



The key to learning about our environment is to experience nature. "When you see the trees and wind, and when you go out and star gaze and see those things, it becomes much more important to you...more real."

UA Conservation Camp

Where

Their wings make a sharp purring sound. The sound of broad tailed hummingbirds bathing in a narrow mountain stream comes across loud and clear at five o'clock in the morning. It is the best time to see and hear them.

The whisper of a half dozen bird watchers breaks the still of the forest. They have gathered to witness these small wonders of nature. Binoculars poised, they watch the hummingbirds splash; then defy aeronautical theory by hovering; and then dart back and forth above the stream bed.



UA range management specialists Dr. Phil Ogden (left—center) and Dr. George Ruyle (above) conduct field training on range surveying in the meadows surrounding Mormon Lake.

Textbooks Come Alive

Story and Photos by Lynn Ketchum

Before the week is out, these bird watchers—together with other students from the UA Natural Resources Conservation Workshop for Educators—will marvel at the grace of a great blue heron rising from a forest pond; an osprey gliding over northern Arizona's Lake Mary, on the lookout for a breakfast fish; and an elk sharing pasture along side cattle in a mountain meadow. These are just a few of the memories the educators will take back to share with their students.

The weeklong workshop, at Camp

Mardecor on the shores of Mormon Lake south of Flagstaff, is designed to teach school teachers and interpretive naturalists, like park rangers, 4-H and scout leaders, about our natural resources and the importance of conserving Arizona's precious resources through good management.

As we move toward an urban technical society, this kind of program becomes even more important...more timely. These days John Stair, workshop director and UA Extension specialist, says many people have the

misconception that technology will solve all our concerns about future energy needs, food and building materials, when in reality nature and its resources will still provide some of the answers. "I think we have to show them (the public) there are some things we still have to work with nature on. We have to learn to work with nature to provide some of our resources."

Resource management is an important subject to all of us, but especially in the West where public lands support multiple use, from recre-



ation to ranching. This situation challenges resource managers.

Conservation does not discount use, organizers say. The key is resource management. And that is the emphasis of this graduate credit, summer program. "Our interpretation of conservation is wise-use and good management," says wildlife specialist Stair.

The goal is not only to teach participants about the ways of nature but also professional approaches to management of plants, wildlife and water—techniques that will help preserve and protect the state's natural resources in the years ahead.

One important spin-off of this informal approach to environmental education — lots of frank discussion about resource management. As one student says, "You shed all your apprehensions, your inhibitions—leave them back in town and have a free interchange of information."

The conservation workshop enlists the help of UA specialists from the School of Renewable Natural Resources and the Cooperative Extension Service to teach the educators and to help them prepare their own environmental education programs when they return to their schools in the fall.

And the best way to learn about the outdoors, organizers say, is to be in the outdoors. Here the theory and textbook concepts are applied. It is an approach workshopppers welcome. "Books just don't get it," Vicki Dillahunty says. "You have to become part of nature, you have to come out here."



*Above:
Workshop activities include everything from
bird watching and range surveying to timber
core sampling.*

*Opposite:
Workshop student Keith Alexander of Phoenix
learns to measure tall timber.*







SRNR...

***School of
Renewable
Natural
Resources***

Preparing natural resource professionals to handle tomorrow's problems instead of yesterday's. That's the goal of UA College of Agriculture's School of Renewable Natural Resources.

"We're trying to equip them for a world where resources are under a lot more pressure," says the school's director Frank Gregg. The pressure includes more people and an ever increasing consumption of natural resources like forests, land and water.

To meet the challenge of maintaining our natural resources the School is training what Gregg calls the "next generation of scientists, administrators, managers" in the fields of fisheries-wildlife science, forest-watershed management, landscape architecture, natural resource recreation, range management, and watershed hydrology.

The practical 'hands on' experience makes all the textbook concepts come alive.

The fifth grade teacher from Tucson believes, as the organizers do, that the key to learning about our environment is to experience nature. "When you see the trees and wind, and when you go out and star gaze and see those things, it becomes much more important to you...more real."

Bob Ruff, a bear biologist who came from Wisconsin to the Arizona workshop, agrees with the teachers. "You can be in the classroom and talk about wildlife until you're blue in the face, but until you can get out and be in that animal's habitat and get a feel for the environment they live in, I don't think you can develop a full understanding or awareness of it."

Being in the woods is only a part of this week long camp. "Hands on" experience in resource management adds yet another dimension to the northern Arizona program. As one Chandler biology teacher put it, "the practical 'hands on' experience makes all the textbook concepts come alive."

During the annual workshop, organizers oblige the teachers with "hands on" lessons in forestry, range and wildlife management.

"We try to give them every experience they can take," Stair says. Stair



along with co-director Dr. Malcolm Zwolinski see to it that the educators enjoy not only the lectures, programs, demonstrations and field trips, but star gazing, insect collecting, wildlife surveys and, of course, those dawn bird watches.

After a week concentrating on

environmental issues and resource management techniques, the educators gain more than just first hand information. The workshop also generates self confidence, Zwolinski, associate director of the UA School of Renewable Natural Resources and co-director of the workshop, believes. The students leave the mountain camp with not only the awareness, appreciation and enthusiasm for environmental education but the confidence that they can now teach natural resource conservation.

The conservation workshop for educators is the second generation of Extension sponsored conservation camps. The idea evolved from a youth conservation camp started in 1961. Teachers had to write recommendation letters for those kids interested in attending. After hearing about the kids' camp for 20 years, the teachers decided the workshop, with its camp-site curriculum, would be a good idea for them as well as kids.

The School's roots go back to 1959 and the creation of the department of watershed management. In the years following, the department added courses and degree programs in natural resource recreation and fisheries management, paving the way for a new School of Renewable Natural Resources. In 1974 the School became a reality.

Today, the UA School of Renewable Natural Resources includes 40 faculty working in four divisions—forest watershed resources, range resources, landscape architecture and wildlife-fisheries and recreation resources. Currently some 225 undergraduates are enrolled in the School and 165 graduate students pursue either masters or doctoral degrees in the various program areas. Graduates pursue careers in planning, design and management of renewable natural

resources.

Since its beginning, the School has prided itself on the interdisciplinary approach to natural resource management—integrating management of range, forest and water resources.

The approach is particularly important to western states where the large tracts of public lands serve a multiple use.

The interdisciplinary emphasis continues today, but like the school itself, the emphasis has grown to include more than just the physical sciences. In training tomorrow's resource managers, students work to bridge the traditional sciences of resource management with the complex social, political, economic and legal systems that complicate resource management.

"It used to be, twenty years ago," Gregg says, "that professional schools

of natural resources were turning out good scientists and researchers but they weren't learning anything about managing conflict. Now you have to do that."

These days, it's "a conflict ball game," adds the school's director. Gregg, who headed up the Bureau of Land Management under the Carter administration, points to one example that typifies the challenge facing today's natural resource graduates. "If you're talking about managing water, there's conflict over who's going to use it and how clean is it going to be and who's going to pay for getting it clean."

That kind of problem solving will test the new breed of UA natural resource graduates as they pursue careers as natural resource scientists, researchers, designers, managers or administrators.

—Lynn Ketchum



The workshop classroom extends beyond the woods to Mormon Lake. Working along side Arizona Game and Fish personnel, students study the catfish and its watery habitat.

“Books just don’t get it. You have to become part of nature, you have to come out here.”



“Sometimes we attract teachers with patent leather shoes that have never slept out in the ‘wild’ before.”



That was 1981. Every summer since, 25-45 teachers, park rangers, 4-H and scout leaders have found their way to the edge of Mormon Lake where for one week teachers become students.

When John Stair organized the first camp for educators five years ago, he thought they'd attract only those already interested in the outdoors. But he soon found out that interest in natural resources went beyond the initiated. “Sometimes,” Stair says, “we attract teachers with patent leather shoes that have never slept out in the ‘wild’ before.” The staff remedies that situation with a campout atop Mormon mountain at the end of the week.

But before the workshop wraps up, this year's 35 campers will have studied the ‘wild’ literally from the ground up. The entire ecosystem surrounding the marshy Mormon lake becomes the teacher's classroom.

The Arizona educators study range management, surveying the forest grasses and visiting a neighboring cat-

tle ranch, seeing first hand the Flying M's day to day approach to range management. Timber surveying—counting trees, measuring the towering ponderosas, determining mountain slopes and tree core sampling—provided a hands on forestry experience. And wildlife studies took the teachers from the tree tops (bird watching) to the edge of Mormon Lake where with the help of Arizona Game and Fish, the teachers learned about the life and times of northern pike and catfish.

In the end these teachers will return to their schools better informed and better prepared to teach environmental education. And workshop director John Stair hopes, the teachers will leave remembering not only the experiences of a week in the woods but also the simple message: “Even though we may have botched things—we may have over cut (forests) or over grazed—there are ways to manage our resources back to good health.”

“We try to give them every experience they can take.”