

## How we improve your fishing

# Conduct RESEARCH

The DNR's 23 fisheries research scientists spend their days figuring out how to make fisheries management more effective and efficient. They're like guides, assisting fisheries managers through the obstacles of scientific unknowns.

Researchers conduct experiments that answer specific questions posed by managers and anglers, such as:

1. How would lowering bag limits affect fish populations?
2. What customized regulations would work best to increase walleye size?
3. Why don't Minnesota lakes have more big bluegills?

The work of fisheries researchers is closely related to that done by corporate research scientists. Companies rely on research to produce the most effective products for the lowest possible cost. Graphite rods, trolling motors, GPS units, and four-stroke engines all came from the research and development departments of fishing and boating equipment companies. Research is just as essential to the business of fisheries management.

Some research is long-term, such as studies now examining how eight to 10 years of experimental angling regulations affect fish populations and fishing. Other research, such as creel surveys and sturgeon telemetry projects, try to determine in two years or less something specific about a specific species.

Among the important DNR fisheries research findings:



The DNR asks anglers to report tagged fish so we can learn where the fish travel.

- **Fish genetics:** Fish come in different genetic strains, which are subtle variations of the same species. Some strains do better than others in Minnesota waters, so researchers have studied which are best to stock. A study in the Arrowhead Region found that lake trout native to waters where they are stocked survive better than strains from other waters.

- **Habitat improvement techniques:** Among the findings by researchers is that trout numbers per mile of stream rise dramatically if channels are narrowed, banks are stabilized, riffles are kept free of silt, and brush is allowed to grow along streambanks.

- **Walleyes:** Researchers have studied conditions in walleye rearing ponds and refined hatchery techniques to increase the rate of egg fertilization to produce more walleyes for less cost.

We publish the results of research studies in a series of investigational reports. Since 1938, when the first report on the sex ratio of fish caught by ice anglers was written, we have produced more than 460 investigational reports. Currently, we are in the process of providing access to the past 20 years of reports on our web site.

## Success Story

### Muskie Management

Thanks to research conducted over the past 25 years—and the help of conservation groups such as Muskies, Inc.—muskie anglers have twice as many waters to fish as they did two decades ago, and they have a far greater chance of catching a trophy-sized muskie.

In the late 1970s, researchers followed electronically tagged muskies to learn where they spawned in Leech Lake and how shoreline alterations affected spawning habitat. Other studies showed that muskies thrive in large lakes that contain relatively few northern pike, lots of forage fish such as tullibees, and suitable spawning habitat.

In the 1980s, researchers learned that the Leech Lake strain of muskie survived better and grew larger than other strains. Fisheries managers used this information to direct new stockings of the Leech Lake strain to waters where muskies had the best chance of thriving.

Over the past two decades, muskie research has helped us double the number of lakes containing muskies from 40 to 80, and to provide anglers—especially those fishing Twin Cities Metro Region muskie waters—with more opportunities to catch trophy muskies.

