poisoning. It is believed that some populations of these birds and mammals are suffering neurological damage and reproductive disorders.

Our primary mission as fisheries professionals from throughout North America is to protect and manage our nation's commercial and sport fish. We therefore need to continue to urge the Environmental Protection Agency (EPA) and others to take actions necessary to reduce the release of mercury into the atmosphere by coal-fired power plants and other industries. Methylmercury is very persistent and it will take several years after mercury emissions are reduced before we begin to see reduced levels of methylmercury in fish and the environment. In a letter to the Honorable Christine Todd Whitman, Administrator of the U.S. Environmental Protection Agency the Fisheries Management Section has urged the EPA to take the actions necessary to reduce mercury emissions. The FMS stands ready to assist in any way to address this high priority concern.

-- Norm Stucky

LOWER KOOTENAI RIVER BURBOT CONSIDERED FOR PROTECTION UNDER ENDANGERED SPECIES ACT

Susan Martin or Bob Hallock, 509-891-6839
<http://www.r6.fws.gov/pressrel/01-46.htm>

October 2, 2001: The U.S. Fish and Wildlife Service announced today that it will conduct a formal review of burbot (*Lota lota*) found in the lower Kootenai River to determine whether that population of the fish should be protected under the Endangered Species Act.

This review is being conducted in response to a petition filed by American Wildlands and the Idaho Conservation League. The Service determined that the petition contained sufficient information indicating that burbot in the lower Kootenai may require listing. Under the Act, the Service now will conduct a complete review including evaluating information submitted by the public.

Specifically, the Service will evaluate the burbot population that spawns in winter in north Idaho's lower Kootenai River and its tributaries in northwest Montana, Idaho and British Columbia. This species also spends part of its life cycle in the south arm of Kootenay Lake in British Columbia.

"Today's determination is the first step in the process of determining whether a species warrants listing under the Act, and we encourage the public to provide scientific data and other information on this population of burbot," said Anne Badgley, regional director of the Service's Pacific region.

See Burbot page 20...

ARTICLES

NEW DATABASE OF WILD FISH HEALTH INFORMATION IS UNVEILED BY U.S. FISH AND WILDLIFE SERVICE

Ken Burton 202-208-5634
Sharon Rose 303-236-7917 x415
<http://www.r6.fws.gov/pressrel/01-40.htm>

September 21, 2001: An extensive national database outlining the distribution of disease-associated pathogens in America's wild and free-ranging fish populations -- viewed as critical to fishery management decisions throughout the United States was unveiled today by the U.S. Fish and Wildlife Service. Scientists said it points to "a relatively healthy picture."

The National Wild Fish Health Survey is the first effort to develop a readily accessible, reliable, and scientifically sound database that documents the national distribution of specific pathogens (organisms capable of causing disease) in free-ranging fish. The project was prompted in 1996, in part, when whirling disease began killing trout in Montana and Colorado. Whirling disease has also been found in trout populations in 20 other states.

Biologists have expressed concern about earlier theories that more fish pathogens might be infecting fish populations previously believed immune to certain diseases, but the Survey does not show that to be happening. Cathleen Short, Assistant Director for Fisheries and Habitat Conservation, said Senator Conrad Burns deserved credit for being "a driving force" behind making the Survey a reality. "Without the Senator's leadership, the Survey would not have happened. It is a critically important piece of work for

which the entire nation can be grateful. Healthy fish mean a healthy environment and a healthy economy," said Short. "This Survey tells us about potential threats to the well-being of America's fish populations and helps managers see that this resource remains vital and abundant."

Short said that much of the present understanding of fish pathogens and the diseases they cause has been gained by observing captive fish populations in either hatcheries or laboratories, and that "surprisingly little is known about the prevalence of pathogens among wild, free-ranging fish. That's another reason why this Survey is very important." Short said the Survey indicates that the overwhelming majority of fish tested from the wild are healthy, "and that's terrific news for the nation."

The Survey was conducted through a partnership of natural resource management organizations, including other federal, Native American, state, and private agencies and groups. It becomes available to fisheries managers and the public today on a Worldwide Web-based Internet site, at <http://wildfishsurvey.fws.gov>.

The Survey divides fish pathogens into two main groups: Principal Fish Pathogens and Pathogens of Regional Importance. Principal Fish Pathogens are those tested at all nine U.S. Fish and Wildlife Service Fish Health Centers across the country. Many of those tested for the Survey are also included within the Service's National Fish Hatchery inspection program. This group is extensive and includes the organisms that cause whirling disease and bacterial kidney disease. The other group of pathogens tested is those that the Fish Health Centers deem important in their part of the country. Those are called Pathogens of Regional Importance and include

largemouth bass virus in the Southeast and Asian tapeworm in the Southwest.

Fish pathogens comprise a large and diverse group of organisms ranging from microscopic bacteria and viruses to large parasitic worms. The severity of disease caused by fish pathogens also varies widely and depends on a number of important factors. Some pathogens cause only mild effects, if any, on individual fish while others may cause catastrophic die-offs of whole populations. Disease results from the unstable interaction of three main variables: the fish host, the fish pathogen and the water the fish live in. Fish are continually exposed to pathogens but generally become diseased when stressed by contaminants, poor water quality or other similar factors. A few pathogens may cause disease in healthy fish regardless of stress.

Understanding the distribution of fish pathogens throughout the United States will help strengthen the biological basis of laws and regulations that govern the sale and transport of aquatic species as well as aquaculture products. That information can help protect such industries from costly diseases and indirectly safeguard thousands of American jobs.

The Survey also promotes recreational fishing, ensuring that both wild fish and stocks enhanced with hatchery-reared fish are healthy and sustainable. Healthy recreational fisheries provide the base for 1.3 million jobs and \$70 billion in economic output generated by more than 50 million anglers in the United States.

See Fish Health page 12...



AUSTEVOLL AQUACULTURE RESEARCH STATION
Sensory Biology and Behaviour Group

Austevoll, 20 August 2001

26th Annual Larval Fish Conference
22-26 July 2002, Bergen, Norway

Colleagues,

As you may already know, the 26th Annual Larval Fish Conference (LFC) will be held in Bergen, Norway. Our goal is to attract the complete range of researchers working on the early life history of fishes: from embryologists through to fisheries ecologists.

Details about the meeting - including the venue (the beautiful Solstrand Fjord Hotel), planned theme sessions, and tourist information -- are already available on the LFC 2002 internet site:

www.fishlarvae.com/lfc

Please express your interest in the Conference by adding your name to our mailing list (online), or by contacting the undersigned.

We hope that you are as excited about this event as we are, and we look forward to seeing you in Bergen in July 2002!

Sincerely

Howard I. Browman, Ph.D.
Senior Research Scientist
Leader, Sensory Biology and Behaviour Group
Organizer, LFC 2002

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ARTICLES

FISHHOOK WATERFLEA FOUND IN LAKE ERIE

Contact
Randy Sanders, ODNR Division of Wildlife
(614) 265-6344
or
Andy Ware, ODNR Media Relations
(614) 265-6882

October 25, 2001: Another aquatic nuisance species, the fishhook waterflea (*Cercopagis pengoi*), has been identified in Lake Erie, according to the Ohio Department of Natural Resources (ODNR). No more than one-half-inch long, this tiny animal has the potential to cause problems for Ohio anglers and Lake Erie fish.

"Fishhook waterfleas feed on zooplankton, small animals that larval fish need to survive," said Gary Isbell, executive administrator for fish management with the ODNR Division of Wildlife. "At this point, we have no idea how this nuisance species may affect sport fish in Lake Erie, but any exotic species is potentially trouble." Anglers in other Great Lakes experiencing the fishhook waterflea report the nuisance species accumulating on trolling lines and clogging up the first eyelet on fishing rods making it difficult to reel in fish.

Named for the S-shaped hook in its long tail, the fishhook waterflea is part of a group of organisms known as crustaceans, including such larger species as crayfish and shrimp. As the shallowest and warmest of the five Great Lakes, Lake Erie provides a favorable habitat to the highly reproductive waterflea.

Originally from Eastern Europe, the fishhook waterflea was first found in the Great Lakes in Lake Ontario in 1998 and Lake Michigan in 1999. Wildlife scientists believe that it was initially introduced to the lakes by an

ocean-going freighter releasing ballast water.

The Lake Erie specimens were found just south of the mouth of the Detroit River, leading biologists to believe that the fishhook waterflea is now also in Lake St. Clair. The specimens were identified by biologists at The Ohio State University working in a cooperative research project with the ODNR Division of Wildlife. The study is headed by OSU professor and aquatic ecologist Dr. David Culver.

Isbell suggests the following measures to help stem the spread of aquatic nuisance species in Ohio:

- Thoroughly clean all fishing tackle, diving gear, nets, boats and anything else that may hold water before moving from one lake to another.
- Drain water from boat motors, live wells, bilges and transom wells while on land before leaving a water area.
- Empty bait buckets on land upon leaving the water and before you leave the area. Do not release live bait into a body of water or release animals from one body of water into another.
- Discard contaminated fishing line and nets that are uncleanable.

Fish Health (continued)...

The Survey will also be an important aid to biologists working on restoration and recovery of threatened and endangered species. Knowledge about pathogens of imperiled species and the ecosystems into which they are to be reintroduced will significantly improve the success of such management actions in returning or restoring imperiled species to their natural habitats.

Steelhead (continued)...

"We took the court's charge very seriously," said Donna Darm, acting head of the National Marine Fisheries Service's Northwest Region in Seattle. "We've done an exhaustive job of reevaluating this fish's status, working with biologists from the states, tribes, and other federal agencies, and with an array of local fishermen, landowners, and conservation groups. We know more about this fish now than we possibly could have back in 1998," she added.

The outlook for these fish has improved measurably, and it isn't likely to become endangered in the foreseeable future. Agency biologists said harmful effects from Oregon hatcheries are much lower than had been previously reported and natural steelhead populations are more widely distributed than had been thought.

Agency biologists also said although solid estimates for the fish's population are still not available, the latest information puts the current population of KMP steelhead at least 50,000 fish - and perhaps more than 100,000.

Weather Loach Sited

We recently verified for the first time, the presence of a self-sustaining population of weather loach, *Migurnus anguillicaudatus*, in NYS. They were collected in a large 80-acre marsh tributary of Chautauqua Lake in the upper Allegheny River System. I can only speculate that the original introductions were an aquarium release. They have also been collected in MI, WA, CA, ID, OR, and FL. I would be interested in any information regarding their presence I other states and interaction with native species.

- Paul McKeown

pemckeow@gw.dec.state.ny.us

ARTICLES

Announcing the Release of a New Software Package

FISHERY ANALYSES AND SIMULATION TOOLS (*FAST*)

FAST uses age-structure data and Beverton-Holt equations to compute equilibrium yield-per-recruit and dynamic pool models to simulate the dynamics of exploited freshwater and marine fish populations and includes recreational and commercial applications. FAST is user-friendly and requires no programming. Minimum, slot, and inverted slot length limits can be evaluated. FAST also provides the analyst with procedures to compute:

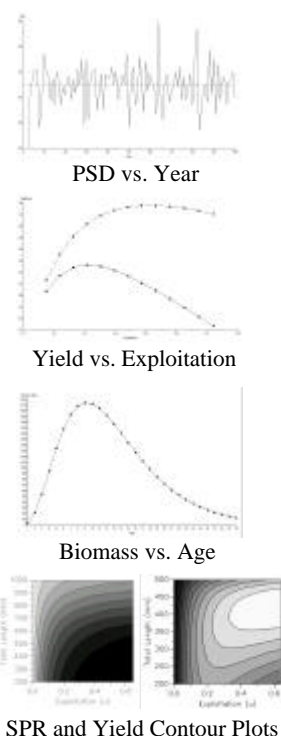
- estimates of growth (von Bertalanffy; weight:length) and mortality (natural and fishing)
- stock density indices (PSD, RSD's) and relative weight
- population simulations under conditions of constant, systematic or stochastic recruitment
- abundance of fish above or below specified length designations
- Spawning Potential Ratio (SPR)

FAST comes with a 140 page manual, fishery examples, and support documentation as PDF files. The software and manual can provide media for instructors teaching advanced undergraduate or graduate classes in fish population dynamics. FAST is available on CD-Rom and requires 15 MB of disk space, and can be installed on any PC with Windows 95 or higher. FAST was developed by Jeffrey W. Slipke and Michael J. Maceina, Dept. of Fisheries, Auburn University, AL 36849 USA.

Cost: \$75 per copy for single user

To purchase: Send check or purchase order to the AFS Computer User Section, Attention: Darren Benjamin, Software Librarian, Atlantic States Marine Fisheries Commission, 1444 Eye Street, NW 6th Floor, Washington, DC 20005 USA email: dbenjamin@asmfc.org

For further information go to <http://www.ag.auburn.edu/dept/faa>



Lake Fork (continued)...

The expenditures of tournament participants, spectators, and tournament staff had total economic impact of \$126,434 on the local area and an economic impact to Texas of \$36,054.

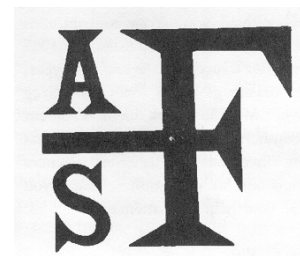
Slot-sized fish might be more susceptible to stresses associated with confinement in a live well (e.g., low dissolved oxygen, limited space, inadequate water for remaining upright), but smaller fish might be more susceptible to stresses associated with the weigh-in (e.g., fluctuating temperatures, physical handling, confinement in a bag).

Actions such as improved live well design, handling and weigh-in techniques, and avoiding tournaments during hot months could help minimize tournament

related bass mortality. Moreover, the use of an alternative tournament format such as paper tournaments could almost eliminate tournament-related mortality.

The benefits of a slot-length limit exempted tournament must be weighed against the cost to the fishery by increased bass mortality and the social conflict created by the difference of opinion among Texas anglers. A tournament exemption at Lake Fork could be beneficial by providing additional tournament opportunities, increasing the number of tournaments, and the local economic impact of the fishery. However, TPW is responsible for managing fisheries for all anglers, and future management efforts should focus on reducing social conflict related to tournament slot-length limit exemptions. Concern for excessive

bass mortality is common to all stakeholders, and TPW should work with tournament anglers and organizers to encourage alternative tournament formats and develop procedures to minimize bass mortality.



ARTICLES

U.S. FISH AND WILDLIFE SERVICE CONCLUDES NO NEED TO PUT BONNEVILLE CUTTHROAT TROUT ON ENDANGERED LIST

Diane Katzenberger 303-236-7917 ext. 408
or
Yvette Converse 801-524-5001 ext. 135
<http://www.r6.fws.gov/pressrel/01-46.htm>

October 9, 2001: The U.S. Fish and Wildlife Service announced today that the Bonneville cutthroat trout, a fish found primarily in Utah and parts of Wyoming, Idaho, and Nevada in the Bonneville Basin, does not warrant listing as a threatened or endangered species under the Endangered Species Act.

In February 1998, the Biodiversity Legal Foundation petitioned the Service to list the Bonneville cutthroat trout as threatened throughout its range and designate its occupied habitat as critical habitat under the Act. A species is designated as threatened when it is likely to become endangered throughout all or a significant portion of its range.

Although the Service found the petition contained substantial information that warranted further examination of the status of the species, a comprehensive review revealed that there are 291 populations of Bonneville cutthroat trout that currently inhabit 852 miles of stream habitat and 70,059 acres of lake habitat. Biologists also believe they may find Bonneville cutthroat trout populations in streams, which have not been recently surveyed or explored. Furthermore, genetic research continues to determine that many populations deemed in the past to be hybrid fish are in fact genetically

pure Bonneville cutthroat trout. Overall, the Service found that viable, self-sustaining Bonneville cutthroat trout populations remain widely distributed throughout the historic range of the fish and are being restored or protected where feasible.

Biologists believe Bonneville cutthroat trout historically occupied most of the stream, river, and lake systems and their principal tributaries in the Bonneville Basin. Over the past 150 years, the species has experienced a decline due to fishing and timber harvest, dewatering, habitat destruction, and introduction of nonnative fish that competed with the species and gave rise to hybrid populations. Some biologists speculated the Bonneville cutthroat trout was extinct in its pure form by the mid-1900s.

"On-the-ground restoration and enhancement activities conducted by our Federal, State, and Tribal partners have become the cornerstone for Bonneville cutthroat trout conservation," said Ralph Morgenweck, the Service's regional director for the Mountain-Prairie Region. "Because state wildlife and land management agencies have made these conservation actions fundamental components of agency planning, we expect continued improvements in the status and habitat of this native fish well into the future."

Bonneville cutthroat trout populations are found in all five geographic regions of the Bonneville Basin including: Bear Lake and tributaries, the Bear River drainage (north slope Uinta Mountains, Smith's Fork, Thomas Fork, Cub, Logan, Little Bear and others), northern Bonneville drainages (Ogden, Weber, Jordan, Provo, and Spanish Fork Rivers),

western Bonneville drainages (Deep Creek mountains, Wheeler Peak, Snake Valley) and southern Bonneville drainages (Sevier, Beaver and Virgin rivers).

The Bonneville cutthroat trout is one of 14 subspecies of cutthroat trout *Oncorhynchus clarki* native to interior regions of western North America. Cutthroat trout owe their common name to the distinctive red or orange slash that occurs just below both sides of the lower jaw.

Bonneville cutthroat trout generally have large, evenly distributed spots, more evenly distributed on the sides of the body than the Yellowstone subspecies. However, there is a degree of intra-basin variation in physical characteristics. Bonneville cutthroat trout are generally considered dull in color compared to other cutthroat subspecies but still may exhibit bright red, orange and yellow colors.

More information on the species can be found at <http://www.r6.fws.gov/endspp/fish/bct/>.

Kentucky to Get New Lake: Cedar Creek Lake

The Kentucky Department of Fish and Wildlife Resources partnered with the Kentucky Transportation Cabinet, and Lincoln County Government to construct a new 784-acre recreational lake. A highway-fill dam associated with the realignment of US 150 between Stanford and Crab Orchard, Kentucky will begin impoundment in 2002. The dam has been essentially completed; however, the roadway (US 150) across the top of the dam will require additional time.

See Cedar Creek page 17...

FMS STRATEGIC PLAN

FMS Member Input on Strategic Planning Sought

The Parent Society adopted a revised Strategic Plan to guide the AFS from 1999 through 2004. Although the Plan was developed for the AFS as a whole, individual AFS work units such as ours have been encouraged to adapt the Plan to meet our needs, particularly emphasizing where possible those subgoals and strategies most pertinent to our Section's mission.

Please check the four areas where you think the Section should devote most of its efforts. Return form with selections indicated to Tim Hess, Federal Aid, 4401 N. Fairfax Dr., Suite 140, Arlington, VA 22203 or submit your selected action items to Tim via tim_hess@fws.gov.

Major Goal for Member Services: AFS will provide excellent, cost efficient services, operations and support for its members.

- ☐ 1. AFS will be a leading provider of services for professional development and continuing education on topics related to the conservation of fishery resources and aquatic ecosystems. (focus on continuing education, AFS Certification, services and products are affordable, assess membership needs, increase student membership and involvement)
- ☐ 2. AFS will be a primary source of scientific and technical information on fisheries and aquatic resource topics. (host technical meetings, improve AFS journals and *Fisheries*, recruit more authors/reviewers/editors, support and use AFS technical committees)
- ☐ 3. AFS will provide electronic information services emphasizing intrasociety communications and information exchange. (use internet and enhance members accessibility to it, improve employer use of job announcement services, improve membership database, enhance Section web site use)
- ☐ 4. AFS will increase the diversity of its membership (develop and implement a plan that targets and recruits individuals from under-represented groups, sponsor outreach programs targeted to under-represented groups, encourage minority outreach programs with specific colleges and universities, consider social and professional diversity for leadership position nominations, showcase efforts on website)
- ☐ 5. AFS members, leaders, staff, and units will participate actively in implementing the Strategic Plan. (disseminate the Strategic Plan and annual work plans, support the development of annual work plans for the Section, revise the Society's Strategic Plan to incorporate thoughts of the Section, provide quality and convenient leadership training that includes roles in achieving Strategic Plan goals, monitor progress toward accomplishment of Strategic Plan goals)

Major Goal for Information Transfer and Outreach: AFS and its members will be recognized by decision makers and natural resource professionals as an important source of science-based information about fisheries and aquatic ecosystems and their conservation, management, and sustainable development.

- ☐ 1. Enable researchers, educators, managers, and administrators involved in the fields of fishery and aquatic science and resource management to be viewed as aquatic resource professionals by employers and the public. (educate employers about the need for professional standards, communicate regularly to members on how they can improve their stature as fishery professionals, maintain a leadership role in enhancing salary, safety, and working conditions for fishery professionals, promote the use of AFS Certification within organizations, use the AFS Action Plan for Visibility to enhance stature of the profession, develop partnerships with other natural resource societies, communicate to employers the benefits employees gain through leadership and planning with AFS, encourage fishery educators to promote AFS benefits to students)

FMS STRATEGIC PLAN

- ☐ 2. Improve visibility and image of AFS as a scientific organization and information source. (encourage effective and frequent media interactions, distribute AFS press releases and fact sheets, develop and disseminate research-based info to public policy makers, develop and maintain media resources)
- ☐ 3. Improve communication and collaboration with organizations that share aquatic interests. (collaborate with other relevant scientific organizations, appoint official AFS liaison to other organizations, add descriptions of collaborative efforts to Section web site)
- ☐ 4. Establish and maintain a computerized information network, which provides access to scientifically based fisheries and aquatic resource management information. (encourage Section to enhance web site, develop and implement an outreach plan for web site, facilitate members joining non-AFS aquatic ecosystem related electronic mailing lists)
- ☐ 5. AFS will be involved actively in the development of public policy affecting fish, fisheries, and aquatic ecosystems. (encourage Section to use established guidelines for advocacy, regularly review policy and position statements and revise based on changes in scientific info, develop and implement a system for securing independent reviews, improve the use of the Fisheries Information Network, assist with task force to identify how AFS can improve public policy presence in Canada)

Major Goal for **Aquatic Stewardship**: AFS and its members will be leaders in promoting the sustainability and sound stewardship of fisheries resources and aquatic ecosystems.

- ☐ 1. AFS will promote the conservation and sustainability of aquatic ecosystems above and beyond a traditional fisheries focus. Efforts will highlight the importance of biodiversity, watershed management, and habitat conservation. (partner with other organizations to tackle complex issues, actively advocate providing adequate resources for quality management and research, partner with coalitions to expand funding, increase the number of symposia focusing on holistic management and aquatic biodiversity, review and expand the educational materials the Society produces)
- ☐ 2. AFS will increase efforts to educate the public about sustainability and sound stewardship of fisheries and aquatic ecosystems. (encourage members to become more active with civic groups and schools, encourage Section to develop more educational materials regarding sound stewardship, partner with other organizations in facilitating public leadership and youth stewardship of aquatic resources, write essays or articles for popular fisheries magazines about conservation and aquatic stewardship)
- ☐ 3. AFS will increase efforts to advocate the sustainability and sound stewardship of fisheries resources and aquatic ecosystems from local to global scales. (increase dissemination of position and policy statements, sponsor workshops to train members in effective policy making and communication, encourage members to be more active in provide scientific-based information to leaders and policy makers, develop more timely position and policy statements, contribute to AFS task force investigating ways to improve Mexican involvement in AFS)

ARTICLES

New exotic fish species discovered in Duluth/Superior harbor on Lake Superior

Contact
Dennis Pratt (715) 392-7990

<http://www.dnr.state.wi.us/org/caer/ce/news/on/ON011016.htm#art1>

SUPERIOR, Wis. -- State fisheries biologists last month captured a new species of fish in Wisconsin in Duluth/Superior harbor that they suspect was a stowaway on a vessel from the St. Clair River, the connecting waterway between lakes Huron and Erie.

The discovery of the tubenose goby (*Proterorhinus marmoratus*) represents its first occurrence outside of the Western Erie/St. Clair River area, according to Dennis Pratt, Department of Natural Resources fisheries biologist. It also adds to the growing list of non-native species inadvertently introduced by ships and vessels transporting cargo both globally and within the Great Lakes.

"Duluth/Superior harbor is one of the largest shipping ports on the Great Lakes, and more than one-quarter of the fish species now found in the harbor are not native to Wisconsin," Pratt says. "Many of them were likely carried here in the ballast water of ships, and that may be the case for the tubenose goby."

Pratt and other fisheries biologists don't know what potential impacts the tubenose goby will have on the ecosystem, but they suspect it won't be as severe as its Eurasian cousin, the round goby (*Neogobius melanostomus*). "It's too early to speculate the potential impacts of this new fish in

Wisconsin," Pratt says, noting that eventual impacts can vary substantially from area to area.

DNR fisheries biologists captured the single tubenose goby as they were completing standard survey work in the Duluth/Superior harbor on the lower St. Louis River located on Western Lake Superior, Pratt says. The fish was about 1 3/4 inches long and less than 1 year old. Biologists don't know whether the single specimen is the result of natural reproduction within the harbor or was an individual transported as a very young fish this summer directly from the lower Great Lakes, Pratt says.

The tubenose goby is a Eurasian fish species native to the Black and Caspian seas. It was first discovered in 1990 in Michigan waters of the St. Clair River, which connects Lakes Huron and Erie, and has since been found in northwestern Lake Erie, Pratt says.

Michigan biologists have found that tubenose goby populations grew after their initial discovery, but today are still considered a rare species in the St. Clair River area. That pattern greatly contrasts that of the exotic round goby, which was discovered in Lake St. Clair during the same time period and has since expanded its range to all five of the Great Lakes, developing abundant populations at some locations. Biologists anticipate that the round goby may have serious impacts on native fish communities.

Gabelhouse (continued)...

and that fish like crappie and bluegill are less susceptible to accumulation of contaminants. But, we should expand testing to additional fish species and variable sizes of fish so we can be sure whether or not fish in the middle of

Cedar Creek (continued)...

The Department provided approximately \$4M of Sport Fish Restoration funds for the land acquisition and the ramps and used the state highway funds used for the dam as the 25% match; therefore this was a 100% federally funded project.

Cedar Creek Lake was built primarily for recreational fishing! An additional 300-ft. buffer zone around the lake was purchased to maintain a setback of private development and maintain natural aesthetics. The lake will be equipped with three boat ramps and ultimately one public marina will be developed. Fish habitat will be enhanced by leaving standing timber in safe areas. Also the Fish America Foundation has provided a grant for local anglers, the Cedar Creek Sportsmen's Club, to add additional fish habitat prior to impoundment; these activities will occur during the summer 2001. The lake will have a maximum depth of 60 feet and 21 miles of shoreline. Feature fish species will be largemouth bass, bluegill, redear sunfish, black crappie, and channel catfish.

the food web, like panfish species, as well as walleye, are safe to eat (in quantities that I prefer), even in water bodies with advisories.

Currently, our information probably scares anglers who stand little chance of harm from eating fish. But, we may not be reaching those who depend upon fish for a major portion of their diet because of their culture.

We should all do more to compare the health benefits of eating fish to the risks. We should also contrast the risks of a fish diet (even one consisting of fish from a water body with an advisory) to a diet without fish.

ARTICLES

Federal Caucus Releases Comprehensive Columbia-Snake River Salmon Plan

Contact:

Brian Gorman (206) 526-6613

A team of nine federal agencies today released a long-term strategy to recover threatened and endangered fish in the Columbia Basin. It calls for significant habitat improvements in the Columbia estuary and its tributaries and changes in the hatchery system, while leaving the four lower Snake River dams in place.

"Breaching those dams remains an option if the recovery efforts don't meet strict performance standards included in the strategy," said Donna Darm, acting regional administrator of the National Marine Fisheries Service (NMFS), an agency of the National Oceanic and Atmospheric Administration (NOAA). "This approach challenges hydropower system operators, hatchery and fishery managers, users of habitat and virtually everyone who influences the life cycle of the fish to meet rigorous survival goals over a defined period."

The agencies, together known as the Federal Caucus, are charged with protecting salmon and other fish in the Columbia River Basin listed as threatened or endangered under the Endangered Species Act. Their plan targets a dozen badly depleted populations of salmon and steelhead and two other Columbia Basin fish -- bull trout and Kootenai River white sturgeon.

Part of the strategy from the Federal Caucus comes from two biological opinions: one from the

National Marine Fisheries Service and the other from the U.S. Fish and Wildlife Service. The opinions govern how the basin's massive federal hydropower system can best be managed to minimize harm to salmon and steelhead as they migrate to the sea and back, while also protecting bull trout and white sturgeon, which are resident species.

The new NOAA Fisheries biological opinion differs in two important respects from its 1995 counterpart and subsequent updates. First, it sets goals to improve salmon survival in locations away from the dams to increase the number of fish moving past dams on the main stem of the river. And second, it establishes performance standards and schedules by which the federal fisheries agencies will be able to evaluate objectively whether the measures are working.

The biological opinion has built-in performance reviews at three, five and eight years to take advantage of what's learned and to require more aggressive actions in all categories if goals are not being reached.

Although breaching remains an option, the agencies have examined the scientific evidence and concluded recovery can be achieved in the current hydro system by relying heavily on habitat improvements in the estuary and tributaries and on a radical overhaul of the hatchery system. At the heart of the recovery strategy is the Caucus's All-H Paper, known formally as the Basin-Wide Salmon Recovery Strategy. This document integrates all the requirements of the biological opinions and adds far-reaching measures outside the hydropower arena to limit salmon catches, restore salmon habitat, and

change how hatcheries are managed. It relies heavily on the participation of tribes, as well as state and local governments. The entire package was released in draft form last July for review by Northwest Indian tribes and by the states of Washington, Idaho Oregon and Montana. The documents released today reflect their comments.

The NOAA Fisheries biological opinion, which replaces one in force since 1995, sets minimum water flows in the Snake and Columbia rivers during crucial parts of the year, calls for more spill of water over eight hydroelectric dams and upgrades fish-passage facilities at those dams for both downstream juveniles and returning adults.

The strategy requires revenue from dam operations be used to pay for habitat, harvest and hatchery actions. However, federal funds from other sources are also used to support the program. The program is expected to cost an average of \$352 million a year.

The FWS biological opinion calls for modified flood control at Libby and Hungry Horse dams to benefit Kootenai River white sturgeon, bull trout and salmon. It specifies operations at Libby Dam to encourage sturgeon spawning and provide rearing habitat. In addition, the biological opinion establishes minimum upriver flows for bull trout and calls for studies to determine the extent of bull trout use of the lower Columbia and Snake River dams in the federal hydropower system.

For further information please see the Federal Caucus Web site at www.salmonrecovery.gov.

BUSINESS MEETING

Fisheries Management Section, American Fisheries Society Annual Business Meeting Minutes August 2001, Phoenix, Arizona

Call to Order

- President Tim Hess called the meeting to order at 5:00pm
- Motion by Jeff Boxrucker, second by Steve Moore to approve the minutes and financial statement of the 2000 meeting, motion carried.
- The 2001 financial statement was presented for review.
- A representative of Maryland spoke briefly about AFS 2002 to be held in Baltimore, MD. on Aug 18-22, 2002.

Old Business

- FMS Awards
 - *Award of Merit* – Brian Finlayson (CA), AFS Chemical Subcommittee Task Force Chair, received the award for his task force leadership and work with rotenone use in fisheries management, including a revision of the rotenone brochure with up-to-date information. Members are encouraged to visit the Rotenone Stewardship Information Site located on the AFS home page. AFS has published “Rotenone Use in Fisheries Management: Administrative and Technical Guidelines Manual: which resulted from this task force.
 - *Conservation Achievement Award* – awarded to the Bass Anglers Sportsman Society (B.A.S.S.) for their long history of protecting recreational fisheries resources, and their work with anglers and the sport fishing industry. Two current B.A.S.S. activities have special significance to the FMS: the national aquatic vegetation management strategy and their agenda for management and research on the LMB virus. Cindy Martin accepted on behalf of B.A.S.S.
 - *Hall of Excellence* – established in 1992, located at the Ak-Sar-Ben Aquarium near Omaha, NE. Lee Redmond (retired Missouri Department of Conservation) and Bob Wiley (WY Game and Fish) are this years award winner/inductees. Lee was recognized for his long history and leadership in fisheries management in Missouri. Lee was also very active in AFS, holding nearly every office including Society President. Bob Wiley (WY) presented the award to Norm Stucky who accepted on Lee’s behalf. Robert (Bob) W. Wiley currently serves as the Fisheries Management Coordinator for much of Wyoming, focusing his efforts not only on fish, but also on fish habitat awareness, protection and enhancement. Bob has also been very active in AFS throughout his career.
- FAST (Fisheries Analyses and Simulation Tools)
 - This modeling software, developed with a FMS contract with Auburn University, is designed to aid fisheries managers with evaluation of proposed changes in management strategies. Software is now available through the Computer Users Section. Jeff Slipke and Mike Maceina lead this monumental effort and have developed a very useful tool for fisheries managers.
- Burbot Symposium
 - Craig Paukert, SDSU, updated the group on how to obtain copies. Copies of the proceeding , sponsored by the FMS, are available through AFS or Vaughn Paragamian (ID).
- Electrofishing Injury Project
 - This is a FMS administered project with funnels Federal Aid Administrative funds to researchers at Auburn and Mississippi State Universities. Jeff Boxrucker (OK) updated the group on the status of the project. The 5-year study is winding down – final report due May 2002.
- 2001 AFS Meeting
 - Fish Mgmt section sponsored symposiums at this year’s AFS meeting included:
 - Special Fishing Regulations
 - Partnerships in Tribal Fisheries
- Web Page
 - The FMS web page is located on the southern division AFS website – Fred Janssen (Texas Parks and Wildlife) is the web manager. FMS members should submit ideas/information for the web site to the Section Officers.

BUSINESS MEETING

- Legislation
 - Legislation that is being tracked or has included FMS involvement includes:
 - Farm Bill
 - Magnuson Act
 - CARA/WCRP
 - ISTEPA – motor boat fuels into sport fish restoration, Cindy Williams updated on training opportunity being provided by the US Forest Service.
- USFWS Fisheries Strategic Plan Review
 - Cathy Short (USFWS) reviewed the FWS plan for reviewing/revising their Fisheries Strategic Plan at the Fisheries Administrators Section (FAS) meeting held earlier.
- Continuing Education
 - The main office questioned each section on whether the Parent Society be more involved in organizing continuing education courses on a national scale. Tim surveyed the FMS officers and prepared response on behalf of FMS. It was the feeling of most that the Parent Society involvement would be welcomed, but that it should not interfere/detract from the very successful continuing education efforts that are taking place at the Chapter and Division levels.
- Salary Survey
 - There will be no AFS salary survey this year. Past surveys have had a difficult time in making accurate comparisons across differences in State job classifications/descriptions. The current Society Excom has stated its desire to fund another salary survey within the next year or two; some funds have already been budgeted. Wes Porak (FL) will continue to be the Section's representative when the Society moves on this issue.
- Request for Funding
 - DC Booth Historic National Fish Hatchery memorial – contribution requested.
 - 12th International Trout Stream Habitat Improvement Workshop (Ireland) – FMS has supported these workshops in the past (\$1000); 1st workshop to be held outside of North America.
 - New Animal Drug Applications (NADA) (see letter in Fish Administration packet) – funding request for coordinator position/ongoing (\$1500).
 - Student Travel to AFS – Equal Opportunities Section (Gwen White – See FAS packet) (\$100-\$500).
 - International Endowment Fund and Steering Committee (see FAS packet) – suggested \$1,000 - \$2,000).
 - White Bass Symposium module – Jeff Boxrucker spoke on behalf of Chris Guy – results of a symposium at last years meeting – hope to have it published in February or April issue of NAJFM. Would also like to bind WHB module separately and distribute to FMS members who do not subscribe to the NAJFM – requested \$2000).
 - Filipek (AR) made a motion to provide \$1000 for the White Bass Symposium module, second by Bob Wiley (WY). Discussion none. Motion carried.
 - Boxrucker (OK) made a motion to donate \$1000 for the International Stream Restoration workshop, second by Wiley. Discussion: Filipek suggested that FMS should share if there is any profit in the meeting (as has occurred in the past) – this will be coordinated with Don Duff, especially if FMS is to help with funding of future workshops. Motion carried.
 - A motion was made by Dirk Miller (WY) to donate \$500 for Student Travel. Doug Stang (NY) seconded. Motion carried.
 - Boxrucker moved to donate \$250 to the International Endowment Travel Fund. Miller seconded. Motion carried.
- Membership and Membership Dues
 - The Bethesda Office recently asked each section if they intended to consider a dues increase. Tim recommended to the Governing Board that FMS dues remain at \$5. He suggested that future membership due increases should be based upon a specific need for more funds, and that any membership due increases should be moderate to avoid losing members.

BUSINESS MEETING

- Other Old Business
 - Need to ask Betsy Fritz if FMS is due any proceeds from the sale of Inland Fisheries Management 2nd Edition.

New Business

- AFS Strategic Plan
 - Copy will be placed on the FMS web site – in the meantime FMS members can email Tim Hess with ideas for FMS commitment/involvement in achieving the goals and objectives of the plan.
- 2002 Symposium in Baltimore
 - Ideas for FMS sponsored symposium at the AFS 2002 meeting, need to be developed quickly. Ideally, ideas should be discussed at Division meetings during the previous year and be brought up at the Annual Meeting. The Introduced Fish Section and the FMS will be co-sponsoring a session on managing invasive species. Anyone wishing to help with this symposium in 2002 (Baltimore) should contact Tim.
- Other New Business
 - Vince Mudrak discussed efforts related to the use and effects of cultured fish – the 3rd in a series of meetings/workshops to update “Use and Effects of Cultured Fishes in Fish Management: will be undertaken. AFS sections will be asked to participate. Steve Filipek recommended that Tim send a letter offering FMS support for this effort.
 - Norm Stucky raised concern about mercury and related fish consumption advisories. Norm is concerned about lack of AFS interest/involvement in this issue. The continued addition of mercury consumption advisories on other sport fish species will have a negative impact on angler participation. Norm suggested that FMS send a letter to EPA (trigger level for consumption advisories has also been lowered recently) urging them to address the source of contamination (i.e. coal fired plants). Norm reviewed a draft resolution he prepared. Jeff Boxrucker suggested that in the interest of time, a letter would provide quicker action than a resolution. Tim will work with AFS and FMS to prepare the letter regarding this important issue.

Meeting was adjourned at 6:55 pm.

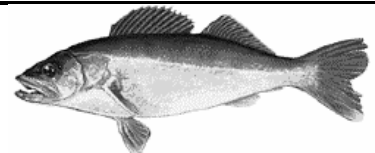
Burbot (continued)...

"If after the review we find the species is in need of protection, we would then propose it for listing. At that point, the public would have another opportunity to comment and submit scientific data about the species. Only after reviewing those comments would we make a final decision."

The Service is asking the public to provide information to help determine: 1) whether burbot in this portion of the range constitute a distinct population segment; 2) the current status and threats to the species; and 3) conservation measures that are in place to protect and recover the species in this portion of its range.

At one time, the lower Kootenai River supported a thriving winter burbot fishery, but declines began around 1960. The population declined further after the installation of Libby Dam in Montana in 1972. Despite numerous fishing regulations, including the closure of all burbot fishing on the river in the early 1990's, the fish's numbers have continued to decline almost to nothing. Primary threats to burbot include significant water-flow and temperature changes in the lower Kootenai River, which interfere with the fish's ability to get to spawning grounds, and reductions in the river's nutrient level that threaten burbot fry's ability to survive the first stages of life.

The petitioners presented evidence that lower Kootenai River burbot are genetically isolated from burbot in the rest of the river because of the impassable nature of Kootenai Falls in Montana. The evidence also shows that the lower Kootenai River population is behaviorally different from a small population that lives and breeds solely in the north arm of Kootenay Lake as well as from a population above Kootenai Falls. As part of its formal review, the Service is evaluating whether to classify the lower Kootenai River burbot as a distinct population segment because of its genetic uniqueness.



FMS FINANCIAL REPORT

**American Fisheries Society (AFS)
FISHERIES MANAGEMENT SECTION
Financial Report**

Reporting Period: July 31, 2000 – August 1, 2001
Secretary/Treasurer: Clifton C. Stone

Balance forward as of July 31, 2000 **\$20,745.53**

Income:

Section dues (3 rd & 4 th quarters)	\$2,385.00
Interest	\$872.30
Electrofishing injury study (Federal Aid)	\$32,725.89
Textbook sales	
Burbot symposium	\$900.00

Total Income **\$36,883.19**

Expenditures:

Newsletter (printing & postage)	\$2,067.74
Travel and Meetings:	
Governing Board & 2000 Annual	\$501.80
Annual meeting refreshments (2000)	\$307.07
North Central Division refreshments (2000)	\$192.10
Southern Division refreshments (2000)	\$144.60

Officer plaques (2000)	\$335.80
Population dynamics model (Auburn Univ.)	\$11,500.00
Electrofishing injury study	
Auburn University	\$20,926.72
MSU/MS Coop. Fish & Wild. Res. Unit.	\$11,799.17

IRS Form 990 preparation	\$450.00
Check Usage Fee (Merrill Lynch)	\$2.40
EMA Annual Fee (Merrill Lynch)	\$80.00

Total Expenditures **\$48,307.40**

Balance as of August 1, 2001 **\$9,321.32**

FMS INFORMATION

Fisheries Management Section

Fisheries Management Section Newsletter is published biannually. It is dedicated to maintaining the professional standards of the American Fisheries Management Section, and Fisheries management throughout North America.

Executive Committee:

- Tim Hess, *President*
- Jeff Boxrucker, *Immediate Past President*
- Cliff Stone, *Secretary / Treasurer*
- Steve Rideout, *President-Elect*
- Randy Shultz, *North Central Division Representative*
- Victor DiCenzo, *Southern Division Representative*
- Tim Brush, *Northeast Division Representative*
- Ron Remmick, *Western Division Representative*

Editorial Staff:

- ⚙ Southern Illinois University Unit of the Illinois Chapter of the American Fisheries Society, *Editors*
- ⚙ Ryan A. Oster, *Managing Editor*
- ⚙ Steven Kerr, *Ontario Editor*
- ⚙ Wendell Willey, *Western Regional Editor*
- ⚙ Michael Vanderford, *North Central Regional Editor*
- ⚙ Bill Hyatt, *Northeast Regional Editor*
- ⚙ Ron Moore, *Southern Regional Editor*

Editor's Note: At this time, I would like to take this opportunity and say that I enjoyed serving as the FMS's managing editor for the Spring 2001 and Fall 2001 editions. Additionally, I would like to thank all those individuals who have contributed articles and helped in the publication of the newsletter. Your contribution and effort have helped make this newsletter what it is today. I would especially like to thank Tim Hess for his patience in working with me as editor. Lastly, I would like to welcome Devon Keeney, who will be the new managing editor of the FMS newsletter.

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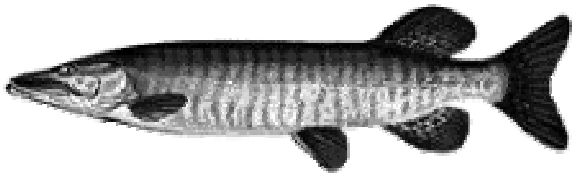
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Fisheries Management Section dues are \$5 per year. Notification of address change should be submitted to the American Fisheries Society office in Bethesda, Maryland.



**Fisheries Management
Section
American Fisheries Society**



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