Training the next generation of Indian resource managers

IN FOR THE LONG HAUL

BY JAN McCOY

Eugene Maughan kept hearing the same thing from federal and state resource management agencies. Although the jobs are there, he was told, few Indians seem interested in careers within the agencies. The same appeared true for resource management jobs with individual tribes.

So Maughan, a professor of wildlife and fisheries science in the School of Renewable Natural Resources, began talking with tribal representatives and high school teachers to find out why. The interest in resource management careers exists, he learned, but for many, the first step is the hardest.

"The students have trouble getting through the bureaucracy of enrolling and surviving in college," Maughan says. "The University of Arizona is a cultural, as well as academic transition for many students."

With this in mind, Maughan, who also is the leader of the Arizona Cooperative Fish and Wildlife Research Unit located within SRNR, started the Fish and Wildlife Training Program in 1988. Funded by the U.S. Fish and Wildlife Service, the program is designed to help tribes prepare members of their communities for resource management positions.

The program helps Indian students move from high school to college, to graduate school, and into work either with agencies or tribes.

Paid participants are assigned to actual research being conducted by graduate student mentors. The students work with their mentors for 10 hours a week during the school week and full time during the summer.

"The students get to know people who can help them through the politics of the University system," Maughan says. "They get..."
exposure to techniques and philosophies of natural resource management, and this office acts as an advocate for them if they have problems."

Program participants are recruited by contacting tribes, high school teachers on reservations, and federal and state agencies. To be eligible for the program, students must have an interest in a career in natural resource management and meet UA admission standards.

Currently, the program has four undergraduate students enrolled who represent the Tohono O'odham and Yaqui, San Carlos Apache, Navajo and Nez Perce, and White Mountain Apache tribes. High school students participated in the training program for the first time last summer.

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"We're a small program," Maughan says, "but we're in it for the long haul—we don't ever look to be big and flashy. You've got to identify the students, get them here, and encourage and help them through the system."

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Linda Marianito is one example. The 24-year-old senior from Window Rock spent last summer as a field technician on an aquaculture project. Marianito, a senior in range management minoring in wildlife and fisheries science, helped doctoral student Jennifer Budhabhatti evaluate the feasibility of raising fish in irrigation canals as a second cash crop. The team built about 15 fish cages of varying shapes and sizes to fit the conditions of a variety of irrigation designs.

"We hauled the cages out to the irrigation ditches at the Maricopa Ag Center," Marianito says. "After Jennifer calculated how many fish should be put in each cage, we placed the cages in irrigation ditches and stocked them with channel catfish."

Each summer morning was spent doling out catfish chow, collecting water quality information, and removing, weighing and measuring fish that died. By the end of three months, the team found that fish can, indeed, live in irrigation canals. The next stage of the project involves testing the quality of fish raised in irrigation water by analyzing pesticide and herbicide levels in the fish.

"I think it's a great program," Marianito says. "It's a great opportunity for Native American students. When I started the job I knew it was really different, not just a part-time job. This is something I'm really interested in."

During the school year, Marianito works as a teaching assistant for a water quality course taught by SRNR faculty. After completing a master's degree in natural resource management, she says she hopes to gain experience working for a federal agency and then take that knowledge to a resource management position in the Navajo tribe.

Lorena Wada, 26, is one of the graduate mentors working with training program participants. Wada's project involves locating and identifying the habitat of the threatened Apache trout. Previously an endangered species, the Apache trout's habitat used to include much of the White Mountains, Wada says, but over the years, populations declined drastically. Wada's study is a cooperative effort to define the trout's habitat characteristics. The UA, White Mountain Apache Tribe and Fish and Wildlife Service's Pinetop Fisheries Assistance Office are partners in the project.

"The White Mountain Apache tribe wants to return the Apache trout to being the predominant sport fish," Wada says, "because the fish is native to their reservation." Also, understanding the habitat requirements of the fish is one step in meeting the federal mandate to find ways to recover endangered and threatened species.

Wada's research team included: Joe Jojola Jr., a high school student who is a Pueblo Indian from New...
Lucian Garcia, a White Mountain Apache Tribe member who is an Arizona State University student; and Chris Kitceyean, also a member of the White Mountain Apache Tribe who is a student at Alchesay High School in Whiteriver. Both Garcia and Kitceyean were supported by the White Mountain Apache Tribe during the project.

"We spent the summer going to three different streams that we believed contained Apache trout," Wada says. The Apache trout were there, and were captured by administering a slight electrical shock to stun the fish gently. The fish were placed in buckets of water until all the fish in the pool were captured. Then the fish were weighed and measured and returned to the pool.

Habitat measurements were taken to determine cover, current strength, stream depth and composition of the stream bottom. Wada also did underwater observation but the icy cold mountain streams made it difficult to stay long in the water.

"I snorkled and got to see some of the fish," Wada says, "but it's very difficult to approach a fish and not interfere with what it's normally doing."

Without her research team, Wada says, her work would be impossible.

Wada says a Fish and Wildlife Service genetic analysis of the Apache trout in the three streams she surveyed has raised some questions as to the genetic purity of the fish. Apache trout are known to breed with Rainbow trout, creating hybrids. This summer, Wada will continue her study on two other streams in the White Mountains known to contain genetically pure Apache trout. Data on the five streams then will be analyzed for differences.

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"I'm hoping also to maintain their interest in natural resources and get them even more committed to a career in a resource management field," she says. "They are trying to protect their land and heritage. Having qualified natural resources managers among tribal members will give them additional options."

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