

Introduction to volume 100: the special fisheries issue

In 1953 a young biologist, fresh out of graduate school, started as a Seasonal Aid with the California Department of Fish and Game. His name was Phil Pister. He is a co-author of this Introduction to the Special Fisheries Issue of the 100th year of *California Fish and Game*. Phil traces his fisheries conservation roots back to joining one of Starker Leopold's first wildlife classes at the University of California, Berkeley. We thought that this Introduction could take a tour through Phil's life and career as a way to help explain modern inland fisheries conservation in California as we know it today.

As one would expect of a brand new and grateful-to-have-a-job employee, he jumped right into the established fisheries management programs designed to supply good angling for ever-increasing numbers of California anglers following World War II. Those programs were built around extensive trout plants from a series of well-established trout hatcheries. A few years later Phil was promoted to a fishery biologist position stationed in Bishop. The job in Bishop involved aquatic management and research on the "East Slope" of the Sierra Nevada, a very diverse and huge area comprising more than a thousand waters extending from the Sierra Nevada crest across the desert through Death Valley and beyond.

Although he took his new responsibility very seriously, often having to work alone, he found that something was missing from the status quo. Some of the programs the Department was implementing presented a philosophical and ecological conflict with principles he had learned as a graduate student while at the University of California, Berkeley. Phil being Phil, he began a period of critical analysis and thinking about the status quo.

It became clear to the young biologist the Department's fishery management programs for the eastern Sierra were well-intentioned, but were often lacking in conserving the biodiversity of California's native fish fauna. For example, the Department sought to provide diverse recreational angling opportunities through widespread planting of brook, brown, and rainbow trout. However, the planting of these highly sought after gamefish likely had adverse effects to some of California's native trout and amphibian species. Parallel to the implementation of the Department's management programs was a growing recognition within the professional and academic communities of California that native fishes and amphibians possessed unique biological attributes. The native fauna warranted directed conservation actions to protect the evolutionary legacy of the State's inland aquatic resources, including non-game species.

A pivotal moment occurred when, in July of 1964, Phil received a call from Dr. Robert Rush Miller, of the University of Michigan, requesting he accompany Miller and Professor Carl Hubbs, of Scripps Institution of Oceanography, to Fish Slough north of Bishop. Dr. Miller had completed his dissertation research on pupfishes in that area, including the Owens pupfish, which was otherwise thought to be extinct. Miller wanted to determine if there was still a remnant population of Owens pupfish in existence. Hubbs and Miller came to Bishop and found that, indeed, a population existed. After this significant find the ichthyologists returned to Ann Arbor and La Jolla, respectively, and the young Department biologist changed his priorities. He shifted his emphasis to a more ecologically focused philosophy that was, in many ways, in conflict with the prevailing approaches in fishery management at that time.

As Phil shifted his views and work on the East Slope, law, policy, and societal expectations also shifted. Landmark laws passed such as the U.S. Endangered Species Act of 1973 and the California Endangered Species Act of 1984. National environmental awareness was on the rise. And, ecology as a scientific discipline saw renewed interest, all of which set the stage for a significant paradigm shift relating to resource management and species conservation.

This shift also spawned numerous conservation based groups and associated efforts that would link agency and non-government interests. One such group that evolved during this era, with help from the young biologist in Bishop, was the Desert Fishes Council. This group consisted of about 300 academic, federal, and state biologists dedicated to the conservation of

North America's desert aquatic ecosystems. These developments were a major step forward in balancing fishery management with native species conservation. Phil remains involved in the Council even as we write this Introduction now in the spring of 2015.

The Department's approach to conservation will always need to be adaptive. No serious scientist can dispute the value of good adaptive management. A recent example of this comes from the Department's stocking of high elevation lakes. Trout management throughout California's high mountain lake ecosystems has been modified in recent decades to enhance conservation of native amphibians whose decline has been associated with introduced trout stocking. Currently, trout stocking in high mountain lakes is much more selective to achieve a balance between native species conservation and maintaining traditional backcountry angling opportunities the public has enjoyed for over a hundred years.

Modification of the State's trout stocking practices reflects one of the Department's most monumental accomplishments in adapting to a modern conservation program. For well over a hundred years, hatcheries have very successfully produced large numbers of trout to meet the demands of the angling public. The Department's current trout stocking strategy, while decades in the making, reflects the result of a collaborative process that embraces equal objectives of maintaining the integrity of native aquatic ecosystems and providing abundant fish for angling. The article in this issue by Dave Lentz and Mark Clifford is an in-depth review of this evolution. This new thinking is exemplified in strong programs devoted to reestablishment of salmon runs, restoration of the California golden trout (California's State Fish), and recovery of the rare Paiute cutthroat trout. Ongoing Department programs will usually include a fish hatchery component, but no longer without factoring in the relationship at the ecological level with native fish and other aquatic fauna.

As the Department moves into the 21st century there will undoubtedly be further challenges and adaptive changes that will need to be made. Our collective understanding of past mistakes and lessons learned will inevitably shape how the Department moves forward but more importantly how we leave the landscape for future generations. As the Department continues with this endeavor, the incoming cohort of fledgling biologists raised and educated under the guiding principles of ecology will play a critical role.

However, unlike the days that challenged that young biologist so many years ago, there is now ample support both internally in the Department and outside for such efforts. Much of that outside support will come from non-government agencies, advocacy groups, and the individual sportsmen and women who played a large part in founding the conservation movement. Our new and evolving direction pleases both them and us, as anthropocentrism gives way to biocentrism, and we ask what we can do for our fish, wildlife, and plant resources rather than what they can do for us. To co-opt a phrase the non-Phil half of this co-authorship learned while working at Trout Unlimited – "if you take care of the fish, the fishing will follow."

So, to wrap up, we hope that this Introduction gives some guidance to the new generation. Take encouragement that no matter how young or how new in your career as a fish conservationist, you can make a difference. Aldo Leopold reminded us that "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise." We now recognize the wisdom of Leopold's words, and we are coming closer to them every day.

If Phil had not questioned the status quo, the last population of Owens pupfish on the planet might not have been saved. If he had not questioned the status quo, the Golden Trout Wilderness might not have been created as a refugium for that native trout. Leopold summed it up, "In such matters we should not worry too much about anything except the direction in which we travel. The direction is clear..."