

Standardized Fish Sampling in Washington Lakes

WDFW – Warmwater Fisheries Assessment



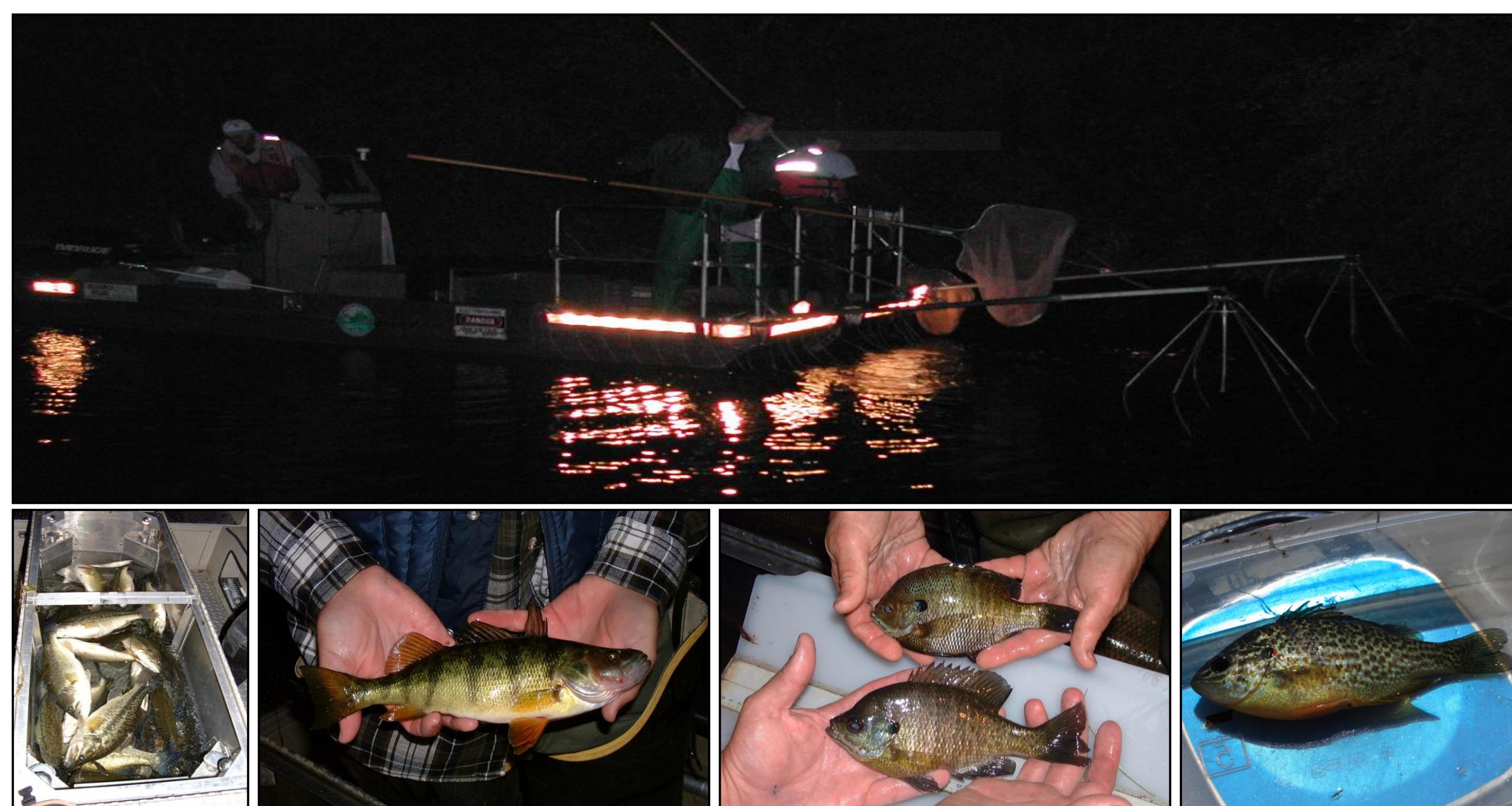
Washington
Department of
**FISH and
WILDLIFE**

Lake Survey Methodology:

During the spring and fall seasons, research teams conduct standardized surveys (<http://wdfw.wa.gov/publications/0045/>) of lakes across the state. The surveys are designed to collect information on the lake's fish community and habitat. Biological information on the fish species residing in the lake is collected using boat electrofishing, gill netting and fyke netting. The lake surveys are conducted by a 3 person team and typically take 3-5 days. During a typical survey week, a team will collect information on all fish species and lake habitat. Biological information including fish species, length, and weight are recorded, and scales are collected to evaluate the age and growth of the fish. The biological information is used to assess information about the fish community in the lake including: species composition, size distribution, fish condition, and growth rates.

Boat Electrofishing:

Boat electrofishing is the use of electricity to stun and capture fish. The 16' boats have an electrical generator onboard. Anode droppers hang from the front of two booms extended out in front of the boat. Cathode droppers are attached to the bow. Once the boat and generator are running an electrical field is created in front of the boat. A control panel allows the operator to adjust the strength of the electrical field, which allows biologists to efficiently capture fish, while reducing the chance of injury to fish. During a typical electrofishing survey, the boat is maneuvered through the shallows, following the shoreline of the lake. Electrofishing is usually conducted for 600 seconds of "pedal down" shocking within each randomly chosen section. The surveys are conducted after sunset, as research has shown that nighttime electrofishing is more effective. During electrofishing, the typical fish reaction will be to turn towards the anode exhibiting galvanotaxis, (forced swimming with orientation), which directs the fish towards the front of the boat in a stunned state, where they are easily netted. During a typical electrofishing survey, stunned fish are netted and placed in a live well on the boat. Biological information is then collected following the completion of each section. Fish are then released back into the lake. Electrofishing is the most effective gear type for collecting bass and many other warmwater fish species.



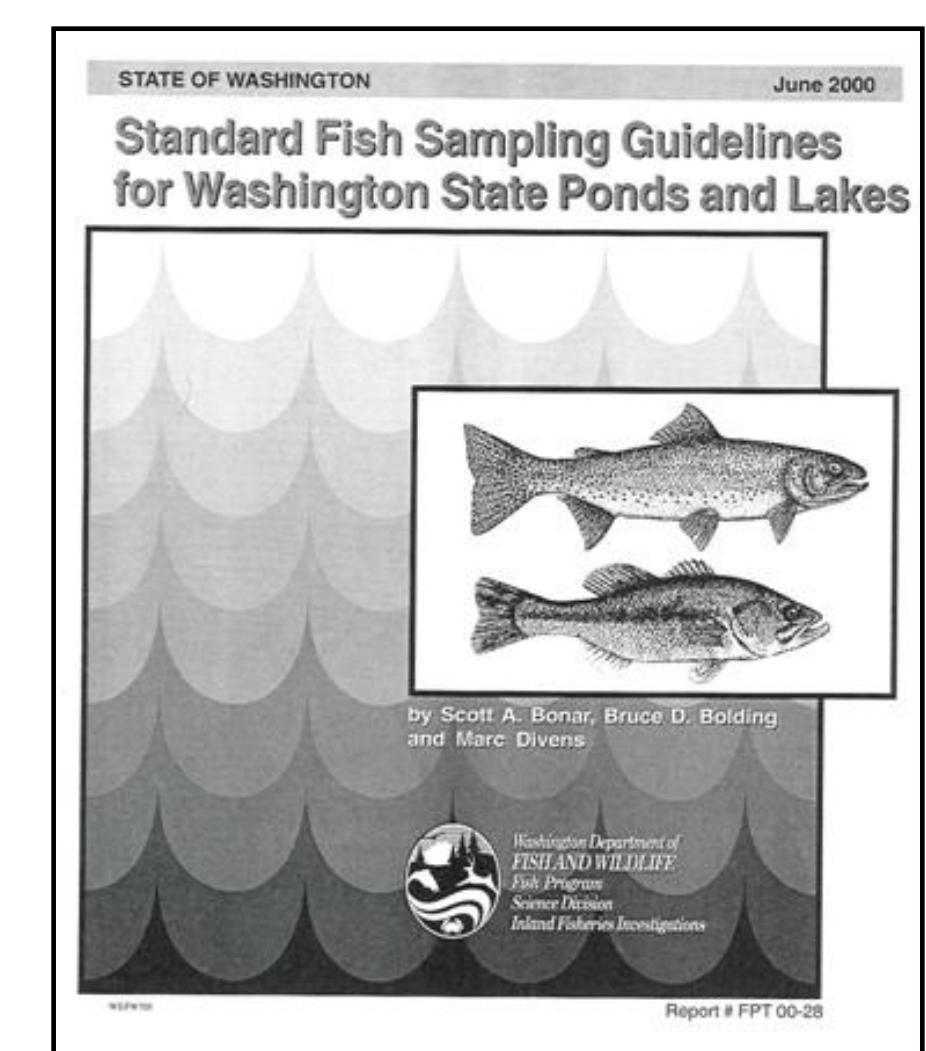
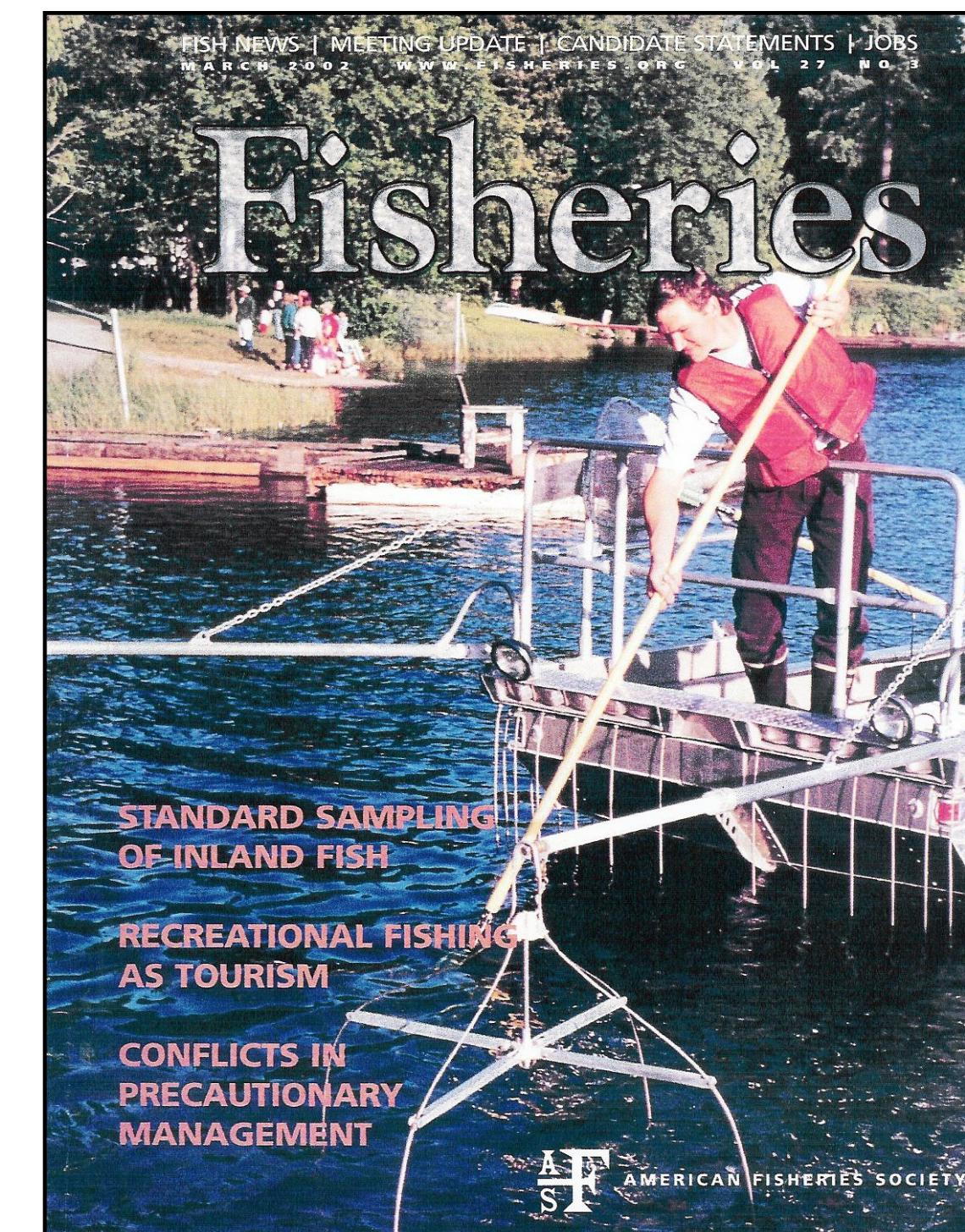
Gill Netting:

Teams use monofilament experimental gill nets. The nets are 45.7 m long by 2.4 m deep and are constructed of four different sinking panels with variable sizes of mesh. These nets are used to sample various sizes of fish and to reduce size selectivity of the sampling gear used in the surveys. Gill nets are set perpendicular to the shore. The nets hang vertically in the water. Foam core line floats the top of the gill net while lead line weights the net to the lake bottom, much like a fence line under water. Fish that swim into the net become entangled in the netting. Gill nets are set overnight and retrieved in the morning. Captured fish are weighed and measured, and scales are collected for age and growth calculations in the lab. While some fish die in the nets, others are able to be released unharmed. Gill nets have been found to be highly effective in collecting walleye, catfish and yellow perch.



Fyke Netting:

This net type is constructed of a series of hoops covered in net webbing. There are two internal funnels that prevent the fish from swimming out of the net once they are caught. The Warmwater Teams use fyke nets constructed of a main trap, a lead net (30.5 m long and 1.2 m deep) which is tied off to the shore, and two wings (7.6 m long and 1.2 m deep) which are set at 45 degree angles to the main trap. The lead and wing nets guide fish into the trap. Fyke nets are set overnight and retrieved in the morning. Fish are weighed and measured, and scales are collected to determine age. Fish caught in the fyke nets are typically released unharmed. Fyke nets have been found to be effective in collecting sunfish and crappie.



Warmwater Fisheries Assessment Reports

These reports and others are available online at:
<http://wdfw.wa.gov/publications/>



For more information on freshwater fishing in Washington, visit our website:
<http://wdfw.wa.gov/fishing/freshwater.html>