The Need For Fish Stocking Reform In California

Preserving The Golden State's Freshwater Heritage

Pacific Rivers Council
October 2006

The Mission of the Department of Fish and Game is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public.
Mission Statement
California Department of Fish and Game

Managing trout resources for their use and enjoyment by the public is another principal mission of CDFG trout managers. However, one should recognize that the management of angling activity is merely an element of the broader sphere of fisheries and resource management, which includes protecting and maintaining native and wild species and their habitats.
Strategic Plan for Trout Management, A Plan for 2004 and Beyond
California Department of Fish and Game

A Brief History Of Fish Stocking In California

California is blessed with a stunning array of native fish and amphibian species that have adapted, over time, to their own unique watersheds. Historically, physical barriers prevented fish from moving upstream and inhabiting many mountain lakes and streams, thus protecting local populations of trout, frogs, and other aquatic species from unwanted intruders. However, by the late 1800s and early 1900s, frontiersmen and those working in the backcountry started to stock previously fish-free areas as they traveled through the mountains. Ironically, it was the California Sierra Club that began a systematic fish stocking program in the Sierra Nevada region.

Aerial Fish Stocking in the High Sierra
Photo © Phil Pister

The California Department of Fish and Game (DFG) officially took over the state's stocking operations in the late 1920s. As trucks, airplanes, and helicopters became available, high-volume roadside and aerial stocking replaced stocking by horseback. Efficiency improved, but so did the rate of errors; lakes and streams that were never intended to be planted became inadvertent recipients of hatchery-produced trout.

WHY STOCK FISH?

The motivation for stocking non-native trout year after year in lakes, rivers, streams, and reservoirs has always been to improve recreational fishing opportunities. Despite evidence in California that stocking is not necessary for sustained fishing opportunities, the planting of fish continues as it has for the past 50 years – with little or no regard to the impact on the ecosystem and native species. Each and every year DFG stocks numerous water bodies throughout the state; in 2006 alone, the agency stocked over **50 million** trout.

Yet studies in the Trinity Alps, Sequoia and Kings Canyon National Park, and elsewhere show that up to 80% of the lakes being stocked today could maintain themselves through natural reproduction, and that annual re-stocking is not so good for the fish – nor is it beneficial to California's native species.

FISH STOCKING IMPACTS ON NATIVE SPECIES

Very early on, fishermen took note of fish stocking impacts on native fish; later, scientists began to document these impacts, which include direct predation, competition for food and habitat, interbreeding, and the spread of disease and invasive organisms (e.g., whirling disease). Fish stocking has negatively impacted every Western native trout species and is the leading cause of fish declines in the Sierra Nevada.

California's Imperiled Golden Trout in an Icy Stream
Photo © Ralph Cutter

In the early 1990s researchers began to look at fish stocking impacts on native amphibians in the High Sierra and Klamath-Siskyou regions. Their findings were startling: not only were amphibians directly impacted by stocking (mostly because the fish ate them) but *the introduced fish were altering the ecosystem*. Research in other regions (including Oregon's Willamette Valley and Washington's Mt. Rainier National Park) has confirmed this important and alarming finding.

In California, nearly every native trout species is imperiled (most are listed under the Endangered Species Act) and all are impacted by historical or current stocking practices. The same holds true for many amphibian species, most notably the mountain yellow-legged frog and Cascades frog. In total, more than 35 fish and amphibian species are directly impacted by DFG's stocking program.

The impacts of stocking are not easily reversed; once fish have been introduced into a watershed it is difficult to fully eradicate them without causing further ecological harm because fish removal techniques usually have a high "collateral damage" cost (e.g., the use of rotenone and other chemical piscicides can wipe out amphibians and aquatic invertebrates). However, researchers in the Sierra and Klamath-Siskyou regions are making progress on this front. Our concern is in protecting existing aquatic strongholds from further degradation and securing protection of high-quality watersheds from the threat of future stocking.

Recommended Reform Of Fish Stocking Practices

Despite the overwhelming evidence that fish stocking is severely damaging California's natural environment and causing a decline in native species populations, DFG has done little to ameliorate the impacts. This failure not only puts DFG in direct conflict with its mission but also places its fish stocking program squarely in violation of the California Environmental Quality Act.

Based on these important findings, we believe that DFG needs to take the following steps:

1. Complete an environmental impact report, as required by the California Environmental Quality Act, on the state's fish stocking program. This report should describe the environmental effects of the program, detail possible policy options, and develop mitigation measures, as needed. This should be initiated as soon as possible.
2. Place a moratorium on stocking operations that negatively affect California's native species until the above report is completed and made available to the public for review and comment.
3. Incorporate into its fish and wildlife management programs a long-term strategy to protect California's high-quality watersheds and the native species they support.

By taking action today, DFG can ensure that California's natural heritage will remain the state's greatest asset.

For More Information On Fish Stocking Research & Reform Efforts:

http://www.pacrivers.org
http://www.biologicaldiversity.org
http://www.fs.fed.us/psw/topics/wildlife/invasives/
http://www.nps.gov/archive/yose/nature/wlf_fish.htm
http://www.fs.fed.us/psw/programs/snrc/aquatic/research.html