



Women in
**NATURAL
RESOURCES**

Vol. 12, No. 1 September 1990

Law Enforcement

**Forest Service, Park Service
Philosophies**

BLM's Desert Rangers

**Corps of Engineers: Visitor
Assistance Only**

Tough Judges Help

**Women Make It to the Top
and**

**Landscape Architects Should be
Land Advocates**

Shepherd's Legacy

Pesticide Paradox

*for professionals in
forestry, wildlife, range,
fisheries, recreation,
and related social sciences.*

Stealing from the King

This issue the focus is on law enforcement--a relatively new field for women in natural resources to enter into. From what I learned as the issue was put together, it is also a relatively new effort for many of the agencies. Some managers are very ambivalent about having to provide it--period. They ask: why should natural resource-trained people, men or women, have to act like police? The women I talked to for the most part enjoy their work, know law enforcement is needed, and expect to be promoted as the field expands.

We didn't ask them for philosophical treatises on why the agencies are getting into it in a big way now, who the law breakers are, or how natural resource law breaking could be stopped in ways other than through the criminal justice system. But it seems appropriate here to reflect a bit on the problem.

Historically, there has been a difference in the way our government has handled their public lands from the way that Europeans have, many current under-developed nations have, and some Latin American countries have. Those countries' foresters or wildlife people have always been law enforcers. The tradition started centuries ago when foresters protected the King's lands from hunting and wood gathering by the peasants. The Crown allowed a selected few to hunt and fell trees, and all revenues from the lands went to the treasury to support the King. The peasant's only option if he was needy or greedy was to try to outwit the King's men--to poach and cut.

This country has always had poachers and thieves on the public lands, of course, but it is epidemic now, and I think there is some of that "stealing from the King" mentality operating. Common folks begin to see agency people as the King's minions, monitoring rivers and locking up lands to benefit the King's chosen ones--and the King's treasury.

Who are the army of casual poachers? There have been very few studies of this type of criminal behavior. In one of them, undertaken at the University of Idaho, Michael Scialfa did an empirical study on those who poach, an ethnographic analysis. He interviewed and studied 17 poachers in northern Idaho and talked to 12 others over a period of two years. He says that most of the interviewees learned to hunt between nine and twelve years of age. For over half, their initial hunt was conducted illegally, their fathers usually hunted illegally, the fathers usually knew their sons did and condoned it. They easily justified their poaching with many rationales: "doesn't hurt anything, don't do it that often, no worse than what others do, do it for food and never waste any, bought a tag and deserve an animal." Surprisingly, they had no view of themselves as illegal hunters or as seriously harming the resource.

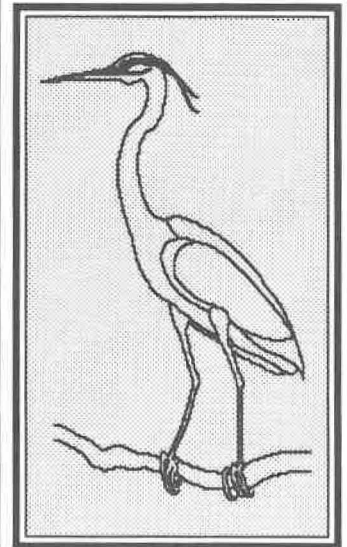
It would seem to me that a national campaign targeting young boys would be most appropriate. In a News and Notes item in this issue, there is a story about how research shows that males do 75 percent of the littering and how appropriately aimed ad campaigns *effectively reduce* that behavior.

Commercial poachers are another problem altogether. The rewards are enormous now for criminals to get into the field. High prices are being paid for hides and animal parts, for wood, for plants, for marijuana growing. People make or save money by squatting, dumping, and siphoning off oil and gas. One Fish and Wildlife Service special agent guessed that fewer than three percent of commercial poachers of wildlife were ever caught. Those are not good odds. So what are we to do? Increase our payments to people who turn in poachers? Continue to hire more law enforcers? Mount campaigns in the media?

Before we spend a lot of money implementing programs, we ought to spend a little more money on good research into who grows up to be a poacher and tree thief, what is the mentality which permits them to rationalize it away, and at what point in their lives did they start that thinking.

The very talented women who are now in law enforcement would be good communicators of the ethics of public land use. Many of them teach hunter safety and present public programs about various aspects of their natural resources work now. I suggest that if the research supports it, they give up on the Dads and zero in on the nine-year-olds with messages that the public lands do not belong to the King.

Dixie L. Ehrenreich



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The cover photo is of Jacquelyn Boaz, Assistant Law Enforcement Coordinator and Law Enforcement Officer Cibolla National Forest. Photo courtesy of the Forest Service

LETTERS & OPINIONS

This is a response to the letter from JoAnn Weimar (Vol 11, No. 3) asking why the Forest Fire Laboratory of the Forest Service's Pacific Southwest Research Station in Riverside California stopped developing technologies like those produced by the FIRESCOPE program. The design of FIRESCOPE was initiated in response to the need for effective cooperation among fire agencies that was noted during a series of major wildfires in southern California in 1970. Because of the magnitude of that problem, special Congressional funding was provided for the research and development effort, which also had the active support of the major fire services in the area. After the development work, FIRESCOPE was implemented locally and some of the technology has been adopted nationally and internationally. We still do fire management systems research, but it is at a modest level due to de-

creased national emphasis and funding for wildfire research. The Canadians, on the other hand, are very progressive in fire management systems research and have taken a leadership role.

Richard Chase, Riverside, California

•••

I know Denise Meridith and find that your interview by Daina Dravnieks Apple (Vol. 11, No. 4) does a good job of helping others share her experience. I enjoyed that issue and just wanted to say—keep up the good work.

Donna Hepp, Fort Collins, Colorado

•••

I liked the letter from Dale Williams (Vol 11, No. 4) telling about her reaction to the futility of spending our energies and money saving whales and tall grass prairies while the world's population explodes,

dooming all resources. She advocated mounting a campaign for population reduction in the name of natural resources preservation as the only way to save a shred of it. I agree and thought she'd be interested in what environmentalist Denis Hayes, Chairman of Earth Day 1990 (a lawyer, an engineer, and professor at Stanford) wrote and delivered as a lecture (reprinted in *Natural History* April 1990). *It will not be possible to build a sustainable society without confronting some controversial, emotional issues. Many environmental organizations have avoided issues that should be of central concern....We are frequently urged to sidestep the population issue. Environmental advocacy of family planning will alienate major religions, certain racial and ethnic leaders, and some heads of state from the environmental cause. Some feel we should avoid the issue and instead focus all our attention upon matters over which we can build a consensus....We must ignore the advice. The human population, which has doubled since my birth, may quadruple before my death. Current population levels are undermining the biological basis for our future. Water tables are plummeting far faster than they are charged. Topsoil is eroding five times faster than it is replaced.... There is not a single important problem facing the planet that could not be more easily solved with a population of under five billion....Global population growth is an urgent priority, and it must be addressed with substantial family-planning assistance and provisions for social mechanisms (for example, old age insurance) to undercut the*

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motivations for large families while advancing social justice. For \$4 billion per year, family planning could be provided to all who want it. It might be the single most cost-effective investment available to the world.... So Williams is not alone—but where do we go to “sign up?”

Charlene Solter, New York City

•••

The Forest Service's Samuel Kunkle and David Harcharik attacked some of the concerns about the Tropical Forestry Action Plan presented by Kumar et al (Vol. 11, No. 1). They defended TFAP on many points, but I would like to take Kunkle and Harcharik to task only in regard to Women in Development (WID). They point out that FAOs Forestry Department has recognized “the crucial role of rural women” for some time—that FAO is making headway in women in development efforts because they have an energetic woman with substantial tropical experience in social forestry, and that a number of workshops and other activities have been organized. From my

own perspective as a WID campus administrator, I see several vital points missing: 1) There is a need for consistent management approaches for all projects to include guidelines, development of goals and objectives, product development where appropriate, tryout, adoption, dissemination, and continuous feedback of information to assist in a reevaluation. There was a time for diverse approaches, but we've been in development work a long time and now we need consistent and reliable management strategies; 2) We need longer term projects—five to seven years—with solid, research-based pre- and post-assessments; 3) We need to develop women's coalitions in the countries receiving development funds to ensure communication, assessment, problem solving, and decision-making for each project. And it goes without saying that women who are trained in the skills it takes to organize women in coalitions should be managing the WID programs. 4) We need to recognize that in-country women themselves should choose their own training, should decide what technologies will reduce labor intensive tasks. And during training, child care and financial support should be included. 5) We need more data of all kinds on which to make good decisions: demographic, forestry/crop relationships, time spent on tasks, production values of women versus men, gender specific spending and income generation, and a host of others.

Could some of these needs have been spotted earlier with a less top-heavy administration in the development agencies as Kumar et al charged? Would a qualified woman from Pakistan who had emigrated to Canada be more effective going back to Pakistan on a World Bank project to organize a cooperative than, say, a native New Yorker, as Kumar et al suggested? Probably.

Doris K. Williams, Moscow, Idaho

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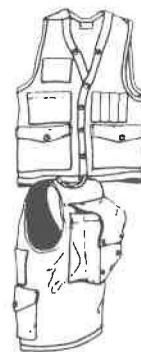
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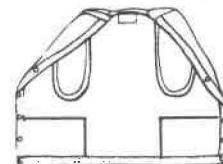
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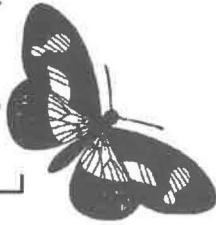
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QUERY



Query Editor
Lisa K. Stein
asked four
readers the
following
question: *Do
you feel that
government
agencies are
effectively
enforcing
regulations
that are of
great
importance
to natural
resource
conservation
in America?*

Jan Goldman-Carter

Sometimes yes, sometimes no. I have learned that such enforcement and general cooperation usually follows the resolve and signals that are coming from the current administration. Congress also may have some effect.

My experience lies mostly with cases involving wetlands protection. One example is the situation with the Corps of Engineers. I have seen a complete reversal of policy in this agency from one of no interest in protection to a very protective mission in the space of about one year. This was due to President Bush's campaign promise to protect wetlands. Reagan administration policies did not include any provisions for the protection of wetlands at all—in fact, it dismantled and discouraged wetlands protection efforts of previous administrations. Therefore, the Corps of Engineers had little incentive to conserve them. When the change in mission took place, it was not due to any actual change in the law, but in the way those laws were interpreted and enforced by the Corps.

Another example involves the Department of Agriculture (USDA). The 1985 Food Security Act provided for legislation to deter "swamp busting." It directed the ASCS (Agricultural Stabilization and Conservation Service), an agency with USDA, to withhold commodity program payments to farmers who converted wetlands and planted commodity crops on them. Unfortunately, due to the traditional role of ASCS as *assisting* rather than *regulating* farmers, and due to the strength of the agricultural lobby, this agency has been dragging its feet ever since the Food Security Act became law.

Another organization involved in making loans to farmers, the Farmer's Home Administration, was authorized to put wetland protection easements on lands which are returned to the federal inventory of property when the owner of the land defaults on his or her FmHa loan. This authority is derived in large part from Executive Order 11990, passed by President Carter in 1977. This order instructs government agencies to do what they can to protect wetlands. After a wetland easement is placed on a piece of land, it can then be sold to another farmer, but the farmer must respect the terms of the easement. In most cases, however, FmHa is refusing to place the ease-

ment on the wetlands, probably due to foot-dragging instigated by the agricultural lobby. The 1985 Food Security Act is now up before Congress again on the 1990 Farm Bill. Hopefully, many of these problems will be addressed and resolved by this group of legislators.

Jan Goldman Carter is Counsel for the Fisheries and Wildlife Division of the National Wildlife Federation, Washington DC.

Carol Cochran

During the years when I was an environmental activist for the Sierra Club in New Mexico, it was my mission to encourage or put pressure on federal resource managers to be strong in their efforts to protect natural resources. Then and now I feel that they just don't do as much as they could.

Specifically, I think the area of endangered species—namely, those plants and animals that are entitled to endangered species status—is sorely neglected. It shouldn't take lawsuits by private individuals to get deserving species listed and once listed, to implement programs to speed their recovery. Many times, though, lawsuits are the only means available.

In the case of the Mexican wolf program with which I am involved, just the filing of a suit against the US Fish and Wildlife Service seems to have caused movement on this long-stalled issue. It seems that when the US Army general in command at White Sands Missile Range claimed that the reintroduction of the Mexican wolf in the vicinity of the range would interfere with his maneuvers, Fish and Wildlife took his answer as a definite no-go and wanted to leave it at that. Since the suit, however, the general has changed his position somewhat and now Fish and Wildlife may be moving ahead, slowly, to recover the Mexican wolf.

Generally, government agencies try to stay away from projects involving controversial animals—animals that would be hard to reinstate due to conflicts with human use of the natural areas in question: the desert tortoise is one such controversial example. This problem is amplified by the multiple use aspect of agencies like the BLM and the Forest Service who must

always consider the needs of their human users in addition to the natural residents. And the truth is that none of the natural resource agencies are very significant in the political scheme of things in our government. This makes getting controversial things done even more difficult—assuming they have the will to do it.

Although George Bush says he wants to be “the environmental President,” it does not look like strong leadership will come from the top. The best hope for protection and enforcement lies, I think, in a knowledgeable and vociferous public which can support and strengthen the resolve of agency personnel.

I realize also that government agencies are under an incredible amount of pressure, where, many times, special interest groups have an enormous amount of power and “say-so” over management policies that are implemented. Although these groups do not make policy themselves, they may have a lot of influence over the politician and his or her appointees who do. The result is that risk-taking or long-term commitments by natural resource agencies and their employees is dampened. Next year’s budget, next year’s immediate supervisor, is not always a given. This curtails any planning for the future that they might otherwise be persuaded to do.

Carol Cochran, Ph.D. is presently the Curator of Education at the Arizona-Sonora Desert Museum in Tucson, Arizona. She served as a member of the National Sierra Club Wildlife Committee and recently was Coordinator of Earth Day Tucson 1990.

Katrin Snow

The Xerces Society is an organization that deals with invertebrate conservation issues. My work in the Society is with the Monarch Project, attempting to preserve the monarch butterfly by saving its overwintering ranges which lie along the California coastline. Some of these areas include Natural Bridges State Beach, Pismo State Beach, Leo Carillo State Beach, and Montana de Oro State Park. My knowledge of govern-

mental regulation enforcement lies in my dealings with both park management and the individual rangers who are employed there.

It has been my experience that when the park rangers are educated to the problems, monarch butterfly habitats are protected. There are no federal or state laws protecting the monarch, so we rely on the goodwill and support of the parks and the community to make sure the overwintering habitats are preserved.

Park rangers are especially adept at controlling public access to monarch roosting areas and at providing useful interpretive materials. When there is a communication gap, we see tree trimming or other management activities which have a negative impact on the habitat. Management is usually very gracious about correcting mistakes, however, so overall, I think a lot of goodwill exists.

We don’t always know exactly what works—natural resource conservation is like playing with pieces to a large puzzle and management is an artificial manipulation of the environment. In the case of the monarchs, we don’t know exactly how to manage a stand of trees over the very long term. The key seems to be finding an individual within an agency who is most interested in and involved in monarchs, work closely with them, and get them the best information we do have.

Regulatory agencies are called upon to consider the needs of hundreds of different plants and animals, as well as the needs of the public. Even if a sympathetic and knowledgeable park manager is found, the park district may not have the final say in what happens, if, for example, a county government has made an arrangement to lease part of the park. In that case, the county is usually not dedicated to conserving the natural resources, as the park district is, but wants to bring in development to add revenue to the county coffers.

Katrin Snow is Director of the Monarch Project, Xerces Society. Her training is in journalism, her specialties, radio and print media.

Michelle Perrault

Clearly enforcement is not going on or we wouldn’t have to be involved in so many lawsuits with the intent of forcing government agencies to adhere to the letter of the law. The Reagan administration was notorious for not properly enforcing environmental laws and we are still contending with this legacy on into the Bush years. Many of the laws are already in place that would effectively deal with forestry management problems, the pollution of air and water, and other environmental issues. It’s just that they are unsatisfactorily implemented.

A lot of the lawsuits I am privy to by being on the National Board of Directors of the Sierra Club are aimed at agencies on the local and state levels. Here is where most of the crimes against the environment are occurring and where most of the constant watchdogging must take place. If the right people are not in place at the different agency levels, it is great cause for concern. Often, these individuals must be constantly watched.

An example of such a local environmental problem is the lawsuit we just filed against the Metropolitan Transit System in the San Francisco Bay area. All we hope to accomplish with that was to get the transit system to reduce the air pollutants they were creating down to the level allowed by law.

At least our democratic system of government has in place provisions for such watchdogging. A very real concern since I have become Vice President of the Sierra Club’s International Committee is whether or not mechanisms are present for environmentalists in countries that don’t have a democratic form of government. Progress and understanding for them must occur at a painfully slow pace.

Michelle Perrault serves on the National Board of Directors of the Sierra Club. She was President (the second woman to hold the position) from 1984 to 1986. Perrault’s focus is land use and offshore drilling on both the east and west coast.

The Honorable Jean Williams has the assistance of good laws when it comes to protecting trees in New Mexico.

Tough Laws, Tough Judge

Jacquelyn A. Boaz

The state of New Mexico has a vintage 1957 “woody products” law that has served as a model for similar laws in many other states. It deals specifically with the problem of wood and plant theft. It is called the Forest Conservation Act, and provides for a misdemeanor fine—for those who are found guilty of violating it—of not more than \$1,000, or imprisonment not to exceed one year, or both.

THE LAW AND HOW IT IS ADMINISTERED

The law allows any officer of the law, forestry agent, forest ranger, forest patrolman, or conservation officer enforcing the provisions of the Forest Conservation Act *to stop any vehicle* or means of conveyance containing any woody material for the purpose of making an inspection and investigation; *to inspect the wood material in any vehicle*; *to seize and hold any woody material* cut, removed, piled, transported, or offered for sale in violation of this law; *to seize and hold any property used* in violation of this law.

The law further states that “no person shall cut, remove, transport, or sell any woody material without written consent of the owner or proof of ownership, whether the land is publicly or privately owned.” The proof of ownership “shall be exhibited” to any of the aforementioned law enforcement agents at their request. There is another section of the law which addresses Christmas tree tags. And there are also rules and regulations under the Plant Protection Act, a separate Act, for live, balled, burlapped, potted, or containerized trees.

These laws are enforced by the Special Agents of the New Mexico Division of Forestry who are the only ones issued the New Mexico State Forestry violation books. Other law enforcement personnel, however, can file complaints in court or get a Special Agent to issue them. The Division provides to other law enforcement agencies specialized training on these Acts and then awards Peace Officer Special Agent cross-designation status for Federal Law Enforcement personnel (Forest Service, Fish and Wildlife, Bureau of Land Management) who have received that training. It can be said then, that in this state, the arm of the law is long

when it comes to enforcing natural resources regulations.

Violators of these Acts are cited into New Mexico Magistrate Court. This Court is presided over by a Magistrate who is elected, and whose jurisdiction remains within a particular county. Once within the purview of the Court, the State Conservation Law holds that the defendant has a number of options: he or she is entitled to a jury trial, may elect to have their case heard by the Magistrate, or may plead guilty in which case the Magistrate will set the sentence. Defendants also have the option to plea bargain their case, meaning that the defendant must sign a waiver of jury trial and the Magistrate may accept the sentence agreed to by the prosecutor and the defendant.

TORRANCE COUNTY

Torrance County is located in central New Mexico, approximately 40 miles southeast of Albuquerque, a market readily and easily accessible to poachers who want to sell their products. The county lends itself to growing the kinds of trees and plants that home and business owners seek. The topography varies from high plains and mesas in the eastern part to the irrigated farm lands of Estancia (Bean) Valley intersecting the county from north to south. Conifers grow on the sloped Manzano (Apple) Mountains on the western boundary. The land ownership pattern is also mixed: private holdings date from Spanish land grants and active homesteading in the early 1900s; state of New Mexico lands acquired in various ways and under the Homestead Act (“school lands”—one section in every township); and federal ones. The Bureau of Land Management administers a number of scattered small tracts while the Cibola National Forest holds land in the Manzano Mountains and the Gallinas (Chicken) Mountains on the southern boundary of the county.

Illegal digging and selling of ponderosa pine and piñon pine trees for landscaping is a lucrative business for some of the 8,000-plus local residents as well as for outsiders. These trees are sold to nurseries or are peddled to homeowners from the bed of a pickup truck parked on a city street. Prices vary from \$25 to \$100 for regular

trees to \$125 to \$300 for "character" pinon pine trees. Firewood sells for \$80 to \$200 per cord fluctuating with the species and location of sale. Depending on how fast poachers can work, a good living can be made stealing and selling truckloads at a time. That is, if you are not caught.

MAGISTRATE COURT

There are two Magistrate Court locations in Torrance County where cases involving plant theft may be heard. One is located in Moriarty just off Interstate 40 in the northern section of the county, and the other court is located 20 miles south in the county seat of Estancia. Each court has its own Clerk of the Court.

The New Mexico Department of Game and Fish—who cite poachers of deer, elk, bear, and cougars—and the New Mexico State Forestry Division are the two state agencies who generate most of the law enforcement actions on poaching in the county, some 50-75 cases per year for plants and animals in Torrance County alone. State Police and the County Sheriff's Department may also cite violators. This same Magistrate's Court also hears conservation cases involving violation of laws pertaining to the State Parks, State Fire Laws, Recreational use of State Public Lands, Administered use of State Lands, and the State Endangered Species Act. Torrance County has a well-used state park, Manzano State Park, which generates it's share of violators to the Court.

In addition to seeing to the legal business of a busy and varied county citizenry, the Court also has jurisdiction in matters pertaining to the Interstate highway which runs through the county bringing drug traffickers, accident cases, and the serious and not-so-serious violations from impoverished transients and affluent tourists. The Magistrate handles some 1400 cases a year, 50 percent of which involve local Torrance County citizens, and the other 50 percent a mix of New Mexico and out-of-state people. These courts, then, do not appeal to the judge who is faint of heart or who is single-minded in what they would like to see come before them.

Magistrates in counties of more than 200,000 population must be lawyers, while in other lower-population New Mexico counties, the Magistrate must have a high school diploma or GED equivalent. Under state law, all magistrates earn \$31,000 per year. The combined courts in Torrance County imply a heavy administrative load for the Magistrate to oversee; it is the only one so combined in all of New Mexico. In 1990, there were 15 women Magistrates in the state of New Mexico holding these positions and Judge Wil-



liams of Torrance County was senior among them.

THE JUDGE

The Honorable Jean Williams presides on the bench in both town's Court. Judge Williams has served for 21 years in this capacity. She issues Warrants of Arrest, Search Warrants, Summons, Subpoenas at the request of party (meaning that if you are representing yourself in Court and want to call witnesses, you can have the Clerk of Court subpoena them by filling out a form that the Judge then signs and processes). The Judge sets bail on felony and misdemeanor charges and hears civil cases in which the debt or sum of the claimed does not exceed \$5000. She also marries couples.

When very young, her first employment was in the City Clerk's Office in Moriarty. From there, she went to work in the office of a cattle feed lot operation. During this period she ran for County Clerk on the Republican ticket and was defeated. Her first judicial appointment came in 1969 (from then-Governor David Cargo) as a part-time Magistrate. When two part-time Magistrate positions were combined into one full-time position, she became the only Magistrate for Torrance County, servicing both courts.

Judge Williams is a forthright, friendly person who interacts well with the flow of people coming through her courts whether they are law enforcement types, criminal suspects and/or their families, lawyers, prosecutors, or just plain folks. She was born and educated in the county. Her father worked as a government trapper for the Biological Survey (a branch of the USDA Soil Conservation Service) and farmed part-time. Like many women of her generation, she married soon after high school, and raised three daughters who are now professional women.

It is not difficult to persuade Judge Williams to reveal her bias on enforcing conservation laws because she has a great personal concern for the proper management of our natural resources whether they are private or in the public domain. She deplores the depletion of New Mexico's woodlands by whole tree theft and unmanaged, illegal woodcutting. She feels that the justice system can influence conservation matters but other courts don't always act on behalf of natural resources. In addition, a Magistrate can only adjudicate on violations or offenses if they are brought to her by law enforcement agencies; these agencies are sometimes not as vigorous in pursuing violators as they should be.

The Judge has a nine-point guideline for being a good Magistrate: be willing to learn, be objective, be

consistent, be open-minded, be a good listener, be patient, be interested in people and like them, be fair, be aware of the needs and problems of the people in Torrance County.

THE JUDGE, THE LAW, THE COURT, AND THE GUILTY

The accused illegal woodhauler rubbed his neck with both hands and said "Have you got any lotion or vaseline, Judge?" Judge Williams replied "No," and started laughing. The woodhauler said, "I put a lot of lotion on my neck before I left home but I think I'm going to need some more!" The Judge, still laughing, said "Well, I guess you're just out of luck." The Judge explained to bystanders: "You know they all call me the 'Hanging Judge' don't you?" At this point, the bystanders all laughed, but the poacher-woodhauler pleaded guilty.

In another case, a resident who lived on the outskirts of Mountainair, New Mexico, noticed a bear cub in one of the trees in his yard. He went immediately to the local store which sold hunting licenses and purchased a bear license. He then returned home and shot the cub. Outraged local citizens reported him to New Mexico Game and Fish Officers who investigated, then determined that the cub was shot outside the designated hunting area. When he came before Judge Williams, she found him guilty of poaching, fined him the maximum fine under the statutes (\$400) and Court costs. In many other counties, this would have been a good-old-local-boy offense, ending with a hand slap. In her Court, she figuratively hangs them with sentences which convey the seriousness with which she takes the state's conservation laws.

On sentencing of offenders in her court, Judge Williams considers several factors before handing down a sentence:

- did the offender know a law was being broken?
- what were the circumstances of the violation and/

or arrest?

- can the prosecutor provide knowledge of any prior convictions?

- does the Judge believe (after review) that the offender will continue the criminal activity?

Many of those who stand before the Judge do not have regular employment, and a number of them are on welfare. When the guilty decision has been made and she must determine a sentence, Judge Williams uses an interesting technique for forestry products offenders. She decrees the maximum penalties of \$1000 and one year imprisonment, and then places the sentence in abeyance for one year. In the event that the offender is caught breaking any law, he or she must serve the sentence, pay the fine, and fulfill the requirements of the sentencing of the later conviction, too. She has been tremendously successful in the prevention of additional offenses.

CONCLUSION

Law Enforcement and the Judicial Branch are both integral parts of the process of conservation of our natural resources. Good laws, active enforcement actions, and support of judges such as the Honorable Jean Williams go a long way in preserving our natural resources for future generations.

Jackie Boaz is Assistant Law Enforcement Coordinator and Law Enforcement Officer on the Cibola National Forest in Albuquerque, New Mexico. She provides administrative assistance on law enforcement matters to the forest and works investigations on ARPA violations, drug eradication, vandalism, wood theft, and other alleged violations. Boaz attended the Federal Law Enforcement Training Center at Glencoe, Georgia six years ago at the age of 49. She is a Special Agent for the New Mexico Department of Forestry and has appeared in Judge Williams' Court numerous times on state forestry products cases. Her degrees, MA and Ph.D., are in Recreation from the University of Northern Colorado and the University of Minnesota respectively. Boaz is shown below, lifting prints.



Jackie Boaz, shown working on a stolen chainsaw, lifting prints.

Photo courtesy of the Forest Service

The number of women is increasing proportionately to the increase in numbers of Law Enforcement Officers and Special Agents in the agency.

Overview of Forest Service Law Enforcement

Susan Sea

Within the Forest Service, there has been an ebb and flow of interest in providing law enforcement by agency personnel themselves. In the early days, the enforcement of laws and regulations was a standard part of all Ranger jobs. After that, there was the era of handing off serious law enforcement to local enforcement authorities. And then the swing back toward in-house, natural resource-based police work began in the 50s, but still has not been completely accepted by all Forest Service managers into the 1990s.

By 1961, the first Special Agent (the highest ranking law enforcement designation) had been hired for arson investigations. Much later, in January 1978, the Forest Service employed Janet Arling, the first woman Special Agent. Arling brought to the agency previous skills and experience. She had been employed as a Special Agent for the Internal Revenue Service. When she first reported to the Boise National Forest, Arling recalled that she was on trial by management and the Forest Service in general: "It was necessary to show that I could perform the law enforcement job as well as any male Special Agent." Once she worked through these self imposed perceptions, she felt she became an accepted part of the program. "Public acceptance was positive—so was the reponse from officers of other agencies." She is still employed by the Forest Service and works in the Regional Office in Ogden, Utah in Fiscal and Public Safety.

Today, 18 percent of the Special Agents and nine percent of the Law Enforcement Officers are women in the Forest Service.

TRAINING

The training requirements are the same for men and women at the Federal Law Enforcement Training Center (FLETC, in Glynco, Georgia) except for the Physical Efficiency Battery (PEB) that adjusts for age and gender. The PEB adjustment is based on the premise that anatomical structure and physiological makeup of the female generally places her at a disadvantage in comparing her physical feats to males of a similar age group.

Region	Total Special Agents	Women Special Agents	Total LEOs	Women LEOs
R-1 Montana Idaho, Wyoming	8	1	42	4
R-2 Colorado Nebraska, South Dakota	6	1	25	2
R-3 New Mexico Arizona	7	1	51	3
R-4 Utah, Idaho Nevada	12	1	31	2
R-5 California	52	14	136	18
R-6 Oregon, Washington	30	5	79	8
R-8 All SE States	21	3	136	10
R-9 All NE States	11	1	26	1
R-10 Alaska	3	0	4	0
Washington Office	4	0	0	0
TOTALS	154	27	530	48

The basic 9-week police training program includes all the material to train a student for performance of most law enforcement duties encountered on a Ranger District. Training includes basic police courses with additional training for drug control and complex investigations. FLETC is mandatory for people who have full-range law enforcement authority and who are uniformed officers. Standard class size is 24 and length of the course is nine weeks. In 1989, 57 students were enrolled; 38 percent were women. At the present time, the dropout rate of women in FLETC is lower than for men.



The Criminal Investigator Training program (8CI) trains students in basic investigative skills. This class differs from the 9-week police training program in areas of search and seizure, constitutional law, warrants, crime scene processing,

and surveillance. More detail and practical exercises are included. Specialized advanced training is required in such areas as drug control, photography, and electronic surveillance. The standard class size is 48 and length of the course is eight weeks; in 1989, four students completed the Basic Criminal Investigator Training and two of those were women.

The Center offers many additional, advanced training programs to individuals who have completed basic courses: Police Investigator, Land Management Investigator, Archeological Resources Protection; National Wildfire Investigator; Advanced Law Enforcement Photography, Technical Investigative Equipment, White Collar Crime, Continuing Legal Education, Firearms Instructor, Physical Fitness Coordinator, Basic Micro Computer, Advanced Micro Computer, Criminal Investigator in the Automated Environment, Introduction to Criminal Investigation, Advanced Interviewing.

THE NOMINATION PROCESS

District Rangers and Forest Supervisors nominate the individuals they support to attend FLETC. These people usually show an interest or are involved already in law enforcement activities at some level. Many regions use a screening process to select candidates: psychological testing, interviews, and reviews of current job performance. The Forest Service is currently developing national standards for recruitment and selection to apply to all individuals interested in entering the law enforcement field.

WOMEN IN FOREST SERVICE LAW ENFORCEMENT

Regardless of gender, law enforcement personnel are expected to perform the same duties. When a Special Agent is requested to do an investigation, for example, the request seldom indicates a gender preference—with a few exceptions: sometimes a request is made for an Agent who has more expertise, for example, in a specific area such as wildfire, and on occasions, a woman Agent is requested for a sensitive investigation related to a charge of sexual harassment.

Stereotyping does occur. Some perceive women Agents write better and more detailed case reports, for instance. Women are also entering a sensitive and

emotionally-charged program—most of which has nothing to do with gender—because not all Forest Service managers accept the need for law enforcement to help manage and protect the resources.

And there are the other familiar hurdles relating to women holding traditionally male-held jobs. Carola Stoney, a Special Agent in the Pacific northwest, commented that in her first years, the Forest Service employees themselves would comment: "They don't really let you do law enforcement, do they?" The positive aspects, however, are that it is a relatively new and growing program, "and when you are a part of the beginning, you have an opportunity to help that program develop—you can feel ownership" Stoney said. Naomi Charboneau, Special Agent on the Jefferson National Forest reported that when people—both in and out of the agency—first learn of her work, she hears jokes about carrying a gun. This questions her femininity and implies that she will not do the job as well as a man. When working with individuals who have dealt previously with women law enforcement personnel, however, professionalism is not usually questioned.

The numbers of career law enforcement personnel are low, probably because the Forest Service has been reluctant to embrace the need for in-house professionals. Today there are 27 women Special Agents at varying experience levels, but no women Regional Special Agents. As the total numbers grow, the number of women in all the ranks is expected to continue to grow, including becoming directors of regional law enforcement programs.

Susan Sea is a Program Analyst, on the Fiscal and Public Safety Staff, Law Enforcement Branch in the Forest Service's Washington Office.

TRAINING EMPLOYEES THOROUGHLY ASSUMES GREAT LEGAL IMPORTANCE

In a recent article in *Parks & Recreation* (April 1990) William O. Dwyer and Dan S. Murrell warn law enforcement supervisors to get their training programs in order, or risk being sued for negligence. The authors note that as with all torts, "there are four key elements that must be present for a plaintiff in a negligence lawsuit to be successful. (1) There must be a legal duty to perform, (2) there must be a breach of duty, (3) there must be an injury or loss (4) there must be a causal relationship between the injury or loss and the breach of duty." So if an employee "engages in an act or omission that results in a loss or harm to some other person, and that person can demonstrate by a preponderance of the evidence that inadequate training was involved in the proximate cause of the injury, the supervisory chain, and the public or private entity, itself, may have to compensate the injured party."

The authors advise supervisors further: *monitor* what your people learn at their training sessions; *keep* all records of classes and skills updated to prove your employees were well trained; *keep* all class *evaluations* of personnel for the same reason; *use* the best, certified instructors and *keep* their records.

Dixie L. Ehrenreich

What are some of the differences between the Park Service and the Forest Service on law enforcement?

People versus the Resources?

Sandy Thompson

Brenda Schultz began her career with the Forest Service in 1988 as a full-time trainee law enforcement officer (LEO). She is currently stationed at the Supervisor's Office in Delta, Colorado which serves the Grand Mesa, Uncompahgre, and Gunnison National Forest.* Before she came to that position, however, she had five years of seasonal law enforcement work with the U.S. Park Service at Curecanti National Recreational Area in Gunnison, Colorado.

There is a difference in the way the two agencies philosophically prepared Schultz and their other employees to work in law enforcement. Park Service employees in most cases have more peace-keeping duties and all grades and levels give more emphasis in their daily work to law enforcement. This is attributed to a number of factors: Parks are smaller in size than Forests generally; visitors tend to congregate in certain areas in Parks; Forests have allocated certain law enforcement duties to other authorities such as county sheriffs, whereas Parks do their own; Parks have Visitor's Centers where the public instinctively goes for help. There are other fundamental differences.

Schultz' experiences with the two agencies point out some of the policy differences as well as the physical differences and character of the units. Curecanti National Recreation Area is located in Western Colorado near the small town of Gunnison. Within it's 40,000 acres, the Park draws mostly boaters and anglers to the largest body of water in Colorado, Blue Mesa Reservoir. Schultz notes "When I worked there, I had much more daily visitor contact as part of my everyday job than I currently do on the Forest." In contrast, the Forest encompasses three million acres, three popular ski areas (Telluride, Crested Butte Mountain Resort, and Powderhorn Ski Area), parts or all of eight wilderness areas totaling 500,000 acres, plus proximity to the city of Grand Junction, Colorado. Along with the recreational opportunities, grazing and timber management play a major role—a factor missing in the Park. Schultz' duties shifted, therefore, from daily visitor contact on a smaller acreage to investigative work having to do with resource protection on a larger and more varied tract.

Another difference is the way in which the two agencies exercise jurisdiction. The Park Service often will exercise exclusive law enforcement jurisdiction, meaning that they enforce all of their rules and regulations within the Park boundaries without



assistance from local law authorities. The Forest Service, on the other hand, has proprietorial jurisdiction: existing state and federal laws are enforced on the Forest as well as additional Forest rules and regulations. To acquire the level they perceive as needed, the Forest Service enters into cooperative agreements with local law enforcement agencies to patrol and enforce regulations on Forest Service managed lands. Given these policies, enforcement is looked at quite differently in the two agencies and the Park Service employees generally play much more of an active role daily in enforcement than their counterparts in the Forest Service.

There are five categories of positions in the Park Service: 1) Protection and Resource Management, 2) Interpretation, 3) Maintenance, 4) Administration, and 5) Concession Management. As would be expected, most enforcement duties fall under the first category.

In the Forest Service law enforcement duties can fall into a number of different categories. Every employee is Level I qualified, meaning they have the responsibility to report violations. Level II requires 40 hours of training in Forest Service laws and regulations, and proper procedure in writing violation notices. Seasonal and permanent employees are offered this training at Forest Service expense, and law enforcement becomes a part of the job as required. Some employees will use it daily, especially in recreation, while others rarely do.

In starting her seasonal career with the Park Service, Schultz completed a one week course offered by the Park entitled "Park Protection Authority,"—a class no

longer recognized by the Park Service—but at that time it allowed her to write violation notices and enforce minor park regulations. In order to make arrests, carry firearms, deal with motor vehicle accidents, and enforce the Code of Federal Regulations (CFR), Park Service seasonals must go much further and successfully complete a six-week law enforcement course—a course not yet recognized by the Forest Service. This year, eleven colleges and universities—the majority located in the eastern United States—offer the 240 hour course. “Competition for seasonal work in the Park Service is so keen,” Schultz explained, “that nearly all seasonals who want to be commissioned pay for the six week training themselves and attend the course on their own time. It gives them an extra edge for hiring.”

Instead of taking the training, Schultz worked towards her Master’s in Physical Geography at Eastern Kentucky University. Lacking the commission, however, did not hinder her law enforcement work with the visitor protection duties at Curecanti National Recreation Area, because 90 percent of law enforcement incidents are handled with a violation notice. “With the Park Service, I was dealing with people in a confined area, within the park boundaries. As a seasonal with law enforcement duties I was doing one of three things: I was either protecting the people from the park, protecting the people from the people, or protecting the park from the people.” By that Schultz means that if an angler were to portage a canoe in dangerous waters, her job would be to educate him or her on the dangers, protecting him or her from the park. If while boating, anglers became drunk, she could prevent them from boating, thereby protecting other people from the people. If the anglers got into their 4-wheel drive and drove overland off the Park Service road causing resource damage, she could cite the driver, thereby protecting the Park from the people. There is not much difference between the Forest Service and the Park Service in those priorities; in both, greater emphasis is placed on protecting the resources from the people. But still, there are some differences.

The Park Service’s enabling legislation dictated that it would be an agency with an emphasis on preservation while the Forest Service manages their 52 national forests for multiple use. For law enforcers, this means knowing the regulations of the agency. To use the 4-wheel driver example again, within the boundaries of a Park, off-road use is usually forbidden, and so a citation is almost automatic. On Forest Service land, travel management is not so cut and dried. It would depend on where the driver drove, and may even depend on the vehicle driven, because certain areas within the Forest allow off-road driving—and certain vehicles (snowmobiles only, for example)—while other areas prohibit all motor driven travel.

The contact point for people having trouble and needing help within a Park as opposed to having trouble in a Forest is quite different. Parks almost al-

ways have a hub—a park headquarters—and visitors are aware of personnel available at the location of these facilities because the visitor center and gift shops are located nearby. On the Forest, however, there is usually no visitor center, (nor is a Supervisor’s Office seen normally as a place of assistance) so a visitor will typically call directly to the local police, sheriff, or ambulance service for help. Responsibility for responding to those calls then follows a pattern: the Park Service follows up on its own calls for assistance, the Forest Service has not been called, so outside assistance responds.

Training at the higher levels of law enforcement is similar for both agencies. Law enforcement authority is granted to a Forest Service employee who successfully completes the nine week intensive training at the Federal Law Enforcement Training Center (FLETC), a course designed for all federal land management agencies. Permanent employees at the Park Service who want to be commissioned officers attend this same course. Both the Park Service and the Forest Service have an additional week of training focusing on their own rules and regulations. The Forest Service law enforcement officer usually then assumes the collateral duty as an LEO and will spend 20 percent or more of his or her time on law enforcement. Collateral duty law enforcement employees are common in the Forest Service, meaning that the employee’s primary job (forester, archaeologist) is still the major emphasis. At this level the LEO can make arrests, serve warrants, and carry firearms. They investigate petty offenses, misdemeanors, and also felony offenses. In Region Two, for example, there are 18 LEOs and three are women: Brenda Schultz’ duty is full time, Tracy Morse on the San Juan National Forest whose duty is collateral, and Dee Lehman-Wagstrom on the White River National Forest whose duty is also collateral.



Law enforcement work in both agencies has an ebb and flow according to the season, the location, the "personality" of the unit, and the natural resource to be protected. In the summer of 1989, LEOs on Schultz' Forest patrolled it for suspect marijuana plantations, generally working seven days a week. "We didn't have any luck finding plantations and no arrests were made. I think the word is out in this area that the Forest Service is patrolling and growers are aware of that. I would like to think they are no longer there because of our efforts in patrolling—and because of the several years of drought affecting the growers." At other times, Schultz works on wood products theft involving firewood, tree transplants, and Christmas trees. During hunting season she makes contacts with hunters and inspects outfitter/guide operations. Trying to build a case against an illegal outfitter often makes for a lengthy investigation.

Travel (vehicle) management is an issue that often confuses the public year around. "If an area is closed to a certain mode of travel, it has to be well signed on the ground. I want to make sure that the forest visitor understands that this particular mode of travel is not permitted in an area before I write a violation notice," Schultz noted.

Because she is a full time LEO she often investigates cases that involve large dollar amounts and those cases that will go to court. In one, she investigated a hunter who was angry over a wooded trail that the Forest Service had surveyed and staked for trail construction and reconstruction. The hunter incorrectly assumed that the Forest Service had surveyed the trail for a road. He removed most of the survey stakes and wrote a letter to the Forest Service voicing his opinion on road building practices. (This was Schultz' case: it went to court, the hunter pled guilty, he paid \$3,000 for the work to resurvey and restake the trail.)

Another interesting one—involving not much money, however—concerned a hangglider who had somehow gotten his harness tangled as he glided over the mountains near Telluride. In the mishap, he ignited a rescue flare and started a small fire costing the Forest Service \$800 to put out. After Schultz' work, he pled guilty and paid. In large wildfires it can cost hundreds of thousands of dollars to suppress, but once it is traced back to the individual who started the fire, he or she can be held responsible for those costs.

While in the Park Service, people problems required that she use her Emergency Medical Technician skills more. She recalls that one day she had two people die in her arms while on duty. "A man had just retired and he and his wife were boating. He had a heart attack, I was called in to perform CPR until the ambulance arrived. But he didn't make it." Shortly after that incident, she received a call that a tractor trailer had collided with a car on US Highway 50, a highway traversing the Park. Upon Schultz' arrival, the young driver of the car was still breathing, but

died before being transported.

Schultz does not feel that being a woman in a law enforcement job has been an issue for her. That feeling of security stems from the strength of her education, abilities, and experience. She earned a B.S. in Environmental Resources and an M.S. in Physical Geography from Eastern Kentucky University at Richmond. Throughout college Schultz was a member of the school's rifle team. When she attended FLETC, she shot 298 out of 300—and finished top of the class academically. To round out her resource education with law enforcement, she interned with the Metropolitan Police Department in Lexington, Kentucky. She also holds a private pilot's license.

Up until last year, Schultz did not have to consider juggling a marriage with the rest of her duties. Now a wife, she does. Her husband Chris works with the Colorado Division of Wildlife in the summer on the Peregrine Falcon Recovery Team, and in the fall is the Acting Director of the Cape May Bird Banding Project in New Jersey. He also makes a yearly trek to Greenland as a contractor with the Department of Defense doing Peregrine Falcon surveys. "We lead our own lives," she says, "and we don't see each other very much, but we both realized this situation before we got married." They both have jobs with an element of danger written into the job description. "Chris trusts my ability to handle myself. He understands that my job can be dangerous, but he knows I can recognize danger and act accordingly. I can't think of anything more dangerous than hanging off a 1,000 foot cliff banding birds which he does routinely. His job seems infinitely more dangerous."

Schultz reflects, "Professionalism within the law enforcement field—whether it is the Park Service or Forest Service—is directly related to being consistent and fair." She is not in this job to prosecute people, but rather, to protect our natural resources.

*Author's note: Since the submission of this article, Brenda Schultz has been promoted to full time Special Agent assigned to the Forest Service's West Zone in Region Two. She recently finished the eight-week Criminal Investigator Training Course at FLETC.

Author Sandy Thompson is the Federal Women's Program Manager for the Grand Mesa, Uncompahgre, and Gunnison National Forests. She is the Forest Service Representative in Lake City, Colorado and is Level II qualified.

How would you like to be head of BLMs law enforcement for the desert playground next door to Los Angeles?

Resource Protection, Realistic Style

Doran Sanchez

As the District Staff Ranger in Riverside, California, Felicia Probert is the Bureau of Land Management's "chief cop" in the California Desert District (CDD). She oversees the management of 50 Rangers and the law enforcement policies and operations for the millions of acres of public lands within the Desert District.

Rangers are professional natural resource protection officers with training and expertise in various resource fields. They have, as well, the effective skills of a trained Federal Law Enforcement Officer. For Probert and her Ranger staff, their goal is to assure voluntary compliance with federal laws and regulations regarding resource protection. Failing voluntary compliance, Rangers are prepared for most eventualities.

A relatively new BLM initiative, the Ranger force started in the Desert District with the passage in Congress of the Federal Land Policy and Management Act (FLPMA) which gave BLM its first law enforcement authority and mandate. The Act required the creation of the California Desert Conservation Area (CDCA)

and the establishment of a Uniformed Desert Ranger Force for the purpose of enforcing federal laws and regulations. Prior to that authority, BLM had maintained a visitor services presence, but concerns over excessive resource vandalism and theft in the Desert District during the 1960s and early 70s required more muscle. In 1978, the Rangers became that muscle with a force of 17.

The California Desert Conservation Area encompasses 25 million acres, of which 12.1 million are public lands. The California Desert District consists of the CDCA—plus all public

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lands outside the CDCA in Los Angeles, Riverside, Orange, and San Diego Counties—for a total 12.5 million acres. The District is then redivided into five Resource Areas: Ridgecrest, Barstow, Needles, Palm Springs-South Coast, and El Centro. Some of the world's great deserts—the Mojave, Sonoran, and a portion of the Great Basin—are found here. The deserts are treasure troves of cultural, historic, scenic, archaeological, scientific, recreational, and economic resources. BLMs other resource management responsibilities in the District include oversight on grazing, mining, energy development (wind, oil, gas, and geothermal), and utility rights of way. And, very importantly, the CDCA is next to Los Angeles, one of the largest metropolitan populations in the United States at 16 million.

The Rangers' responsibilities are divided into logical components: each Resource Area is divided into patrol sectors, and one Ranger is assigned to each with responsibility for about 300,000 acres—and they are considered the experts for that sector. Within some sectors are designated areas called "projects" which are related to off-highway vehicles. A separate juris-

isdiction is created for the projects and a Ranger assigned to each. The project and sector Rangers report to the Chief Area Ranger, and he or she reports directly to the Resource Area Manager who directs all Ranger activities. So while Probert is the chief among them, she does not supervise the Rangers directly. Probert herself is on the District Manager's staff and reports to the Assistant District Manager of Operations. In the Ranger hierarchy, California is the only state with a State Staff Ranger, who is a member of the Deputy



State Director for Resources staff and is responsible for Ranger initiatives statewide. The Washington Office Staff Ranger oversees and supports Ranger activities Bureauwide.

As administrator of the Rangers for the District, most of Probert's time is utilized in the day-to-day business of keeping the different programs on line, coordinating training classes, and working as the lead on multi-resource area projects. She also is a staff member for the District Manager. She oversees Ranger investigations of accidents, theft of materials (sand and gravel, vegetation, signs, cultural resources), vandalism, and damage to government property.

The workload ranges from the sublime to the scary. In California, when one speaks of vehicle accidents, it could involve an ultralight aircraft, gyrocopter, ATV, land sail vehicle, or the more common trucks and cars; Probert oversees investigations of them all. In a recent operation, California and Arizona BLM personnel collaborated to apprehend and convict two plant thieves. Another investigation revealed a contractor removing gravel from an area on public land, using it on his job site, then charging his client for it. In a drug case, the Rangers recently assisted the County Sheriff in the investigation and arrest of two men operating a methamphetamine lab in the desert. The men were armed with automatic weapons.

Probert is realistic about the dangers and because of that, she sees to it that each Ranger has the necessary equipment. In her jurisdiction, each Ranger maintains their own assigned vehicle—a 4-wheel drive truck or utility vehicle—because they patrol in single-person units. The rigs are equipped with basic tools and desert survival gear, a scanner, and a mobile radio to communicate with the constantly staffed inter-agency dispatch. Each Ranger carries a .357 Magnum hand gun, but the Bureau may change this issue to a 9mm semi-automatic in the near future. In addition, each rig carries a shotgun and Rangers will, in the future, be issued a long range rifle to more nearly match the weaponry of their adversaries. Probert pays attention to details too, she supervises all weapon repairs.

In addition to the gear and weapons carried in the rig, Probert believes that the best defense a Ranger can carry is the training and re-training the Bureau offers. The introduction begins with a nine and one-half week course at the Federal Law Enforcement Training Center in Glynco, Georgia offered to most land management agencies; these include BLM, National Park Service, Forest Service, and U.S. Fish and Wildlife Service personnel. Every year thereafter, Rangers receive an additional week's training covering legal revisions, defensive tactics, weapons qualifications, and other new developments. In the CDD, Rangers must qualify—or be relieved of field duties and law enforcement—with the .357 Magnum every three months with a qualified range instructor. Rangers receive a two-week course covering state laws on search and seizure, arrest, and firearms. And during

the course of several years, Rangers receive a myriad of other updates: tailgate training sessions on officer safety; videotape reenactments of actual officer-involved shooting incidents provided by other agencies; specific training for the Archaeological Resources Protection Act (ARPA) so that investigation, and prosecution of artifacts thieves will be successful; and Wildfire Investigation Training to prepare them to investigate and prosecute arson-related fires on public lands. Depending on their jurisdiction, cross training with other law enforcement agencies assumes great importance: the Drug Enforcement Agency, the Border Patrol, the California Highway Patrol, the local Sheriff's Office. Emergency Medical Technician reviews are important, too, because Rangers provide initial accident care and take the lead as technical advisors to plan and conduct search and rescue missions.

Because Rangers patrol in single person units and the nearest backup can be an hour away, Rangers now work closely with local sheriff's offices and sub-stations that also have deputies in remote locations to provide backup. Probert oversees agreements with Imperial, Riverside, San Diego, and San Bernardino Counties where, as she says: "Rangers on public lands have as much authority as a Deputy Sheriff to enforce all regulations, but we limit the enforcement of state laws to the protection of natural resources and visitor safety. It has to be land based and resource protection specific." Currently 15 Rangers are authorized to enforce state and local laws, and to her knowledge, the CDD is the only District in the state with County law enforcement agreements. "So one of my main goals as District Ranger is to provide the training, oversight, and direction to ensure the Rangers are getting the training they need—and to find out if they need more. Since we have the majority of the Bureau's Ranger positions here in the Desert District, as BLM expands the program throughout the nation, we are looked at as the proving ground for the program nationwide."

Among her many administrative duties, Probert is personally responsible for all investigations involving tort claims. "Anytime someone injures themselves or damages their property on public land and want compensation for those damages, I pull the facts together and forward them to the Solicitor's Office. If a claim is filed in court, I work directly with the U.S. Attorney's staff and provide any additional background information, videotapes, photographs, or records they may need. I represent the field arm for the U.S. Attorney."

Information gathering is also in her job description. She will be assisting in the installation of a prototype for an "Incident Reporting System," called LAWNET, developed by BLM in New Mexico, which will be tested in the CDD. The system will help collect data on the number, type, and location incidents occur—as well as data on the offender—into a master file. This will eventually become an interstate cross-reference communications system so BLM law enforcement personnel can collect and exchange information

via the computer. The data will point up problem areas and allow better allocations of Ranger time.

Probert prefers that Rangers have a college degree in some resource management field, (her own is a Bachelor's in Biology from the University of Pittsburgh), although some have degrees in history and geography. "You can teach and train an individual to be a law enforcement officer, but it is tough to teach them resource protection if they don't have the scientific background or appreciate what the resources are." The Ranger force hasn't attracted many women—only seven Bureauwide, three of those in the CDD. Probert notes: "We get very few applications from women and we can't hire them if they don't apply. Rangers are selected on the merit of their qualifications, nothing else."

The success of the Ranger initiative has not been missed by others in the Bureau; Rangers are now

found nationwide, growing from the initial 17 to an estimated 110. As other states get new Ranger positions, they recruit out of the Desert District because the Rangers in Probert's program are experienced, well trained, and have worked in an established program—the original. "There was a lot of resistance from old timers who thought it was unethical and immoral that BLM had people carrying guns on public lands in a law enforcement role and they sat back to see what would happen." But in truth, BLM was being realistic about protecting the CDD treasures for all present and future generations.

Doran Sanchez has been working in print journalism for 10 years: as an editor of three publications; reporting and interviewing; layout and design; photography; and public relations. Sanchez worked in Idaho on the 1989 fire season with the Forest Service and BLM, leading to a Public Affairs Specialist position at BLM's Desert District in Riverside.

MOUNTED PATROL IN BOSTON PARKS



Women play key hands-on roles in Boston parkland management. Seventy percent of the mounted Park Rangers are women. They patrol passive parklands and provide historic interpretation of Olmstead's Emerald Necklace. *Photo courtesy of Boston Parks and Recreation Department*

When do beginners patrolling alone get enough experience so that some of the adrenalin rush is appropriate to the situation?

Gaining on Experience

Marla Garr

I work in Recreation where much of my time is spent doing law enforcement activities. I do fee collections in our eight fee campgrounds and compliance checks. In preparation for the law enforcement end, our District Ranger, Elaine Zieroth, saw to it that I got 40 hours of Basic Law Enforcement training qualifying me to issue Federal Violation Notices (Level II). I've been doing this now for two years and expect to advance to either a full time Recreation Technician or Law Enforcement Officer for our District (Level IV). Since I don't work full time in law enforcement and it hasn't become routine for me yet, I find myself getting "up" for each patrol, operating with a little more caution, doing a little more thinking-through than those whose reactions are governed by a backlog of experience and review.

Firewood is big business here on the Tonasket Ranger District. We have fairly long winters, and most people use wood to heat their homes. Firewood sellers in the winter of 1989 had a lucrative business selling cords of tamarack or fir for \$60 to \$80 a cord. I worked weekend patrols as a Forest Officer, checking permits, informing woodcutters of road closures, and enforcing regulations on those who were cutting illegally.

One Sunday, while I was patrolling by myself, I had chosen the Burge Mountain area due to the large, accessible firewood cutting site, and the large closure area. The morning had been quiet and the several folks I stopped had been pleasant and legal. But someone had been taking out large diameter snags. According to Forest Service Policy in this District, it is illegal to cut down 12 inch or larger standing snags because these are left for wildlife habitat. I wanted to find these people, so I watched for larger than legal trees being taken out and for those wood cutters in out-of-the-way places.

On this occasion, I was taking spur roads into old logging units in my 2-wheel drive truck following fresh tracks as far as my vehicle would go. When it wouldn't go further, I shut off the engine and listened. I couldn't hear a saw running, nor could I see through the trees far enough. I did hear the chunk-chunk...chunk-chunk of firewood being pitched into a truck. I walked closer to see a flatbed being loaded by two men.

At this point, my inexperience comes to the fore, because I stood there a few moments considering my options. There was one other person out on patrols on this particular weekend, and she was "on the other side," about 100 miles away, too far for good radio contact, but still closer than the dispatcher, who was even further. So I lost the options for backup or radio checks. Option three would be to approach with the Forest Host "Ranger Jane" attitude while carefully getting their license plate number and description. Option four was the one I liked

least, but is the one I chose—approach with caution, but with the authority of a Forest Officer out to enforce the regulations. I could always leave if the situation looked or felt threatening. So I gathered my gear and gumption—which wasn't needed, as it turned out—and approached. They stopped loading, couldn't produce a permit, but did not seem to understand that I was issuing them a ticket. All the time I was talking to them, I kept wondering if they'd get mad and become threatening or just thumb their noses at me and walk away. In either case I had enough experience to know that I had to be able to react quickly. In fact, they turned out to be pleasant people—father and son—who finally understood the illegal aspects of what they were doing. I had them pack up and followed them out.

While nothing really happened, my body thought it might; it took half an hour before I was back to "normal" again. Being a woman in law enforcement is double trouble sometimes. You not only have to deal with folks who resent any authority (especially from women), but you also have to bear up to the less-than-respectful attitude of a population who want to trash your outdoor workplace. You have to be nice to folks who just messed on your outhouse floor or who woke up mean from a night of partying out in the "wilds" of your most popular campground.

Law enforcement for the Forest Service is a scrambled egg effect of "cop" and "host." In addition to the trashers, there are, on the other hand, the children who look at you as "the Ranger" and beam smiles as you walk by; there are the hikers who want to thank you personally for the great hike they took or the special bird or flower they saw. And there are the grateful ones who need a little help—like the motorists who get lost at Lost Lake. These kinds of people take no experience to appreciate or assist.

I'm still a greenhorn and I've made my share of mistakes in handling some situations. I haven't learned to moderate my adrenalin rushes, differentiating between just being prepared and getting ready for battle. But I will. My goal is to competently convey to visitors and permit holders a sense of fairness, friendliness, and security—so that law abiders feel there is a safe and fair place to recreate and work.



Marla Garr has worked her entire 35 years outdoors in and around Wenatchee, Washington. She currently lives on a farm with her husband and a collection of animals.

BUYING A VEHICLE: Read, Shop, and Haggle. Dealers See Women as "Easy."

I worked as a car salesman during one summer while a graduate student. This doesn't make me an expert, but I learned several things about buying and selling cars, and several things about how dealers have something of a sexist attitude toward women purchasers which I still see operating today.

Both men and women are at a disadvantage when buying a car. It is something that customers do once every few years; salesmen are doing it all day, every day.

Dealers have a package of tricks for all customers, with some held in reserve especially for women. The most common trick upon reaching an agreement on a purchase price, is to find that some "mistake" occurred as to the date or mileage of your trade-in. Another is to reach a deal only to have the "manager" weep and moan that money would be lost at such a price. You may find, for example, that an expensive premium sound system has been added to your order. In the excitement of taking possession, and amidst profuse apologies for the dealer's oversight, you may be "pressured" into accepting such a very expensive extra.

By the time a salesperson has your signature on a purchase order, the dealer assumes that you really want that car, and many dealers assume women will begin to form a special attachment to that particular vehicle, and boosting the price by a couple hundred dollars is just the cost of taking in a new family member.

I am not implying that all car dealers are evil or immoral; they have found a formula for success, and that formula is applied day in and day out. One dealer's formula is this: he makes a regular practice of test-driving trade-ins, and then losing the keys. To compensate you for his stupidity, he allows you to take your "new" car home, and bring it back next day when the lost keys are miraculously recovered.

Salespeople know that customers may need to be pushed just a little bit to make a decision as big as the purchase of a new vehicle. And there are dozens of

ruses similar to the lost key charade that are played out everyday in showrooms across the nation.

Buying used cars may be more economical, but the game is even more serious, because dealers often make more from used car sales than from their new cars. (Don't be surprised to find a trade-in of yours that was described by the dealer as ready for the scrap heap, only to be paraded on the front lot for a surprising price.) If you want to buy a used car, shop around, and find several cars that will satisfy your needs. Then, ask if you can take the car to an independent mechanic to check the car out. Engine compression, transmission, brake pads, muffler—all simple checks that will cost less than \$50. Go back to the dealer, agree on a purchase provided the work is done. And don't surrender the money to take title to the car until you are certain the work has been done.

I recently paid \$10 to a mechanic (whose services I have used several times) who found four items that needed replacement on a used vehicle I was interested in. My dealer agreed to make the repairs, but when I went to pick up the car, one item had not been repaired; it took less than an hour to take care of the problem, but if I had driven off, the repair would have been at my expense.

There are three basic rules for everybody who car shops. (1) Figure out what you really need. (2) Read *Consumer Reports* for an unbiased analysis of what various vehicles have to offer, and how their mechanical reliability is rated. If you are purchasing a new car, it is worth your effort to get a financial statement from *Consumer Reports* that details what a dealer really needs to sell that vehicle for. Banks will have the latest edition of the N.A.D.A. (National Automobile Dealers Association) "Blue Book," which will give you the most recent comparative prices. This gives you basic bargaining information; don't leave home without it. (3) Shop around. Don't settle too quickly on just one car or on just one dealer. Get quotations from two or more dealers; if a

salesperson knows you have shopped around, you may get a much better price to begin with. And don't be quick to sign on any deal. One of the oldest tricks is to say that "This car will be sold by tomorrow." Even if that is true, there are a remarkable number of very similar cars awaiting your attention.

There are three rules that apply especially to women. (1) If the dealership has a sales woman, try to deal with her. It may be sexism in reverse, but in my experience, women sales personnel have been much more "honest" in dealing with customers. (2) Spend some time reading car magazines. The purchase of a car is not only a big expense, you are also entrusting your life to the mechanical reliability and crash-worthiness of this vehicle. That is well worth the time spent in making some comparisons; it will also enable you to match wits with the salesperson who may try to impress you with car information that women are not expected to know. (3) Spend time discussing price and comparisons with other vehicles. Dealers try to get women discussing color and comfort. While these are important, you can make up your own mind about such issues.

Most dealers have sexist attitudes, and regard women as putty in their hands. Your best weapons are knowledge, and determination to "beat the dealer." You can do that if you will apply the six rules mentioned here, and think of a car purchase as a game that is to be played according to your rules, not those of a dealer who is determined to take advantage of you.

Gene Bammel regularly presents personal finance workshops, and is a Columnist for Women in Natural Resources. He is Department Head, Professor, and Forest Scientist in the Division of Forestry, West Virginia University.



We should honor our silent client, the land, from a position of empathy, not exploitation. If we truly appreciate the awe-inspiring order of ecological complexity, we will not continue to de-value the parts of nature's design which do not suit our acculturated taste.

Advocate for the Land

Ruth Parnall

Although sometimes the terms landscape architecture and landscape design are used interchangeably, a landscape architect is licensed, a landscape designer is not. In over 40 states a landscape architect must pass a three-day exam, testing knowledge and skills in areas including natural systems such as:

- hydrology, soils, and plant species identification
- technical procedures and calculations for construction
- design of outdoor spaces which accommodate various human uses
- familiarity with esthetic and ethical principles recognized in the field.

WHAT DOES A LANDSCAPE ARCHITECT DO?

Ask almost anyone in the general public that question, and you are likely to hear a generally held belief that we install lawns and give advice on how to grow roses. A few people might add that we decide where to plant shrubs and trees. Some park professionals might say that landscape architects do "visual assessment," evaluating views that appeal to park visitors. Almost everyone would probably classify landscape architecture as environmental art rather than environmental science.

I am outraged at the mainstream practitioners of landscape architecture, whom I believe are largely responsible for this misapprehension. Let me explain.

I have worked hard to get where I am today—registered landscape architect, principal of a small design firm with an ecological orientation, chair of my local conservation commission, adjunct teacher at a graduate school of landscape design, respected in the region for my environmental integrity. It took me twelve years out of high school as a secretary to decide that I wanted a career, not just a job. Add four years of professional education at the University of Illinois, then apprenticeship and registration and thirteen years of practice, struggling to become a designer not only with capability but also with conscience.

And I am angry that the majority of landscape architects have made this harder to achieve. They, themselves, have disavowed science for art and by deed, if not by word, perpetuate the notion that landscape architects are "exterior decorators." The leading professional journal proudly features monuments to the exotic, the geometric, the irrigated, the paved, the

extravagant. Its major advertisers are sellers of irrigation devices, herbicides and fertilizers, lawn materials and machines, gadgets and gewgaws. The articles rarely credit the natural site conditions before construction; they always glorify what has changed by design.

Mainstream landscape architecture as a profession claims no other connection to the land than technical skill to put human use on it with some amount of artistry. If the term stewardship is used at all, it is with the anthropocentric emphasis of caretaking of the natural landscape as a *visual* resource. Worse yet, some practitioners say the real work of landscape architects is an obvious rearrangement of the land—artful, tidy, and definitely human-made.

The problem is of course that beauty and esthetic qualities are subjective values. Individuals define beauty based on experience, education, and objectives. City dweller or suburbanite, ecologist or engineer, driver or walker—all will have differing opinions about beautiful landscapes and their value. Personal and cultural notions of beauty have consistently led most landscape architects to evaluate the natural landscape as "chaotic," as vegetation to be hauled away and ground to be flattened, so the true design work can begin, and beauty can be achieved.

Inherent in rationalizing land planning and design in terms of beauty, however, is the risk that the work is thought to be trivial, an optional nicety whose defense may sound absurd in the struggle to allocate project funds. Imagine promoting public spending on "scenic viewshed" preservation to a legislator whose constituency includes the homeless, or to a town council that has had to cut the budget for the police force. No wonder the profession feels itself to be overlooked in favor of architecture, civil engineering, landscape contracting, and fine art, all of which specialize in some part of its work. There is even a movement by architects and civil engineers in some states to support de-licensing landscape architects, the contention being that the profession has no particular impact on the health, safety, or welfare of the public.

It is because "beauty" and "visual resource" continue to be prominent words in our professional self-definition that landscape architects are often undervalued and misused as consultants. We have caused ourselves to be dispensable as purveyors of beauty. It is sad but predictable that a perennials subject at meet-

ings of landscape architects is "The Future of Our Profession," with the implication that there is none.

If landscape architecture is to survive as a profession, and if we practitioners care to make a difference in the world, we must use our knowledge of natural systems and design to *find* the human niches in the world, not to *make* them. This is not an entirely new concept in landscape architecture. It is not a matter of changing the professional curricula. It is simply a change in attitude and emphasis to that of *land advocacy*. Indeed, there has always been a small cadre of teachers and practitioners whose works reflect the values of land advocacy. What these people have shared is an attitude of partnership with nature rather than dominion over it, the intent that each client learn something about the natural world, and a belief in the necessity of limits to human growth and consumption.

WHAT LAND ADVOCACY ROLE CAN THE LANDSCAPE ARCHITECT HAVE?

We can be advocates of landscape not because it is our "viewshed" but our habitat, shared with other creatures, organisms and elements. With less attention to ornamental awareness and more to environmental awareness, we can understand, as do natural resource scientists, that nature does not put landscapes together for reasons of pattern, form, color, texture, and space. What we see is created by natural phenomena...forces acting upon materials to reach equilibrium. If we understand and truly appreciate the intricate and awe-inspiring order of ecological complexity, we will not continue to de-value the parts of nature's design which do not suit our acculturated taste.

We can take the opportunity every day to work on the reduction of environmental ills, such as global warming. Landscape architects are offered on every project the chance to prevent desertification and destruction of the ozone layer, to enhance migration of species northward, to purify and recharge groundwater, to preserve the gene pool of native species, and to improve habitat for more species than *homo sapiens*. This is the everyday stuff of site design and master planning—making choices about minimizing earthwork, saving existing trees and landforms, retaining runoff, mitigation of energy use, diversity and origin of plant selection. True, it is a tiny piece at a time, but it embodies the advice given long ago by environmental activist, Barry Commoner, to "think globally and act locally."

We can honor our silent client, the land, from a position of empathy, not exploitation. One's body of work becomes environmental education through design. There will still be opportunities for artistic self-expression, after we serve the needs of the land. We may still have "axial vistas," "ironic juxtaposition," and "landscape as extension of architecture," but only in places where forest needn't be cleared, mountains flattened, water pumped, fossil fuel consumed, nor snakes banished. As land advocates, we will come to believe that ecologically healthy designs are intrinsically beautiful.

Land advocates will be prepared to refuse work which may be deemed unconscionable, even if the proj-

ect will inevitably proceed. If an entire body of practitioners articulates the ecological equivalent of the moral high ground, eventually client consciousness will be raised. The fact is that if inquisitive minds approach the task, there are usually reasonable and economically viable alternatives to any environmentally destructive proposal.

Much of what may be considered unconscionable is also the backbone of the present-day financial alliance between landscape architects and the landscape industry—turf, irrigation, herbicides, tropical woods, exotic plants, unbridled earthmoving. It is really quite simple to design solutions which do not rely on high energy consumption, toxic ingredients, or water use. The difficulty lies in accepting the consequences of offending the very companies that support our profession with advertising, awards, and scholarships. Again, it is not a matter of complete renunciation by landscape architects but only a change in attitude which must gradually change the demand and therefore affect the supply.

WHAT CAN WOMEN BRING TO THIS CHANGING ROLE?

Once landscape architects themselves clearly define these values, the education of others...students, clients, related professionals...will fall into place. Women will have a special opportunity in this role, because they are entering the field in dramatic numbers. They are apt to be less entrenched in old arguments and preconceptions, and often they are well practiced at the delicate combination of nurturing and professionalism. True land advocacy requires that the presently accepted mindset of domination be replaced with an attitude of caretaking and humility.

Landscape architects are, to a great extent, generalists, because the field is profoundly interdisciplinary, integrating sciences, engineering, psychology, sociology, arts, communication, and ethics. However, no one of them...not technical nor artistic orientation, nor any other skill or expression...should dominate design practice. Rather, the needs of the land are most important. Becoming, then, a unique point of view in the development business, landscape architecture may find its niche as a voice for the health, safety, and welfare of the environment.

Ars Brevis
From *Grooks*
by Piet Hein
(MIT Press)

There is
one art,
no more,
no less:
to do
all things
with art-
lessness.

Ruth Parnall is a registered landscape architect and principal of her own design firm in rural western Massachusetts. She also teaches occasionally at the Conway School of Landscape Design and chairs the Conservation Commission in her town.

The personnel of the Corps have the same wide set of enforcement problems that other natural resource agencies have, but they have a much narrower set of response options. Their Rangers are comfortable with that. An astonishing number of visitors must agree.

Army Corps of Engineers: Visitor Assistance, No Force

Susan Shampine

ALL IN A RANGER'S DAY'S WORK

When Army Corps of Engineers Ranger Lanell Trower calls her base station at Ice Harbor Dam—near Pasco, Washington, on the lower Snake River—Bud Leonard responds to her call for an ambulance. In addition to operating the 678 megawatt powerplant and 100-foot lift navigation lock, one of Leonard's many other duties is to function as radio dispatcher for the Project. Dispatching emergency vehicles and other official traffic is no easy task.

"The Project" refers to a geographical area administered by the Ice Harbor-Lower Monumental Project of the U.S. Army Corps of Engineers comprised of approximately 20,000 acres strung out in a narrow band along 90 miles of Snake and Columbia River shoreline. The Project receives an annual visitation of 7.1 million visitor hours so medical emergencies are a fairly frequent occurrence. The Corps spends money on its facilities to draw visitors: slightly greater than \$1.8 million was expended in 1989 for the operation and maintenance of recreation and wildlife habitat management areas dotted along the two rivers.

Several bridges and two dams provide the only vehicular tie between the opposite sides of the two huge rivers. Despite the difficulties in getting around, an ambulance must respond to Charbonneau Park for a boating accident. Ranger Trower reports that a boater lost control of his vessel while traveling at a high rate of speed on Lake Sacajawea; his wife was thrown against the boat's windshield. The impact caused her sternum to separate—she was beginning to go into shock. Hearing Trower's request for an ambulance, Park Ranger Lynda Nutt responds. She is also an EMT and volunteer for the local fire department which operates the ambulance servicing the Corps of Engineers' Park. In the ambulance, Trower monitors the victim's blood pressure, pulse and respiration, then radios this information to the medical team at the hospital. Trower and Nutt are directed to start an IV solution and the victim's vital signs improve. Upon arrival at the hospital, the medical team takes over and the two Corps Rangers return to the Project.

HOW DID THE CORPS GET INTO PROVIDING RANGERS AND, FOR THAT MATTER, NATURAL RESOURCES MANAGEMENT?

The Corps of Engineer's involvement in water resources development dates back to 1824, when Congress authorized the snagging and clearing operations in the Ohio and Mississippi Rivers to provide for year-around navigation. This was added to its ongoing effort for maintenance of steamship harbors on the Great Lakes, building and maintaining lighthouses, and surveys for the early canals, roads, and railroads. By that time, the Corps was nearly 50 years old. Founded on June 16, 1775, the Corps' first mission was to design and construct military fortifications at Bunker Hill. Its role as the engineering arm of the military expanded quickly to include a number of civilian engineering roles. Commissioned as topographic engineers in the early 1800s, the Corps West Point graduates were tasked with surveying and exploring the expanding lands the United States bought, traded for, won in wars, or simply occupied. They were the first agency exploring the Grand Canyon, for example, looking for a rail or waterway. The Corps was also influential very early in recreation sites: in 1872 the Corps was charged with the management and protection of Yellowstone, the first National Park, until the creation of the National Park Service in 1916.

Throughout the 1920s and 30s, flood control activities were added to the Corps' mission. As should have been expected, an increasing number of major flood control lakes attracted visitors for recreational activities. Congress reacted, and began to include recreation, fish, and wildlife management among the purposes for authorizing the development of projects. The Flood Control Act of 1944 (58 Stat.889) gave the Corps specific authority to provide public outdoor recreation facilities. As visitation at Corps managed recreation areas increased during the 1940s through the 1960s, visitor safety and resource protection issues began to emerge. Increased visitation resulted in increased conflicts between recreationists and the resources. By the early 1970s, it became clear that the Corps needed to develop a comprehensive recreation program. The

Flood Control Act of 1970 amended the previous public law and provided that "all persons designated by the Chief of Engineers for that purpose shall have the authority to issue a citation for the regulations adopted by the Secretary of the Army, requiring the appearance of any person charged with the violation to appear before the United States Magistrate, within whose jurisdiction the water resource development project is located, for trial..."

This legislation formed the basis of the limited enforcement authority that Corps rangers have today. In 1971, an Engineer Regulation (ER 1130-2-400) established guidance for management of natural resources and outdoor recreation on public lands administered by the Corps, and ER 190-2-3 established the first major guidance for law enforcement at Corps projects.

HUGE NUMBER OF VISITORS

Today, about 80 percent of Corps lakes are within 50 miles of major metropolitan areas and 94 percent are within a two-hour drive of these areas. According to the National Park Service Publication *Federal Recreation Fee Report 1988*, the Corps hosts the second largest number of visitor hours among all Federal agencies. Over 30 percent of the recreational opportunities on Federal lands occur on Corps-managed lands, comprising less than two percent of the total Federal land base. As the largest provider of water-based recreation with more than 2.29 billion visitor hours recorded annually, the Corps manages 472 lakes and waterways reporting recreation use. It is estimated that 25 million individuals visit a Corps project at least once each year.

VISITOR ASSISTANCE PROGRAM

In the 1970s, a Visitor Assistance Task force made recommendations to carry the recreation program into the 1980s: (1) start a training program; (2) improve the appearance of citation officers; (3) encourage law enforcement contracts with local authorities; (4) provide good equipment and better identification of Corps personnel. Alternatives to a strong law enforcement posture were recommended such as improved facility designs and operational procedures, and the development of a standard resource management operational manual.

In 1979, the Corps issued Regulation No. 1130-2-420, Project Operation *Visitor Assistance Program* and began to act on the recommendations. An 80-hour course, taught by the University of Southern Mississippi as a contractor, indoctrinated park rangers and managers into the emerging Corps philosophy of low-key, low-profile law enforcement. This philosophy had two major historical roots. The first was that of the Bobbies of the British police, who frequently do not carry firearms. They strive to *prevent* crime and disorder as an alternative to *repressing* it. The second root traces to the principle of limiting the level of police

powers that the military has over civilians, i.e., the visiting public at Corps projects. Although Corps park rangers are civilian employees, ultimately they answer to a District Commander who is a commissioned officer in the U.S. Army.

TRAINING, EQUIPMENT, AND PROCEDURE

The training courses held in 1979 and 1980 included a one-hour session on *Women as Rangers*. It is interesting to note that the stated objectives of this session were to understand the primary reasons why women were seeking nontraditional roles, to develop an understanding of managerial roles in supervising women, and to study the "idea" of women as supervisors. Today, ten years later, my District, the Walla Walla District of the Corps, covering portions of the states of Washington, Idaho, Oregon, Wyoming, Utah, and Nevada is thinly covered by ten permanent rangers. Of those ten, five are women.

The Corps policy on law enforcement today is an update of the 1979 principle: In the acquisition of land for civilian works projects, the Corps obtains only proprietary jurisdiction, therefore it is the responsibility of states and their political subdivisions to enforce state and local laws. The Corps protects primarily the resource from the public: (1) Corps employees with citation authority cannot arrest, search, or seize, or carry weapons (including mace and nightsticks); (2) Citation personnel may stop, but not physically detain the public while enforcing Title 36 regulations; (3) Surveillance duties are recognized as an appropriate action in protecting the resources and ensuring public safety.

At the national level, the Corps offers to personnel a 40-hour basic training course on its visitor assistance program designed to develop an understanding of the formulation, purpose, and limitations. Personnel are encouraged to coordinate and maintain liaison with local and federal law enforcement, fire, and rescue agencies. For the past several years, the Corps has participated with the Park Service and the Fish and Wildlife Service in procuring uniforms—the result is a more consistent, professional appearance. The Corps equips employees appropriately with portable radios on the frequencies of local law enforcement agencies. While many ranger vehicles had light-bars or other emergency lighting in the past, the new program permits only a single removable warning light of a color approved by the state where the project is located. These vehicles may have a public address system and siren mounted under the hood. Vessels must have uniform markings, may have an inconspicuous warning light, PA system, and siren.

Verbal and written warning are preferred over the issuance of citations involving collateral forfeiture. The Corps tracks nationwide the ratio of written warnings to citations issued and prefers a ratio of no less than two to one—the lowest level of enforcement nec-

essary to correct a problem is implicit. Park managers and rangers are directed to "strive to be visible to the public, to be available to help and assist them, and to enforce Title 36, but not in a manner which portrays an aggressive law enforcement image."

RANGERS AT WORK

Debbie Hawkins (pictured below) works as a Ranger at the Mill Creek Lake Project on the outskirts of Walla Walla, Washington. She rides a mountain bike frequently, providing her with a very effective public relations tool and a less threatening access to the public. The benefits of the bike patrol were recognized by Phil Hixon, Resource Manager of the Lower Granite-Little Goose Project in Clarkston, Washington, who had initiated a bike patrol along the extensive urban levee system (at the confluence of the Snake and Clearwater Rivers) in Clarkston and its sister city across the Snake River, Lewiston, Idaho. Hixon has almost no snow in his low elevation "banana belt" jurisdiction, but Hawkins has been known to patrol her project—bordering the wheat fields of southeastern Washington—on cross-country skis in the winter. When asked what her tools of the trade consist of, Hawkins responds, "a badge and a smile." She pauses, then adds, "and a pen." When asked to comment about not being allowed to carry a firearm, she is more non-committal: "When you are out there alone and come upon a group of six scudge-balls littering the park with beer bottles and you know the nearest deputy sheriff is 20 miles away, you wish you had a gun. On the other hand, if you take a good look at the Corps' program, it really works. The number of Corps rangers injured or killed is very small compared to other law enforcement agencies with full authority and carrying firearms."

Located on the Washington-Oregon border near Umatilla, Oregon, the McNary (Dam) Project on the Columbia River is patrolled by Park Ranger Beth Peterson, a 1977 History graduate from Augustana College (Rock Island, Illinois). When asked if being a woman has any impact on her job she responds: "I learned the hard way. It took several years for me to develop a technique. I now feel a woman has to come on more assertive—not aggressive or strict, just firm.



But, there are many cases where a woman is perhaps more sensitive. I think, as a generalization, women are brought up to be better communicators."

Carol Hewes, now a Corps Ranger at Dworshak Dam near Orofino, Idaho, had worked earlier for the National Park Service, USDA, and the State of Florida Agricultural Research Center in Dade County. Prior to her assignment at Dworshak, she worked for 11 years as a Ranger with the Corps in Georgia, New Mexico, Kentucky, and Oregon. She says "In Kentucky, I had a reputation for being tough but fair. People may not like you for that, but they will respect you for it. Being direct is important. If they ask you a straight question, you should give them a straight answer. That's the way I try to deal with everybody."

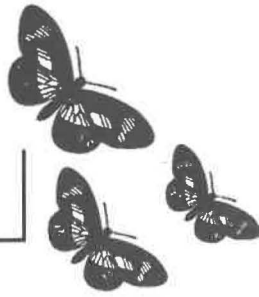
Water-based recreation is a common element at most Corps sites, requiring that Rangers know how to operate recreational vessels up to 26 feet in length. The Corps has recently added a week-long course on boat operation to the training program: vessel operation at high speed, rescue, maneuvering, emergency repairs afloat. Carol Hewes says that water-based enforcement—aside from the physical problems of maneuvering the boat and infirm footing—are the same as on land. It requires the same communication skills.

While Hewes is personally content not to carry a firearm, she volunteers that she can understand why some Rangers might feel uncomfortable with the Corps policy. "It is scary at a lake like Dworshak (Idaho) or Paintersville (Kentucky) with the expanding drug problem. You also have the potential to run into people at any time, any season, who are armed to the teeth. But personally, I just don't have the attitude to carry a sidearm. Now if I got shot at, I might change my attitude real fast."

The enormous complexity of law enforcement problems faced by Corps employees at their projects are the same ones troubling other natural resource agencies across the country. The urban setting of Lake Sidney Lanier on the edge of populous Atlanta poses for the Corps a different spectrum of challenges than those from the rustic Idaho mountains of the rural Dworshak Project. For the Corps, however, unlike other agencies moving toward more in-house muscle, the policy of a low-profile law enforcement posture utilizing improved facility operation and design, and an aggressive public education program, chart the direction of the ranger program into the 1990s.

Susan Shampine is currently on temporary assignment as the Resource Manager of the Corps' Ice Harbor-Lower Monumental Project. She worked for the National Park Service for three years, then began her career with the Corps in 1977 at Lake Ouachita, near Hot Springs, Arkansas, where she was responsible for the interpretive program. Shampine came to Ice Harbor in 1985 and is currently responsible for the operation and maintenance of the Project's parks and wildlife habitat management areas. Within her purview is the Corps' North Pacific Division Sign Shop which makes all signs for Corps areas in the northwest. Her Bachelor's is from Texas A & M in Recreation and Park Management.

RESEARCH IN PROGRESS



This issue, Research in Progress Editor, Jessie A. Micales, features the research of several of her colleagues at the Forest Service's Forest Products Laboratory (FPL).

The mission of the FPL (in Madison, Wisconsin) is to improve the use of wood through research that leads to improved management and use of the timber resource, thus meeting the needs of the United States and contributing to the international community. The laboratory currently employs 301 permanent people; women make up 33 percent of the workforce and 17 percent of the professional grades.



A STICKY SUBJECT

Linda Lorenz

About 70 percent of the wood products made today—particleboard, fiberboard, plywood, and other laminated veneer products—contain adhesives. Currently, petroleum and natural gas are the primary sources of raw materials for wood adhesives. In the future, these energy sources will diminish, and the forest products industry will need alternate sources for the continued manufacture of durable, bonded-wood products.

In the Wood Adhesives Science and Technology Research Unit, the use of renewable raw materials, or biomass, as sources of wood adhesives is being investigated. Three basic strategies are being pursued:

- partial replacement (20 to 50 percent) of petroleum materials used in conventional adhesives
- synthesis of totally new polymeric adhesive systems
- production of the raw materials currently used in adhesives from renewable resources instead of nonrenewable petrochemical sources.

I am currently researching the second option, new adhesive systems. One such compound that has shown promise is a diisocyanate made from furfural, a chemical that is already easily obtained from biomass. Tests of particleboard made from this diisocyanate have shown that it is comparable to the diisocyanates made from petrochemicals. The diisocyanate adhesives have comparable strength properties to the phenol-formaldehyde or urea-formaldehyde adhesives which are now used extensively, but they are somewhat more expensive. The diisocyanates were developed partly because they are not made with any formaldehyde and so there is no problem with formaldehyde emissions.

Future work will continue to evaluate these and similar products.

Linda Lorenz is a Chemist. Her Bachelor's is from the University of Wisconsin-Madison.

IDENTIFYING THE UNKNOWN

Donna Christensen

Scenario one: An old building is being remodeled. The building contractor needs to determine load-carrying capacity of the old support members. The first question that must be answered is "What kind of wood was used?" Scenario two: Negotiations are underway between an antique furniture dealer and a customer interested in purchasing a chest-of-drawers. Since the country of manufacture often greatly influences value, the customer needs to know what kind of wood was used in the chest to determine if the piece was made in the U.S. or Europe. Scenario three: A relatively new redwood picnic table has started to rot and a consumer wants to know if it was really made with naturally decay-resistant-redwood or some other non-decay-resistant wood painted red.

These are only three of the many reasons why hundreds of people throughout the U.S. write to me at The Center for Wood Anatomy each year. They need to have wood samples identified, and a good percentage of the reasons for the need are economic ones. During the past 15 years I have identified over 25,000 wood samples sent in by private companies, universities, attorneys, historians, archeologists, surveyors, government agency personnel of all kinds (including the White House staff), and private citizens. The identification process includes a microscopic analysis of the wood structure. In addition, we are often asked to provide general characteristics of the wood and information about the native range of the tree.

My second responsibility is to serve as the curator of the world's largest research wood collection, containing 110,000 specimens from trees native to six continents and dozens of countries. The specimens in the collection assist in wood identification—since it is necessary to have known samples with which unknown specimens can be com-

pared—and, the collection provides the material necessary for comprehensive studies in wood anatomy. Every year, visiting scientists come from all over the world to utilize the specimens and accompanying documentation.

Donna Christensen is a Botanist. Her degree is from Carthage College (Kenosha, Wisconsin), and her graduate work is from the University of Wisconsin-Madison.

A ROTTEN BUSINESS

Jessie Micales

The decomposition of wood by wood-decay fungi is an important ecological process in nature. Wood decay returns nutrients to the environment and helps to minimize the buildup of highly flammable debris on the forest floor. Unfortunately, the fungi which break down wood do not stay in the forest; they also attack the wood in our homes and other structures. In the past, wood decay was controlled by highly toxic wood preservatives, but many of these have been banned or their use restricted because of environmental concerns. Scientists are looking for a new generation of environmentally sound, biologically specific compounds which are toxic to wood-decay fungi, but which are not dangerous to other living organisms. By studying the basic biochemistry of these creatures, members of the Biodeterioration and Preservation of Wood Research Group hope to find unique physiological pathways which can be sabotaged, thus preventing wood decay.

One way to approach this problem is to study the physiology of a fungal isolate that has lost its ability to decay wood. Such an isolate was discovered in California on a piece of floor planking. If we could determine how this organism differs from its "normal" counterparts, we could learn which biochemical pathways are directly involved in the decay process.

At this stage of our work, we can say that it appears that this sickly isolate produces an abnormal hyphal sheath—a complex structure of carbohydrate, protein, and lipid—which usually covers the microscopic fungal strands (or "hyphae") as they grow throughout the wood. My colleagues and I are currently studying the structure and function of the hyphal sheath using chemical tests, immunological techniques, and scanning electron microscopy. We hope to define the role of the hyphal sheath in the wood-decay process, to learn how it is made, and to find some way to prevent its formation.

Jessie Micales's Ph.D. is in Plant Pathology from Virginia Polytechnic Institute and State University. She is Federal Women's Program Manager for the Forest Products Laboratory and is a Section Editor for this journal.



FORECASTING THE FUTURE

Irene Durbak

For the past nine years, I have been part of a group of research foresters and economists with a two-fold mission: (1) to determine national timber requirements needed to meet current and projected

demand for wood products, and (2) to evaluate the eco-

nomically feasible of new wood products and processes developed at the Laboratory. My work is related to the first mission.

In the last few years, our team research has focused on projecting requirements for pulpwood and recycled fiber in the U.S. and Canadian pulp and paper industry. We analyzed trends in production and consumption of major paper and board products, the conversion of wood and other fiber in the production process, and likely future developments in technology. We then developed an economic model that projects, over a 50-year period, regional production, fiber use, commodity prices, and the adoption of new technology in the industry. We used this model to analyze likely future scenarios affecting regional timber markets.

Our projections were incorporated into the Forest Service's national timber analysis, and the 1989 Renewable Resources Planning Act Assessment of U.S. forests and rangelands. The assessment, done every ten years and updated every five years, is used in developing the Forest Service's proposed program for managing our national forests in the decades ahead.

We are now preparing for the next assessment update. A major objective is to analyze the issue of recycling and increased use of wastepaper: what will be the impact on regional timber markets? To better answer this question, we have embarked on a revision of our economic model. My task, over the next year, is to develop a better methodology in our model for projecting U.S. trade in pulp and paper commodities with overseas markets. This involves studying the dynamic trends in exports and imports, and the effect of trade barriers, trade agreements, and exchange rates.

To better simulate the Canadian pulp and paper sector in our model, we are working cooperatively with researchers in the Economics Branch of Forestry Canada. They are also interested in developing and using such a model. Our work also involves us with professors in the Department of Forestry, University of Wisconsin-Madison, and the College of Forest Resources, University of Washington-Seattle. Various industry representatives provide valuable review comments and information, making the whole process one of cooperation.

Irene Durbak is a Research Forester with a Bachelors in Economics and a Master's in Forestry from the University of Illinois. Her Ph.D. work is in progress in Economics. She worked as a soil scientist for the SCS before coming to the Forest Products Laboratory.

PUBLICATIONS

Outdoor Equipment Review, a new outdoor magazine, is an outdoorsperson's version of *Consumer Reports*. It has no advertisers, so perhaps the reports are honest ones. One reviewer had expected another of the 50 clones of *Field & Stream: Backpacker, Canoe, Outside, Sporting Classics, Gray's Sporting Journal, Fur-Fish-Game, Wing & Shot, Gun Dog, Rod & Reel, Bassmaster, Bowhunter, Wild Sheep*—but was pleasantly surprised at its candor. Ron Spomer, an Idaho writer (who probably takes all those other magazines) was amazed that an outdoor magazine actually was going to tell the truth about such things as the myth of the \$500 modern, technologically superior "breathable" raingear. (It isn't.) OER is expensive, costs \$6 per copy for 24 pages, and can be ordered from PO Box 2076, Knoxville, Iowa 50138 (800-227-7585).

Audubon is publishing *Fight for Survival* (John Wiley 1990) which is about the global ecological crisis and is a companion to this year's eight Audubon television specials airing on PBS. The author is Roger DiSilvestro, Chief Staff Writer for the specials.

The National Council for Research on Women is soliciting entries for their Research-in-Progress Database on Women. They want books, working papers, surveys, data collections, and reports of innovative projects. Call the Council at 212-570-5004.

The Forest & Conservation History journal for January 1990 has three major articles on women who have influenced the course of natural resources in the United States. Write the Forest History Society at 701 Vickers Avenue, Durham, North Carolina 27701.

North Dakota's Governor's wife, Jane Sinner, has an interest in wildflowers and she has joined a group called North Dakota Goes Wild! to promote prairies

and the wild things that grow on them. The group has published a guide to the state's wildflowers and how to plant them. For information about the guide (and the group) write them at 1131 North 4th Street, Bismarck, North Dakota 58501.

Robert G. Bailey, with the encouragement of several international organizations and agencies has developed a new map to aid in assessing the effects of possible climate changes and air pollution on the resource base. His *Ecoregions of the Continents* shows the earth's land areas subdivided into regions within which local ecosystems recur throughout in a predictable fashion. By observing the behavior of the different systems within a region, it is possible to predict the behavior of an unvisited one. Hence the map can be used to spatially extend data obtained from limited sample sites. For copies, write Bailey at USDAFS, 3825 E. Mulberry Street, Fort Collins, Colorado 80524.

In The Female Advantage: Women's Ways of Leadership, Sally Helgesen argues that women should not scrap the values they were reared with to try and think and act like men in the workplace. Women took up golf and suppressed their emotions. And just like their male counterparts, they sacrificed their personal lives. Instead, women should focus on "the values that for too long have been dismissed as signs of weakness." They are: listening, teaching, favoring cooperation over competition, and encouraging subordinates rather than dominating them. Influenced by a 1973 landmark study by organization expert, Henry Mintzberg, who followed five male executives through their day, Helgesen observed the work habits of four women who already hold senior positions, writing down everything that happened to them from opening mail in the morning to meetings and telephone calls into the evening. In contrast to the traditional corpo-

rate "men of vision" who impose that vision from the top down, these women encourage creativity and downplay hierarchy—using structures that resemble a circle or web rather than a pyramid. They also make time to reflect, read, talk to their families, or simply rest during the day and encourage their staffs to do the same.

Andi Koonce is an associate editor for a new journal, titled the *International Journal of Wildland Fire*. Koonce is Project Leader for Prescribed Fire Research, at the Forest Service's Riverside Fire Lab. The editor is Ross W. Wein, University of Alberta, Canada. For those who are interested in subscribing or contributing, the journal will be refereed and focus on the science, management, and ecology of wildland fire.

Save Our Planet by Diane MacEachern (Dell Publishing Co., 1990) has good information in it. A sample: Of the billion pounds of pesticides used each year in the United States, less than one percent reaches a pest.

Waste management is on everyone's mind these days and beginning at the household level to manage it makes good sense. *Good Housekeeping* listed several useful publications they thought worthwhile: *Garbage* magazine, 435 Ninth Street, Brooklyn, New York 11215; *Complete Trash: The Best Way to Get Rid of Practically Everything Around the House* by Norm Crampton (M. Evans and Company \$8.95) offers tips on how to throw away trash with the least harmful effects on the environment; *Plagued by Packaging* concerns how to avoid over-packaged goods and can be had by sending \$4 to New York Public Interest Research Group, 9 Murray Street, New York 10007, Attention Publications; *State of the World* by Worldwatch is about what our world will look like in the 20th Century.

Women are slowly making their way to the top spots in natural resources law enforcement management.

Special Agent, USDAFS

Anne E. Minden

We got a late start the morning we began a marijuana garden surveillance on National Forest land. With three sheriff's deputies and all our gear inside my Nissan Pathfinder, it looked like we were going on a two-week camping trip. I really wanted to catch this guy, but figured we might be sitting around for days. I also knew we might never see the grower in there.

On the drive to the Siwash Creek area, we again went over our strategy. Since we could find no distinct paths around the garden, it would be anyone's guess as to how this guy might enter the patch. He (and we all assumed it would be a he) could park on the road and walk down the hill. The area was remote and no one but a Forest Service agent would think it odd to see a vehicle parked there. He could also park on private land and walk down the creek bottom, but that scenario seemed unlikely.

With my camcorder, I positioned myself as close to the plants as I could. I still felt somewhat exposed, but there were no better options. A deputy concealed himself up the hill and about 15 feet behind me. Two other deputies took positions above the access road. I spread out my camouflage tarp and got the camera gear ready.

As I pulled a sandwich out of my pack, one of the deputies positioned on the road radioed that a guy in a pickup just drove by. Then he told us he thought it stopped up the road. This was too good to be true.

About 20 minutes later, I spotted a bearded man hiking up the creek bottom. He then turned and walked up the hill towards me. My heart was pounding because I thought he would walk on top of me—or at the very least, see me. I put the video camera down and crouched closer to a stump. My head-to-toe camouflage gear would certainly be put to the test. He passed me though, and headed directly into the marijuana garden and stayed about 20 minutes, pruning several plants. On his way out of the patch, we arrested him. A short time later, he said, "I just started doing this and I thought maybe I should stop, but I was doing it so I just kept on."

Prior to his trial, his defense attorney told me that the defendant is a Zen Buddhist, and was in the mari-

juana garden praying. She said the 9-11 foot tall plants weren't his. She also said they were so beautiful, it was his favorite meditation spot in the woods. I don't think the jury believed this story. On November 28, 1989, Michael Vincent Villardi was convicted in Federal District Court. He was sentenced to a mere 30 days in jail. His conviction is currently in the Ninth Circuit Court of Appeals.

When friends and acquaintances learn of events like this in my life, they often ask me why I ended up in law enforcement, especially with the Forest Service. My interest began in 1984 while working as a temporary recreation technician on the Ochoco National Forest in central Oregon. Few employees took an active interest in human-caused resource abuses. Thinking back to that situation I now believe that it wasn't that employees didn't care, they just seemed uncomfortable dealing with the public in what they perceived to be a totally negative situation. For me, however, I saw then, and see now, the need to educate people about how to visit and use their National Forest with a minimum amount of environmental impact. Law enforcement is not generally thought of as an educational tool, but in fact it is. My guess is that Villardi, for example, will have his religious experiences elsewhere; he learned something.

In the Fall of 1985, still working in recreation (and extremely tired of being a temporary), I applied for and got a criminal investigator co-op position. I went to school and worked for the Forest Service in the prescribed fashion, spending some quarters on campus and others working in various programs on the Ochoco Forest. I finished my Bachelor's in Administration of Justice at Portland State University and was hired July 1987 to work as a special agent on the Okanogan National Forest in north central Washington, not too far from the Canadian border. Even though my degree made getting the job possible—and advanced my criminal justice knowledge—I, like all rookie special agents, was required to attend the Criminal Investigator school at the Federal Law Enforcement Training Center (FLETC) in Glynco, Georgia, so I left the next month to begin.

FLETC provides training to 64 federal law enforce-

ment agencies, including the Secret Service, the U.S. Marshall's Service, U.S. Customs and every other federal agency with law enforcement personnel except the FBI and DEA. At any given time during the eight-week-long courses, there are approximately 1800 students in attendance, 20 percent of whom are women. This percentage was not always so high.

My Criminal Investigator class was made up mostly of special agents from the Naval Investigative Service (NIS). The class had been in special NIS training for three days prior to my arrival. When I walked into the classroom after my uniform was issued (called Smurf Suits by most FLETC students) there was a sea of navy blue uniforms. I was relieved to see that about a quarter of the class consisted of women. The instructor was puzzled by my light blue shirt, as opposed to the other 46 who were wearing navy, and by my name tag. Below my name it read "FSUSDA." He said, "Let's see, FSUSDA...that must stand for Florida...state...something!" That was the beginning of two month's worth of affectionately delivered tree cop and pine pig jokes.

We learned about search and seizure, evidence, arrest techniques, firearms, handcuffing, defensive tactics, surveillance, report writing, interviewing, search warrants, and numerous other subjects. One of the more interesting experiences was learning about crowd control and having to take off a gas mask in a small room filled with a tear gas-type chemical agent.

This course sits near or at the top of the pyramid of the various levels of law enforcement training. At the lower level, there is the Basic Eight Hour Law Enforcement Orientation. Next is the 40 Hour course which teaches personnel how to recognize violations and take appropriate action. With this level of training employees with the Forest Service can issue violation notices and written warnings, but do not make arrests or carry weapons. Next up the pyramid is the nine-week Basic Police Training for Land Management Agencies held at FLETC. This training qualifies *permanent* Forest Service employees to perform armed law enforcement officer (LEO) duties. An LEO functions as a patrol officer in a marked Forest Service vehicle. (The USDI Park Service often hires armed *temporary* law enforcement employees, but the Forest Service does not—and there are other policy differences in other federal natural resources agencies.) And then, next up at the highest level, is the program where they train special agents at FLETC, the Criminal Investigator School I have already described. We are mostly plain clothed, conduct criminal investigations primarily, and perform program management duties.

When I finished my course at FLETC, I returned to work where a variety of law enforcement duties awaited due to the variety of visitors and users. Comprised of approximately 1,700,000 acres, the Okanogon Forest includes the Pasayten and Lake Chelan-Sawtooth wildernesses. Vegetation in the Forest var-

ies with grass and shrubs in the lowest elevations near the Columbia River, ponderosa pine in the mid-elevations, and Douglas fir in the Cascade Mountains. There is a relatively small timber base; the new Forest Plan says that 63 million board feet will be offered for sale annually. The Okanogon has many small campgrounds and some 1600 miles of mountain trails. Okanogon County has become a major cross-country skiing and snowmobiling center. Over 150 kilometers of ski trails in the Methow Valley—used heavily by Seattle skiers—have been developed and are maintained each winter. We have the usual (and not-so-usual) number of special interest groups who also are interested in the Forest: political far righters, radical environmental groups, frustrated loggers, big timber interests, hunters, and back-to-the-land types.

Each District Ranger requested patrols on his or her District three days per week. Clearly, I needed to prioritize my time because I not only reported to my supervisor, but also to three District law enforcement coordinators and three Rangers. Because I was the first full time agent assigned to the Okanogon, my job description was not understood. In the beginning, I had to explain to various people the difference between what a special agent does and what a law enforcement officer does. I didn't want to appear unwilling to get out and do a job that needed to be done, but the Forest needed a program and not just one person out there patrolling.

As I saw it, the program had to have one basic underlying principle: with *one* of me, (plus a very helpful zone agent on a neighboring Forest) and well over a million acres, *all* of the Forest Service personnel were going to have to become interested and aware of law enforcement. It's like a fire situation, where everyone is expected to get involved, because our first responsibility is to the land that we manage.

Unfortunately, as I noted earlier, law enforcement has often carried with it a negative image and some of our own employees perceive it more negatively than the public who either comply with or violate our regulations. These Forest Service people find it uncomfortable to imagine Smokey Bear, Woodsy Owl, the Good Host program and law enforcement to be compatible. I always tell our people in regard to wood permits: "We are being a Good Host to everyone who buys firewood permits if we cite those who cut firewood without permits." I also tell employees that law enforcement is not always negative—especially when we recognize educational values. During the spring and summer, I find myself assisting our employees on the weekends to help them feel more comfortable with public contacts and writing violation notices.

Like most professionals in natural resources work, the seasons dictate where the large percentages of my time will be spent. In the summer, I do timber theft investigations, deal with illegal outfitter-guides, keep tabs on radical environmental activity, and do accident investigations. As the summer wears on, I get in-

involved with marijuana garden surveillance, fire restrictions, and fire investigations. Fall brings numerous hunters onto the Okanogan, and I assist the Districts with road closure problems and illegal activity related to hunting. For example, we located an illegal cabin on the Forest and were able to cite the four hunters who were responsible for building it. Winter brings more timber investigations, training, and time to organize for the coming season.

Year around, I conduct internal and personnel investigations—such as sexual harassment—fortunately on Forests other than my own. Sometimes management prefers to have a female agent working with the team on certain cases. These kinds of investigations are not a duty most Forest Service agents enjoy because we are viewed as head-hunters. Currently, in Region Six encompassing Oregon and Washington, personnel officers also conduct internal investigations where there is no potential for criminal charges. If criminal charges are likely, then we might be called in if the Forest Supervisor or other managers think it is necessary. I also administer cooperative agreements with the sheriff's office, analyze reports from the law enforcement computer programs, write law enforcement guides to assist employees to deal with suspected violators, and get involved with budgeting, writing, and updating the Forest Law Enforcement Plan.

Almost every week of the year brings some cooperative work with another agency and these contacts are important to my effectiveness. Whether it's working with the sheriff's office on marijuana eradication, or with the Washington Department of Wildlife on a joint patrol effort, a willingness to share information and work with other agencies has definitely helped me as a law enforcement professional. In addition, I completed a reserve police academy course and currently volunteer about 20 hours a month as a reserve police officer for the city of Omak, Washington. This widens the law enforcement network for me, and provides personal satisfaction and training.



How does the public view a woman in Forest Service law enforcement? One individual I was interviewing regarding a campfire that had gotten out of control said "Isn't a young thing like you scared being out here in the middle of nowhere like this?" I told him that I'm careful, and for some reason I *had* been unusually careful in my dealings with this man. He was quick to point out "That 9mm at your side doesn't hurt either." Because of my remote location, I had been unable to reach a dispatcher to check addresses and warrants; I later discovered an outstanding felony warrant. I was glad to have been wearing a visible weapon and I was glad I had been more verbally assertive than usual in the way I dealt with him. He, nevertheless, viewed me differently—probably as less of a threat to him, which was to my advantage.

From these and other dealings with the public, I have decided that no matter how professionally you present yourself, you will still be treated differently than if you were a man. I also decided that it really doesn't matter and that I was not going to worry about it. As for my male peers, they are generally supportive; only a few seem resentful of the intrusion into sacred male domains. At times, it appears that if you are a good shot or can throw someone on the mat during defensive tactics practice, that is the first hurdle to being accepted among male peers.

One interesting and somewhat unique problem for women agents is what to wear to work. And it is a curious corollary that other professionals routinely feel free to offer comments about the suitability of female attire. During a discussion of a marijuana garden surveillance with one assistant U.S. attorney, (I was at the time wearing a skirt and heels), he asked me if I intended to change my clothes for the operation! On another occasion, at a yearly agent/LEO workshop, I dressed casually and was told by a supportive colleague to dress more professionally. When I commented that very few other people at the workshop were dressed up, and he himself was wearing Levi cords, he said, "It's a double standard, but it makes a difference in how the older male agents view you."

A few months ago, I was looking through some boxes of old school papers, and I found one I had written in eighth grade regarding what I wanted to do when I grew up. I can't figure out why I saved it, but I was floored when I realized it was entitled "Park Ranger." Fourteen years ago I didn't know the difference between a park ranger and a Forest Service special agent, but it was clear I was on the right track. Now, as one of approximately 200 Forest Service agents across the United States, I can't think of any other job I would rather have.

One of Anne E. Minden's Bachelor's is a double major in Resource Recreation and Sociology from Oregon State University. She also has a Bachelor's in Administration of Justice from Portland State University.

Kris Johnson of the Blue Ridge Parkway

Ted Olson

It's eight o'clock—there's just enough light to see. National Park Service Ranger Kris Johnson steps from the warmth of her wood-heated house into the October morning chill, her official "Smokey-the-Bear" hat in one hand, a thermos of hot tea in the other. I offer to hold the thermos so she can open the trunk of her patrol car to check on her equipment: first aid kit, blankets, shovel, fire ax, a box of maps and brochures. Her most essential tool, the two-way radio, is carried up front. She clicks it on, starts the engine. While it warms up, she grabs the scraper and removes the graffiti-like frost from the windshield; when finished, we accelerate from her hidden driveway onto the Blue Ridge Parkway access road. Aster and goldenrod, bent overnight by frost, are beginning to stand up again.

Although I am quite familiar with this rugged section of western North Carolina, having worked as a seasonal Blue Ridge Parkway Ranger myself for several summers, I have never really seen it from the vantage point of a patrol car. I led nature walks and gave campfire talks and paid little attention to what the Parkway's permanent Rangers did on the job. I had, however, read several articles that described the Parkway's unique "generalist ranger" concept—that each of the Parkway's full-time Rangers should be able to competently perform interpretation, law enforcement, and resource management. Kris Johnson is one of two women on the 30-Ranger force.

Before we even reach the Parkway, a man steps out of a sports car to flag us down. He must have seen the distinctive green stripe on the car's side or the blue

emergency light on top. Kris stops, and guesses the man must be cold, unsuitably dressed as he is in cotton clothes. As he approaches, she rolls down the window to hear him above the idling motor.

"Could you please tell me where that road goes," he asks drowsily, pointing toward the nearby state highway intersecting under the Parkway.

"Morning," Kris replies. "You're almost to Maggie Valley. Just get off here and take a right onto Highway 19, and head down the mountain. It'll be about three or four miles into the main part of town. You looking for breakfast or something?"

"No, propane. We ran out of fuel last night."

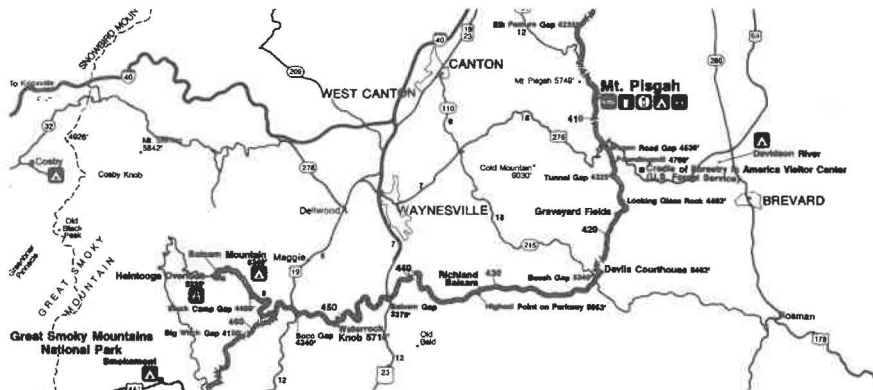
"Were you at Balsam Mountain Campground?"

"Yeah."

"I bet it was cold up there." She laughs sympathetically. The man thanks her, hurries back to his car, then drives away to warmer climes.

In my summers here, I remember hearing many Parkway visitors speak appreciatively of Kris's patient and friendly assistance; many said they were surprised that a gun-carrying ranger could be firm and yet so approachable. I see that they are right: her presence immediately puts a stranger at ease.

Our patrol this morning will follow the sharply-winding 15-mile stretch of the Parkway that extends from Soco Gap to the Oconaluftee River. We will assist motorists whenever necessary, and bring back to the ranger station the traffic counter readings (which indicate the number of Parkway visitors—and are used for funding purposes). We will be traveling on the edge of the Great Smoky Mountains, on one of the world's



most acclaimed roads, thought by many to be a masterpiece of engineering. The Blue Ridge Parkway showcases, according to one brochure, "the rural character and the natural beauty of southern Appalachia" and attracts several million visitors each year.

As the patrol car starts climbing the steep slope just past Soco Gap, I ask Kris if, in her experience, visitors stereotype Rangers. She explains that many people, when they think of a Park Ranger, think of fireside chats at campgrounds like the ones I used to give at Mount Pisgah Campground. For her, however, this is only a small part of the job. In addition to highly-visible educational programs like the campfire programs, Kris is responsible for law enforcement, resource management, public relations, and search-and-rescue operations. She also must work overtime to administer first aid to accident victims. She performs certain maintenance chores, like picking up litter at overlooks and on trails. Kris explains that The Parkway's return to the generalist Ranger was an intentional reaction to the trend toward the specialization found at other parks nationally. Permanent Rangers on the Parkway must be very adaptable and must master many skills to get themselves and others out of predicaments. They should enjoy the challenges of such diverse duties if they want to stay with the job.

One morning several months earlier, while on patrol, Kris said she noticed someone lying down next to the sign at the first overlook. "I thought it was someone who had gotten drunk through the night and was just sleeping it off. I informed the Parkway dispatcher by radio that I was going to check. When I got there, I saw it was a woman and she'd slashed her wrists. It was horrible." After calling the dispatcher again for the local rescue squad, Kris applied first aid. "In my haste to help her, I didn't think to use rubber gloves. I've got half a dozen pairs with me, but I didn't even think about AIDS. I used a gauze pad and applied direct pressure. By this time, the bleeding had slowed, and though it was June, she was cold because it had been down into the 30's overnight. I covered her and treated her for shock. She was unconscious, but had a good pulse and was breathing OK."

This particular woman had no identification on her. When she became conscious at the Haywood County Hospital, she was too upset to talk; so Kris set

out to identify her with only a wrist watch for a clue. An observant Parkway maintenance worker recalled seeing a "strange woman" flailing her arms at an overlook several days earlier; he also noted that the woman had a white car with a Colorado license plate. Because the wrist watch was set two hours behind North Carolina time—possibly Colorado time—Kris assumed it was more than coincidence and put out an all agency alert for the car. Within a few days, a Cherokee logger reported to a Tribal Police officer he had found the car on Cherokee land not far from the Parkway. Kris "ran" the tag, found the owner of the car to be, it turned out, the woman's sister, who was much relieved that "Mary" was still alive.

Ahead, a large RV is blocking access to an overlook. A gray-haired man flags us down. At first, she thinks he has a problem; but soon it is clear by his grin that he mostly wants to talk. "It looks like we're kind of early for all those pretty leaves." The man's accent suggests he is from Alabama; his license plate confirms it. Kris replies, "No, not really, if you drive up high enough. How far are you planning on going?"

"We're thinking about going all the way to Shenandoah."

"Well, I'm sure you'll see lots of leaves."

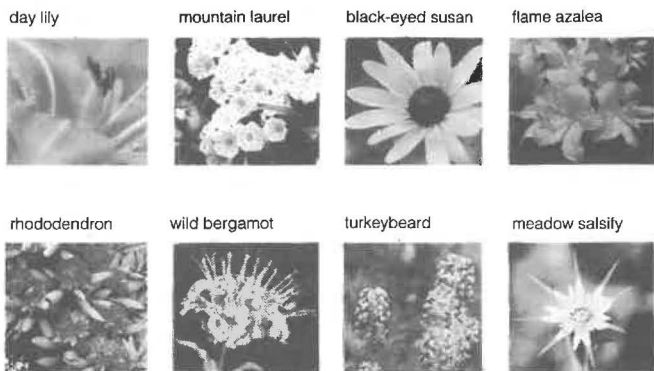
"We went as far as Roanoke, Virginia, last year—about this time. They're coloring late this year, huh?"

"Just a bit, but once you get on up there...do you have a Parkway map? I can show you some good places to look."

At another overlook, several women gather and ask in unison, "What killed the trees?" They are referring to an accidentally introduced insect, the Balsam Woolly Aphid, which has been infesting Fraser Fir trees along the Parkway the past 20 years. Kris has researched this ecological tragedy extensively, but she explains it in lay terms. "If you can answer a question they've already been asking, then you're assured success. You can just tell when you've captured their interest and made their park experience more meaningful." Kris claims though, that her favorite audiences are children: "I think it's very important to get children interested at a young age in nature and in protecting resources."

She notes that visitors generally have a positive image of Park Rangers. "Most people are grateful for any assistance you can give them. We as Rangers are able to find someone who can help them, whether it's identifying an odd plant or getting their car fixed; we're the first link." Negative attitudes toward Rangers are fairly unusual, she says, but they do occur: for some people, "Nothing you can do is enough—they want you to personally fix their car."

Several miles further, Kris stops to inspect a car parked at an overlook. There is heavy frost on the windshield. Four people are sleeping inside. She approaches and raps gently on the passenger door. An unshaven man rolls down the window. Kris asks, "You all OK?"



"Oh yeah, we were just taking a nap," the man replies lethargically, his voice trailing off.

"How long have you been here?"

"Oh, since about six o'clock this morning."

"You were driving and got tired?"

"Oh yeah," he replies defensively.

"I need to tell you you aren't supposed to be sleeping in the overlooks; so now that it's daytime, you'll need to be getting along." As the man cranks the motor, a woman inside says something unintelligible. Kris bends over, determines the question, and answers: "You're almost to the town of Cherokee, just a couple miles down the mountain. You can get breakfast there."

Kris steps back into the patrol car, and says with a sigh, "They were just four tired people...but you never know what you're going to find when you go up to a car."

After recording the appropriate information from the traffic counters at the Parkway entrance ramp near the Oconaluftee River, Kris heads back up the mountain. Above the purring of the well-tuned engine, a comforting voice on the two-way radio offers the morning weather report.

Kris spots a familiar car on the grassy shoulder of the Parkway. "I know this guy—he hunts for mushrooms. He's a Cherokee, and this time of year there are certain mushrooms the Cherokee really enjoy. Normally, you see a car parked way off the Parkway and you think someone's out digging ginseng, or out drinking in the woods, or there's some other problem. So one day I stopped and ran the tag, and as I was sitting there, he came out and told me what he was doing. He was looking for 'wishies'—a coral fungus, kind of beige in color, that come up in clumps. He was ecstatic the way the wishies were growing."

On the Blue Ridge Parkway, mushrooms, fruits, and nuts can be picked for personal consumption only, but all other harvesting of plants or animals is forbidden. Her commitment to resource protection sometimes puts her in potentially volatile predicaments. She describes a common confrontation: "It's usually the wife who has the big bouquet of flowers, with a branch of mountain ash berries. Since she's the one holding them, she's the one I address my comments to. Her husband gets all puffed up: 'How can you pick on my wife? How can you do this?'"



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Yet Kris maintains that she often hears tourists comment, "You have a great job—I wish I had a job like yours." These same people might reconsider if they spent time in her shoes: driving all day in difficult conditions; encountering potentially dangerous situations; and hearing the same questions, comments, and conversations over and over again.... Yet Kris politely tolerates and often enjoys the people she meets on the Parkway.

She initially did not consider rangers as a possibility for a career—even though her father worked for the Forest Service while she was in high school. She studied philosophy and forestry at the University of Tennessee, then worked on forest pests in a research laboratory, alone much of the time, travelling frequently. After several years of this, as she puts it, she "couldn't see much direct result." About this time, the National Park Service, like society in general, was recognizing discrimination and opening up its ranks to women and minorities. Kris was hired as a summer interpreter at Chickamauga National Battlefield, which eventually developed into a permanent position in law enforcement.

The sun is now brilliant, and the clear chilly air is a pleasure to breathe. Kris saunters into the ranger station at Balsam Gap, crisp leaves crunching underfoot. She hands the traffic counter numbers to a colleague, listens to a few jokes, then returns to her patrol car and the Blue Ridge Parkway. She does have some paperwork to take care of, but that can wait until tomorrow. Hers is not a desk job.

Tod Olson is a graduate student in English and a writing instructor at the University of Kentucky. He has worked as a naturalist and as a National Park Service Ranger. For the past several summers, he has worked for the Blue Ridge Parkway at the Balsam Gap Ranger Station.

New Mexico's Department of Game and Fish provides a variety of enforcement duties for their District Wildlife Officers. Keeping up with changing regulations, the coal companies and wily anglers are all in a day's work.

To Win a Few Rounds for Wildlife and Fish

Kathy Espey McKim

I am a District Wildlife Conservation officer for the New Mexico Department of Game and Fish. My job is multi-faceted. I monitor the resources in my region, conduct wildlife surveys, oversee projects relating to fish and game, cite hunters and anglers who violate our state laws, and attempt to control the habitat-damaging practices of coal companies. What attracted me to the job was the wildlife and the outdoor nature of the work.

There are 99 total commissioned officers in the department. Of the 99, six are women. There are 57 district wildlife officers: three are women. The other three are biologists (two game, and one bird biologist).

My district, called the Navajo Dam District, some 40 miles northeast of Farmington in the Four Corners area, covers approximately 575 square miles—small by New Mexico standards. This district is, however, one of the state's most important regions for fisheries and wildlife resources. Most of the district is a semi-arid vegetation type leading into a pinyon-juniper woodland in the higher elevations. In the eastern part—toward the Jicarilla Division of the Carson National Forest—the vegetation is predominantly ponderosa pine woodland. In addition to our Department, the Forest Service and BLM administer large parcels of the area's land.

People from all over the United States come to use the resources of my district: hunting deer from the migratory herd from Colorado (it is one of the three most heavily hunted areas in the state for mule deer), and fishing on the San Juan River. Others hunt elk, mountain lion, doves, ducks, geese. The region is also well represented by animals which are not hunted such as bear, turkey, and squirrel. Visitors come to camp, hike, cut wood, picnic, and photograph the wildlife.

On the northwestern boundary is Navajo Lake (one of the state's largest lakes) and the San Juan River. This river is rated by the sports fishing industry as one of the top ten western trout streams in the United States. The Lake annually sponsors a bass fishing tournament which attracts a large influx of tourists and participants; in the fall and early winter, anglers fish for Kokanee salmon.



My primary duty in the spring and summer is checking anglers for fishing licenses and other violations on the San Juan River and Navajo Lake. The river demands a lot of my time because of the special

stipulations for fishing the "quality waters." In 1966, the New Mexico State Game Commission began a program that we refer to as the "quality trout waters." The regulations determined that an angler could only use artificial flies or lures—with a bag limit of six fish, which must be 12 inches or better—on a one-mile stretch of water. Since 1966, the regulations have been changed by the State Game Commission four times. Current ones stipulate that the 3.75 miles downstream from Navajo Dam is quality water in which a fisherman can use only flies and artificial lures bearing one barbless single hook. The daily bag limit is now one fish over 20 inches. The possession limit, which refers to the aggregate fishing catch, is two fish 20 inches or larger.

Even with these very strict regulations—and the fact that it applies to two-thirds of the river—the San Juan is very popular; studies show that it has approximately 100,000 angler days a year. The remainder of the river is regular bait waters allowing anglers more freedom in what they use to catch fish. As you would guess, because of the regulations, there are more violations in quality than in bait waters because residents and non-residents alike assert that fish taste better if caught on bait. Some ways violators circumvent the fishing laws are to sneak illegal fish out of the river in their waders or bait hooks with "lunch"—cheese sandwiches—or concealed salmon eggs.

The largest part of my job is law enforcement. My work load varies seasonally, but typically I include hunter patrol, trapper checks, animal depredation, angler patrol, false residency checks, poaching, multiple licenses, and following up on complaints about possible violations. Throughout the year I respond when hurt animals are found: bears, badgers, raccoons, hawks, goslings, baby song birds and other animals that concerned citizens pick up. Some of these animals are

sent to rehabilitation centers, others are put down.

Because our districts are large, my nearest backup officer may be two to four hours away depending on road conditions. Radio communications are sometimes marginal because of the deep canyons in which we often work. In four years of service I have been fortunate not to have been confronted physically; I am, however, often verbally assaulted. I do have backup in an authoritarian sense, I suppose, because according to New Mexico statute, game wardens/district officers have full police powers under emergency circumstances. Consequently, we can enforce all of New Mexico's laws when necessary.

Since we patrol alone, and because many of the people with whom we deal are armed, extensive training in self reliance and handling crisis situations is necessary. We go as rookies to the Game Department's training school, and also to the New Mexico Law Enforcement Academy. In the first we focus on law enforcement, animal depredation, public relations, fish management, and game management. In the second, we learn the same things a state, city, or county police officer does.

Presently, I am working with another district officer in the Department on a regulation which would permit district officers to have trained and certified canines with them on duty. Several states that border New Mexico have dogs trained for tracking, officer protection, and game detection. I have a special interest and some insight into that issue since my husband—who is a police officer—and I are training our Rottweiler for police work. Any tool, in this case a canine, which will make the job easier for a thinly spread cadre of personnel, help the resource, and help ourselves as officers, should be looked at seriously.

I don't always need guns, nor will I always need a dog (assuming that I am successful in getting the regulation passed). I do have an ability to talk with people which aids me not only in sticky law enforcement situations, but also helps me teach hunter safety classes and present wildlife programs to schools, clubs, and other organizations. That's an important part of our job, too.

In our area, state agencies like ours work well with federal agencies like the BLM and the Forest Service. Just recently, I worked with the Forest Service on turkey transplants and road closures, and have collaborated on wildlife habitat projects such as browse burn-



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ing, reseeding, and wildlife watering units.

And there is another incentive to collaborate: the Habitat Improvement Act—called the Sikes Act—has done more to benefit wildlife habitat in New Mexico with its commitment of time and money than any previous program. The Act provides that sportsmen, environmental groups, citizen groups, the New Mexico Department of Game and Fish, the Forest Service, BLM, and other agencies will work together to provide money, personnel time, and support for wildlife projects. Since 1987, funds have been flowing from this collaboration and it is beginning to show. Spring development, stream improvement, reseeding closed roads, turkey nest structures, wildlife watering facilities, elk grazing research, aspen regeneration, and irrigation of wildlife feeding sites are only a few of the successful ventures. In my view, sportsmen/women are the key to the success of the Sikes Act. They purchase the wildlife habitat improvement stamps (which provides some of the cash) and make personal commitments to assist projects.

Oil and gas development have reached higher levels in this area recently due to a 1987 gas law which gave oil companies a tax break if they have to drill in non-conventional formations. Our non-conventional formation is called the Kirtland/Fruitland oil and gas formation, but in this case, the companies are following a lucrative seam of coal. In the four corners area where Colorado, Utah, New Mexico, and Arizona come together, and especially around Navajo Dam, the San Juan Basin deepens and the Fruitland coal seam is very deep at 2300-2800 feet below the surface. It comes closer to the surface as it moves west toward Fruitland, New Mexico on the Arizona border. There are some 12 oil and gas companies in the area taking advantage of the tax law which allows them to earn 75 to 80 cents on the dollar. The incentive, clearly, is very high to drill for Fruitland coal, and in fact, the drilling difficulties and the extraordinary expenses incurred by these companies on our district was the impetus for the breaks in taxes given by Congress.

Traditionally, the focus of management for the Navajo Dam district has been to assess the impact of oil and gas drilling and determine the effects of this single interest industry on wildlife. After 1991, when the tax incentive ends, the companies' production may or may not decline. To win a few rounds for wildlife in what I see as an ongoing fight in the meantime, we are attempting to impose more stipulations on them, such as closing their roads or creating loop roads that are kept locked. Our interest in preserving the wildlife and fisheries resource here in our portion of the state won't change.

Kathy Espey McKim has worked for the New Mexico Department of Game and Fish since 1986, stationed at Navajo Dam. Her Bachelor's is in Wildlife Science and Range Science from New Mexico State University. She had worked prior to 1986 as a temporary for the Department on deer, elk, trout, and bighorn sheep projects.

How much regulation and enforcement is needed in the food production industry? Are consumers really at risk? This researcher says the food industry should put the cards on the table, face up, and let consumers into the game.

The Pesticide Paradox

Lori Payne

In several recent surveys, well over 75 percent of the consumers said that pesticide contamination was of major concern to them and was a serious hazard (1, 2, 3). In a Food Marketing Institute poll, 94 percent of the respondents considered this issue more important than any other health or food safety issue such as sodium or cholesterol (4). Clearly then, pesticide residues on food is on the mind of the consumer and in this age of communication and information, must be of concern to the entire food industry.

CANCER AND THE CONSUMER

One in four persons in the United States will develop cancer (5). Cancer is a dreaded disease and many times is incurable. According to the Environmental Protection Agency (EPA), pesticide residues are the third highest threat of environmentally induced cancer, following cigarettes and naturally occurring radon in the soil (2). However, the risk of cancer from pesticide residues in food is small when compared to smoking or natural substances in food, water, or wine. In addition, Americans have a much greater chance of dying in an automobile accident than from the ingestion of pesticide residues.

The carcinogenicity or the oncogenic potential of a chemical is determined from circumstantial evidence within the human population or from the results of chronic feeding studies which usually involve rodents. For example, farm workers exposed to certain herbicides for more than 20 days per year are six times more likely than the average person to develop non-hodgkin's lymphoma, a form of cancer (6). Therefore these herbicides are possible cancer causing agents. If experimental animals in a feeding study develop more cancers or different types of cancers than the control animals, the chemical being tested is considered a possible carcinogen.

Of all the pesticides used, about 18 percent are oncogenic. By volume applied, 60 percent of all herbicides, 90 percent of all fungicides and 30 percent of all insecticides are oncogenic. According to the Committee on Scientific and Regulatory Issues Underlying Pesticide Use Patterns and Agricultural Innovation

(7), ten registered pesticides account for 80-90 percent of the total estimated dietary oncogenic risk of the 29 that comprised the risk in their study. Ninety percent of the theoretical risk of pesticides residues are attributed to pesticides registered before 1978. Many of these are fungicides. All but one of the fourteen oncogenic fungicides were registered more than 18 years ago. However, fungicides account for no more than seven percent of all pesticide sales and less than 10 percent of all compounds applied.

Fungicides are very important to the agricultural and food industry. They are relatively inexpensive and there are few resistance problems. Unfortunately, the mode of action of fungicides makes it difficult to be selective to only fungi. They are usually toxic to life in general. There have been very few alternatives to fungicides developed because of the effectiveness of those in use. The exception to this is plant breeding for disease resistance. Even though the EPA has listed the widely used fungicides captan and folpet as *probable* causes of cancer--and benomyl and thiofanate-methyl as *possible* human carcinogens--they are allowed continued use because the benefits of their use outweigh the risks.

In spite of all of the above, the consumption of fresh vegetables and fruits probably protects consumers against more cancers than the pesticide residues on the fruits and vegetables produce. According to the American Cancer Society, the National Cancer Institute, the U.S. Department of Agriculture and the U.S. Surgeon General, increased fresh fruit and vegetable consumption leads to healthy lives. The National Academy of Sciences advises Americans to double their fresh fruit and vegetable intake (3). Pesticide residues may contribute to the overall risk of cancer, but they are probably not a major contributor.

CURRENT LEGISLATION

Raw agricultural commodities are regulated by the EPA under section 408 of the 1938 Federal Food, Drug and Cosmetic Act (FFDCA). Regulation of pesticide residues in processed foods is undertaken by the Food and Drug Administration (FDA) as mandated by

the 1958 Food Additives Amendment to the FFDCFA, section 409, where the famous Delaney clause is found, and which states that "no additive shall be deemed to be safe if it is found to induce cancer when ingested by man or animal, or if it is found, after tests which are appropriate for the evaluation of the safety of food additives, to induce cancer in man or animal (4, 8)."

CURRENT REGULATION AND ENFORCEMENT

The more recent Federal Insecticide, Fungicide, Rodenticide and Act (FIFRA) mandates that the EPA regulate chemicals used in agriculture. EPA does this by conducting a risk/benefit analysis based on chemical, toxicological, and exposure data plus the economic benefits. The EPA then sets tolerances which indicate the maximum allowable pesticide residues which may legally exist on food, feed, or food constituents. These tolerances are calculated using the theoretical legal use of the chemical under maximum legally allowable use conditions on specified crops (8). If a residue is found to be over the tolerance, it is assumed that the chemical was used illegally.

The Food and Drug Administration does the actual monitoring of raw and processed agricultural commodities by taking samples from import points, the farm, wholesale or retail outlets and processing or packing firms. If a shipment is found to have residues over the set tolerances, the product can be confiscated. None of the Federal laws prohibit states from establishing stricter standards than those established by the Federal government.

It is a little known fact that for more than 50 years Federal law has required that shipping cartons and store labels to disclose when wax is used on produce and that this information be shared with consumers. It has also required disclosure when post harvest pesticides are used on shipments to wholesalers. FDA has never enforced this law. FDA has said that it would like to leave enforcement to the individual states because it does not have the resources for this type of enforcement. Packers surveyed did not know about the law. In New York state, a State Attorney General survey of major supermarkets found not one properly labeled carton for post harvest pesticides or waxes (9).

Several states have passed laws which are much stricter than the Federal laws. These have been dubbed "right to know" laws. In Maine, for example, producers must indicate if produce is treated after harvest, must label untreated produce, and must disclose the name of the pesticide used if a consumer inquires (8). In California, Proposition 65, the "Safe Drinking Water and Toxic Enforcement Act of 1986" passed by a 2-1 margin. It requires warning before exposure to chemicals known to the state to cause cancer or reproductive toxicity before ingestion by consumers and it provides that 25 percent of fines collected for any violation to be given directly to prosecutors (8).

THE REAL WORLD

In the real world there are a myriad of chemicals which may cause cancer: gasoline is carcinogenic, air fresheners contain cancer causing chemicals, the vinyl in new cars may cause cancer, and many people live in areas where air and water pollution are very serious problems. Pesticides have a legitimate use in a world where insects, rodents, fungus, weeds and disease destroy one-third of the crops worldwide and cause \$20 billion worth of damage in the U.S. alone (3). Pesticide use also keeps the cost of food down. Americans spend only 12 percent of their income on food compared to India or China where 50 percent of income is spent on food.

On the average, of the produce tested, 50 percent do not have *any* pesticide residues and only four percent of the domestic samples and six percent of the imported samples have illegal pesticide residues. Many of the illegal residues on imported produce is due to the lack of established U.S. tolerances for exotic produce not grown in the United States--and not due to excessive amounts of residues on these samples. Ironically, American pesticide companies sell pesticides banned in the U.S. to countries from which we import produce. Any residues of pesticides banned in the U.S. are illegal. In addition, nearly half of the produce grown in the U.S. is grown in California where the strictest pesticide laws have been passed (3).

Nevertheless, there have been many examples of public pressure causing the banning of certain pesticides. Probably the most well known is the recent Alar controversy. Alar, or daminozide, and its breakdown product were termed "potent carcinogens" by the EPA in 1985. Alar is a growth regulator in apples which, when used, causes the apples to stay on the tree longer. It penetrates the pulp of the apple and cannot be washed, cooked or peeled off (2). A study entitled "Intolerable Risk" done by the Natural Resources Defense Council (NRDC) called for an immediate ban on the use of Alar; the study cited specifically the greater risk infants and children ran by ingestion of these chemicals in apples and their processed products. Children under 12 consume greater than average quantities of apples, apple juice and applesauce on a body weight basis and the NRDC report predicted that over 6,000 children would contract cancer solely due to their exposure to Alar and its metabolites. Public pressure prompted the EPA to ban the use of this product and many consumers did not purchase apple products during this time.

Similar incidents have occurred. Dinoseb has been used since 1948 and produces birth defects in laboratory animals. In 1986, the EPA warned pregnant women to avoid exposure to this chemical. Dibromochloropropane (DBCP), a soil fumigant, has been linked to childhood cancer and leukemia in California and in the cornbelt (10). Ethylene bisdithiocarbamate (EBDC) and its breakdown product ethylenethiourea (ETU) has caused cancer in laboratory animals.

EBDCs or macozeb, maneb, metiram, nabam and zineb (tradenames) are well established fungicides which have been used for well over 40 years with no resistance problems. They are important to the agricultural community.

Some companies have used these "scares" to their advantage. In 1984, public pressure forced the EPA to ban ethylene dibromide (EDB). However, several companies anticipated such an action and had discontinued the use of EDB well before the ban. When the ban did come they were able to state that their products contained no EDB, therefore their products were sought by consumers (10). In Sacramento, a supermarket chain currently promotes "NutriClean" products which are certified to be free of certain pesticide residues which are not monitored by the FDA. Managers have stated that the campaign has been very successful (1).

THE DILEMMA

The consumer's buying power has definitely shaped the current pesticide residue issue. The question is: how does the food industry, which represents 21 percent of the national GNP, please the consumer. The consumer wants inexpensive, bountiful, and beautiful produce without pesticide residues.

There has been some movement away from the use of chemicals in agriculture through plant breeding, genetic engineering, biological control, cultural control, fungal, viral and bacterial insecticides, but by no stretch of the imagination will chemicals be completely replaced in agriculture in the near future. The two most popular alternative agricultural methods, Integrated Pest Management (IPM) and Best Management Practices (BMP), strive to reduce chemical inputs, not eliminate them. Organic farming still constitutes less than one percent of all agricultural production and results in produce which is less than perfect--and is more expensive. Additionally, there has been very little innovation in the area of fungicides, which constitute the majority of the dietary cancer risk.

There are inconsistencies in the regulation of agricultural chemicals. Tolerances are set by the EPA which works on a risk assessment basis and weighs the risks of a chemical against its possible economic benefits. Enforcement of food residues falls under the FDA which must adhere to the Delaney clause which prohibits *any* carcinogens from being added to food. The recommendation from the Committee on Scientific and Regulatory Issues Underlying Pesticide Use Patterns and Agricultural Innovation is to allow use of chemicals determined to have a cancer risk of no more than one in a million whether it be in raw or processed food. According to their calculations, this would eliminate 98 percent of the current dietary cancer risk due to pesticide residues on food. This compromise is needed especially as scientific methods become more

sensitive and are able to detect down to the part per trillion level or lower.

Consumers want information about the food they eat and producers may not have this information. Even if the food industry did have information about pesticide residues on food, they might not want to advertise the chemicals they use for fear of public pressure to discontinue use of the chemical, or loss of income from consumers buying alternative products. The food industry, however, would be wise to deal with this problem forthrightly now.

THE ALTERNATIVES

There are several options that the food industry could consider:

1. Do nothing and hope that the current interest in pesticide residues will eventually subside;
2. Educate the public on the need for pesticides emphasizing the risk/benefit analysis;
3. Discontinue use of all chemicals considered to be carcinogens or reproductive toxicants;
4. Document pesticide use and label products where significant pesticide residues may be found.

RECOMMENDATIONS

Even though pesticide residues on food is an emotional issue, it is also a quality issue and the food industry should treat it as such. What the consumer wants the consumer gets. If one company does nothing, there will be a competitor who will supply the consumer with the quality he or she wants. Consumers have become increasingly more intelligent and sophisticated. Communication of relative risk can be informative and not alarmist. Agricultural and food firms must become quality firms.

The following steps are recommended for dealing with this issue.

1. **Information gathering and documentation.** Pesticide use is largely undocumented at the present time. Credible data bases on the amounts and types of pesticides used for each crop must be developed. If the food industry has the information on actual pesticide use it can better defend itself or justify a certain use for a pesticide.
2. **A pesticide residue quality control program.** Produce entering or leaving a firm must be tested with a statistical quality control program to insure that pesticide residues specified are present (or not present) on a certain item. Appropriate tests need to be designed for the chemicals used by the firm and/or its growers/suppliers. This includes monitoring the firm's water supply if water is used in processing.
3. **Cooperation with suppliers or growers.** Suppliers and growers must be intimately involved with the pesticide residue quality control program. They must be convinced of the need for documentation and reduction of the use of targeted pesticides. Free scientific information should flow to and from the com-

pany and its suppliers and growers. Alternatives to chemicals with unacceptable risks should be sought.

4. **An early warning system.** Just as some companies took advantage of the public's desire for produce free of a specific pesticide, so should a quality firm be ready for similar instances. People knowledgeable in toxicology and chemistry should be reviewing the scientific literature for possible carcinogens or reproductive toxicants being considered for use or used by the company and its growers/suppliers. In this way the company will not be caught with a product unacceptable to the consumer. The company's standard should be tougher than the government's standards. Once standards are set, they should never be compromised.

5. **A professional public relations program.** Employees who will deal with the public and the media should be well versed in risk assessment and be experts in public relations.

6. **Labeled products.** "Right to know" laws are on the books in several states and are likely to spread to others. Consumers want to know what they are eating. Labeling programs have been implemented with other food products. Initially there may be some change in buying habits, but eventually consumers will become used to labels just as they have become used to labels listing vitamins, calories, preservatives, and additives on other food items. Some label examples could be the following: treated with *xyz* as a preservative, may contain *xyz*, contains less than the negligible risk standard of *xyz* as determined by the Food and Drug Administration; no cancer causing compound used to produce this product.

CONCLUSION

The food industry must take the initiative on this issue as if the listing of pesticides on labels were their own idea. Consumers' desire to have this information should be considered as just another aspect of food quality and emotions should be left at home. Documentation is essential for credibility and quality assurance. Those firms which take this issue as a quality one will be the ones to survive a growing concern consumers have about the American food supply.

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Lori Payne is a Ph.D. candidate at Louisiana State University in analytical chemistry with a minor in environmental science. She was an associate biochemist for several years at Stauffer Chemical Co., involved, among other work, with herbicide mode of action studies and herbicides absorption. Payne is a Section Editor for Women in Natural Resources.

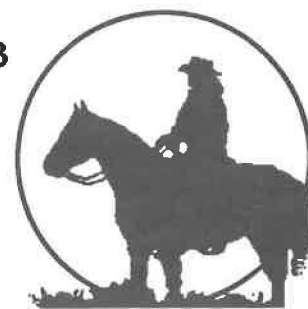
WIMR

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PEOPLE

Shi-Jean Sung (Susana) joined the Forest Service's Institute of Tree Root Biology in Athens, Georgia as a research plant physiologist. Her focus is root enzymology/stress/carbon allocation in pines and hardwoods. Before joining the Institute, she was an assistant research biochemist at the University of Georgia Biochemistry Department, where she worked on carbon allocation and sucrose metabolic pathways. Her Bachelor's is from the National Chung-Hsing University (Taiwan), Master's from Virginia Polytech, and Ph.D. from Auburn.

Sharon L. McNeil has been hired by the Washington Water Power Company as the utility's first system forester. She will oversee all company vegetation control work, including contracts and personnel. McNeil will also be responsible for implementing and overseeing maintenance of a viable herbicide program for the proper management of deciduous trees and brush on transmission and distribution systems. Liaison with federal, state, county, and city officials, as well as with university and extension representatives are also part of her duties. She comes to the job with experience at Jersey Central Power and Light Company, Idaho Forest Industries, Inc., The Idaho Forest Industry Council, the Idaho Department of Fish and Game, and the BLM.

Leslie Weldon is the co-chair of the National Diversity Conference designed to move the Forest Service towards a successfully diverse workforce. The Forest Service plans to send 800 employees representing all strata of personnel to the November 26-29, 1990 meeting in Atlanta.

Antonia Novello is the new US Surgeon General, succeeding the very popular **C. Everett Koop**. She intends to focus on those who increasingly suffer the consequences of AIDS: women, children and minorities—especially blacks and Hispanics—who are infected

at almost twice the rates of white males. She is a pediatrician with a specialty in nephrology (kidneys) who recently served as Deputy Director for the National Institutes of Child Health and Human Development. She is said to mirror Bush administration policies.

Suzanne Mehlhoff, Petroleum Engineer with BLM in the Casper (Wyoming) District heads up a BLM 30-person team contingent sent to help a project in the city called Paint Your Heart Out. With donated paint and materials the various teams rehabilitate homes of the elderly and handicapped.

The Eastern Region of the Forest Service has made two new appointments: **Kathy McAllister**, former Director of the Blackwell Job Corps Center on the Nicolet National Forest, has been appointed Deputy Forest Supervisor of the Mark Twain National Forest; **Christine Rose**, formerly the Tujunga District Ranger on the Angeles National Forest, is the new Deputy on the Wayne-Hoosier National Forest. She has also worked on the San Bernardino and the Los Padres National Forests.

Jewell Plummer Cobb has decided to retire the summer of 1990 as the President of California State University-Fullerton. Prior to her presidency there she was an administrator at Sarah Lawrence College, Connecticut College, and Douglass College (Rutgers). She has appointments on a number of corporate boards as well. Her research interests were in cell physiology, and her academic and administrative interests included promoting the advancement of women in science, and promoting the careers of minorities in research.

Karen P. Bennett, the University of New Hampshire's Cooperative Extension Educator in Forestry for Merrimack County has been named the northeastern Area Cooperative Forester of the Year for 1989. The award

covers a 20-state region and was competed for by 500 field foresters. Bennett is currently the co-chair of the New England Society of American Foresters as well.

Winifred Kessler has been named Assistant Director for Research on a new Forest Service project called New Perspectives. She leaves Utah State University where she was national wildlife ecologist for the Forest Service and Associate Research Professor. Prior to that she worked for the agency in Alaska, and was also an Associate Professor at the University of Idaho. Her Bachelor's and Master's degrees are from UC-Berkeley and her Ph.D. is from Texas A & M. **Hal Salwasser** directs New Perspectives.

Myra Bennett, BLM fire program dispatcher, recently was recognized for her courage and resourcefulness by the rehabilitation center of the hospital where she was treated for a spinal cord injury that left her partially paralyzed. The award--PANDA for Positive Attitudes Nurture Disabilities to Abilities--fits especially well in the stressful work that she does for BLM. In the Bakkersfield District (California), she is a dispatcher, working with the fire, law enforcement, and aviation crews. She works from a wheelchair, but has ridden in helicopters, been to fires, attended meetings and training sessions.

Jennifer Donaldson Knoepp joined the the Forest Service's Coweeta Hydrologic Laboratory staff as a research soil scientist, going there from EPA's Environmental Research Laboratory in Corvallis, Oregon. Her research work is in the field of short- and long-term effects of forest management and natural disturbance on soil chemistry and biological processes. Knoepp had received a National Research Council Fellowship after her doctoral work (in forest soils from the University of Missouri). Her Bachelor's and Master's were in horticulture from the University of Arkansas.

After the advent of the Taylor Grazing Act, sheep were banned from many of their historical ranges in the west. Sometimes all that is left from 100 years of shepherding are a few carvings on soft aspen bark. BLM, like other public agencies, protects and inventories these historical "documents."

Frank Rodriguez, Shepherd and Artist

Roberta L. McGonagle

One of the last areas where "gypsy" sheepmen operated can be found on Bates Mountain in the Simpson Park Range of central Nevada. That area is now under the jurisdiction of the Bureau of Land Management's Battle Mountain District and was the last grazing district (1952) in the United States to be formed under the Taylor Grazing Act. The purpose of the Taylor Grazing Act was to regulate livestock grazing on public land and was passed partially in response to cattlemen's attempts to eliminate itinerant or "gypsy" sheep operators.

The Simpson Parks are a typical Great Basin north-south-trending mountain range—6,700 to 8,000 feet above sea level, with aspen groves, big sage, pinyon/juniper woodlands, low sage, groves of mountain mahogany and service berry, and streams supporting willow, cottonwood, and aspen. With the abundant grass and forbs, the area had been home to sheep and their herders for over a century by 1952. The sheep and herders are all gone now, but there is ample evidence of their presence in the form of sheepherder carvings. Many of these carvings are over 50 years old—the bulk of them are from the 1920s, 1930s and 1940s—and thus are historic resources. As historic resources, they must be inventoried and managed much the same as other cultural resources (i.e., cabins, rock carvings) on public lands.

During the summers of 1986 and 1987, the Battle Mountain District of the Bureau of Land Management (BLM) conducted an inventory of the aspen carvings on Steiner Creek, a major drainage on the northwest part of Bates Mountain. We were a team of three: I am an archaeologist, Deborah Hoback is a realty specialist and was the photographer, and Patricia De Bunch, an archaeologist with the Nevada Department of Transportation, translated carving texts from Spanish to English.

As the inventory progressed, it became evident that the carvings contained an amazing amount of information about sheepherders and their lives from the earliest datable carving of the 1890s. Certain prolific carvers began to emerge as individuals, as well. One, of them, a Mexican herder, signed himself FR, FRR, Rodriguez, Frank Rodriguez, Francisco Rodriguez,

Frank Rodgers, or simply Mex, Mexico, or Mexicano (occasionally using the Spanish spelling). Frank, as we shall call him here, carved on 138 trees, or 28 percent of the trees inventoried. He must have been on Bates Mountain in 1922, 1923, 1924, and 1926. Most of his surviving carvings are from 1926.

In his carvings, Frank claimed to be a Mexican Indian:
There are Mexicans who don't even know who their father was, some say my father was French, others say my father was a Spaniard. Usually I say that I feel ashamed to see such a lie. I am a Mexican Indian.

He told us his place of origin:
August 1926, Frank R. Rodriguez, Mexican from Sonora Cananea.



From the carvings we learned also that he was apparently in his early 20s. He was frequently angry, women and sex were much on his mind, he had an extensive vocabulary of swear words, and he did not like

his boss(es) very much. It was not clear, however, which one of the sheep ranchers he worked for. Joe Saval was the dominant sheepman in the area in the 1900s, but Frank writes that his boss was named Joe Zabala; this may be Frank's rendition of Saval. In any case, several of Frank's carvings are about, or of, Joe and they are usually derogatory and/or pornographic.



Frank carved both figures and lengthy texts, but most of the time, just his name, the date, and possibly a short phrase. His figures include animals, possible self-portraits, cowboys, Indians, relatively sedate nudes, and genuine pornography. He apparently dreamed of owning his own ranch; one tree has numerous brands, many using variations of his initials.

He was proud of being Mexican:
It is known that someone is spreading that I was born in the USA and that I have a French Father without a flag and that I am bull shit. That gives me a stomachache. Rodrigiguez.

Sons-of bitches who speak bad of Mexicans, says Rodriguez.

Referring to Basque text already on the same tree, he banter with his fellow herders:
Who was it. Some Chinese who could write Spanish and they will be jealous for looking like Chinese.

He insults his fellow Mexicans:
Rodriguez says that Mexicans like Ed Romero are

sons-of-bitches. Alcara says the same thing, poor fool, and he says it the American way.

All the sheepherders of Pete Arena are scoundrels, I have said. Mexico 1924...says Mexico FRR, Pedro Arena is loco.

Frank is often angry:
Who reads this will kiss my ass. It will be some shit shepherd who loves to know that is none of his business. FR

Again they will kiss my ass so I come back to Grass Valley.

At times he comments on the weather:
In March the sky fell down (rained), Grass Valley is not worth shit.

At times he is philosophical:
How hard I am working, son-of-a bitch.

...who is a shepherd is not a man, is a wretch, let them all be eaten by the coyote.

Mexico says goodbye, what a pity. Long live (those) who haven't died.

No more shepherders after 100 years.

Actually, there were "no more shepherders" on Bates Mountain after only 30 years. Following the formation of the Battle Mountain Grazing District, the range on Bates Mountain was adjudicated by the BLM to the Grass Valley and Dry Creek ranches, both cattle operations. That hasn't stopped the carving on aspens, completely, however. Of the 135 individuals identified who carved, some of them have been fairly recent hunters or cowboys. None as colorful in the aggregate as Frank, however.

To some people, these carvings are folk art and contain folklore; to others, they are merely graffiti. Whatever the final verdict, BLM will continue to protect and inventory them as one of the many kinds of cultural resources that occur on public lands.

Frank himself wrote a fitting epitaph for the demise of the sheep industry:

Goodby mountain hospital of sheep.



Roberta L. McGonagle has been with BLM in her present position as Archeologist at Battle Mountain, since 1975. Earlier, she taught anthropology at the college level. Her degrees in anthropology are a Bachelor's and Master's from the University of California-Davis, and a Ph.D. from the University of Missouri-Columbia.

NEWS & NOTES

Two Opposite Policies on Diversity: The Forest Service and The Wildlife Society

I have been asked to lead a national task force on workforce diversity. We will assess our current situation and make recommendations as to a direction for 1995 and beyond....The task force members are a mixed group of 26 Forest Service employees, and a representative each from the Society of American Foresters and the National Association of Professional Colleges and Universities. Mixed both geographically and across functional and organizational lines, the task force consists of people from the Washington Office, all Regions, four Stations, and the North-eastern Area....

Our charge is to develop recommendations to help the Forest Service achieve its goal of having a workforce by 1995 that better represents the diversity of the American people. To accomplish this, we will concentrate on four areas of emphasis: outreach and recruitment; work environment; retention; and recognition, accountability, assessment/goals and marketing. The result of our work will be a set of recommendations for defining workforce diversity, setting strategies, reporting progress to internal and external publics, rewarding achievements, and establishing accountability standards.

At the organization meeting in early June 1990, we broke into groups based on the four emphasis areas. Each group developed a work plan and assigned individuals to begin gathering information on the current situation including

internal barriers and issues. The overall work plan was transmitted to Regional Foresters, Station and Area Directors (RF&Ds) and the Washington Office Staff, and a letter went out to all employees soliciting information and suggestions....Three other meetings are planned for the year....The task force's report will be presented [to the Chief and Staff] during the January 1991 RF &D meeting.

....J. Lamar Beasley, Southeastern Forest Experiment Station Director, USDA Forest Service, *SE Newsletter*, May/June 1990

.....

The Wildlife Society submitted testimony to the National Parks and Public Lands and the Civil Service Subcommittees on the relationship between sound science-based natural resource management and personnel needs of public land management agencies. Based on enrollment statistics, there is no shortage of college students interested in...careers in natural resource management, but it is clear that the natural resource professions are lacking an ethnically diverse, qualified pool of potential employees. The Society has monitored the enrollment of women and minorities in wildlife and fisheries...since 1977. Consistently, total enrollment has been....68 percent caucasian men, 27 percent caucasian women, 2 percent ethnic minority men, 1 percent ethnic minority women, and 2 percent foreign nationals. Although the total number of students enrolled in wildlife and fisheries programs declined during the 1980s, these percentages have held relatively constant...Of over 6,3000 wildlife and fisheries students in 1985, only 233 were North American ethnic minorities.

The Wildlife Society suggested that it would not be appropriate to apply current affirmative action expectations to land management agencies employing natural resource professionals, and that it will continue to be inappropriate until enrollment of ethnic minorities in university level natural resource management curricula are much more representative of their proportions in the U.S. population.

The Wildlife Society offered the following recommendations on building a qualified and diverse workforce to meet the changing roles of natural resource management professionals. 1. The educational standards of the Society for wildlife biologist certification should be a model for traditionally minority schools to follow... 2. Agencies, Congress, the Office of Personnel Management, universities, and professional societies must be more aggressive in informing and stimulating minority high school students about the importance and rewards of scientific natural resource management careers. 3. Maintain and strengthen the educational standards to prepare natural resource professionals to meet the escalating and diversifying demands being placed on natural resources. 4. Curricula should be flexible so that interests of students and needs of employers can be accommodated....

....*The Wildlifer*, May-June 1990

To Dye or Not to Dye

I can tell how I actually appear to the world by the verdict rendered by my children. "Mom, I

liked it better the other way" is a sure indication to me that the latest change has made me look younger. I think they have a problem, my kids, with my looking the way I look when men are attracted to me, as if I might get married again, or live with some guy. I confess that I have read into their concern one other that is entirely of my own fabrication: When I let my hair grow natural, almost pure white, does their inheritance seem to them more secure? I don't really believe that, but I have to come up with a reason they are so fond of my undyed hair, which some would describe as the Bush look, but which I had long before the Bush look came into vogue. Actually, Barbara Bush and I don't resemble each other much at all. She's a grandmother and a First Lady and I'm neither. One thing we have in common is that we each recently received an honorary degree. I enjoyed her speech, I'm sorry she didn't hear mine.

Another problem I have with coloring my hair is a deeply persistent need to be confined to my room when the first glinting millimeter of regrowth becomes visible. This overreaction is directly traceable to my youth, when I was told by my mother that all women who dyed their hair were prostitutes. The fact that my roots are white and shiny, unlike theirs, which were dark and icky, does not take away from my prejudice that there is a not-quite-refined look to my colored hair. On the other hand, some 60 percent of American women dye their hair. Something resembling my original brown revisited does make me look better. It even makes me look sexier. I have one male friend who says it looks glamorous. Sexy? Glamorous? Hell, I can't fight that.

....Frances Lear, *Lears*, August 1990

More Hot Air

A report that blames cow-flatus for contributing up to one-fifth of the gases responsible for

global climate change is hard to take seriously. A subsidiary of American Capital Research, Inc., in Fairfax, Virginia has concluded that the world's 1.3 billion cattle emit 70 million metric tons of methane gas annually as part of their normal digestion process. That's up to one-fifth of the "greenhouse gases" in the atmosphere. This startling news came out as part of a federally-funded \$10 million study on the greenhouse effect and a 100-page report, issued from the study. Their strategy for dealing with bovine bad manners? More research into modifying cattle diet and improving their reproductive rates. Why the latter? The faster they reproduce, the fewer adult cattle (and their noxious emissions) will be necessary for breeding. If cattle are responsible for up to one-fifth of the carbon-based greenhouse gases, we have to wonder what the total effect of all of "us animals" must be: five billion humans and uncounted wildlife—all living, venting, digestive tracts—doing what we must to live.

....Kathy Hensley and Lester DeCoster, *Tree Farmer*, Spring 1990

Part-timers. Does it Work?

According to the Bureau of Labor Statistics, 82 percent of the country's approximately 20 million part-time workers are "voluntary." Unlike the other 18 percent who can't find full-time work, these want more time: some want time with their children, some are going back to school, others are trying to start their own businesses on the side, or they simply want some breathing space. It's not strictly a female phenomenon, although two-thirds of the part-time work force is made up of women. The number of part-time managers grew 14 percent from 1987 to 1988, a time when the overall work force grew only two percent. Almost one in five workers was classified as part-time.

The most progressive firms are

inaugerating formal programs. Others, holding up fingers to the demographic winds, see labor shortages in the future and are using individual arrangements to retain key employees. All the news is not so encouraging, however. Workers sometimes pay an unreasonably high price for the flexibility of a reduced workweek. In 1987, only 16 percent of part-time workers received health benefits compared to 64 percent of full-timers. And a 1987 Small Business Administration survey found that 68 percent of the firms that offer health insurance exclude partime workers from the coverage. Last year, Congresswoman Patricia Schroeder proposed a bill that would require employers to give prorated health insurance and retirement benefits. Congress did not address the issue. Experts are skeptical about the success of a legislative solution. Some part-time jobs only exist because the employers can save money by not making them career positions and providing benefits for them.

Part-time work can be hazardous to your resume, too, especially at the higher levels because it can be perceived that your career is on hold. But if it's a choice between stepping off the fast track and staying in the job market at all, part-time work can be an attractive option.

....Linda Stern, *Self*, January 1990

A Bow Hunter's Swan Song

The anti-hunting sentiment is growing. CASH (The Committee to Abolish Sport Hunting) has garnered victories in California and Oregon, successfully cancelling cougar and bear hunting on national forests and public lands. CASH is close to doing the same in Colorado and has targeted Idaho, Washington, and Montana next on their hit lists. We bow hunters also have been targeted as the first segment of the different weapon user groups to have our way of hunting banned.

It must be recognized by all hunters, however, that wildlife issues go beyond bow hunting. If you use a .30-06 rifle, anti-hunters say it is not sporting. It's too efficient; if you use a bow, it is not efficient enough. The anti-hunters are against hunting of any kind with any weapon for any season.

The Friends of Animals have joined CASH's ranks this year, and all hunting, not just bow hunting is in jeopardy. Even sport fishing. Like a wild forest fire feeding on underbrush, anti-hunting has built up slowly over the years until finally ignited by folks who do not have all the facts. All hunters have been fueling this fire with their lack of respect and ethics, with their egotistical poaching, disobedience of game rules, and infighting.

Now, just so people reading this don't think I am crying "wolf" please read what CASH writes: *We have closed down the sport of hunting bear and mountain lion in the state of California, and are ever so close in Colorado, Montana, Wyoming, Idaho, and Washington. We have achieved this by using the legal system and forcing environmental studies. How this is accomplished is that the state is mandated by law to publish its findings of the actual species herd size that is resident in the area in which they are going to hunt. What we found is that the states do not have the funding nor man power or time required to accomplish this. So that species remains closed until such time that the state complies. They must comply for a period of 10 years in succession. We have essentially closed the right to hunt bear and mountain lion indefinitely in the state of California. We plan to do the same in the other aforementioned states also. We have other exciting information to bring you. We are planning to do the same in the State of Illinois but for whitetail deer hunting. We first must concentrate our efforts on the sport of bowhunting. The bowhunters in the state are disorganized. I would like to say this: Our state's bowhunters also are disorganized,*

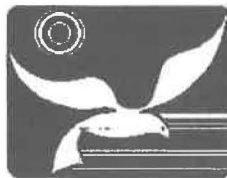
weak, and wasting our time on petty grievances, not the real issues of anti-hunting, habitat loss, and poaching.

Maria Holmes, *Lewiston Tribune*, July 26, 1990

Mostly Males Are Trashing America

Daniel Syrek is a litter expert and directs litter research for the Institute for Applied Research, a non-profit California corporation. He and Institute staff members were in the state of Washington to conduct a survey for the state's Department of Ecology. They will collect and analyze litter from 139 sites. The information gleaned will help gauge the effectiveness of Washington's anti-litter campaign.

One bald fact coming out of their research in many states is that males contribute 75 percent of the litter. This is important information the institute gathers because it will also help target an upcoming advertising campaign. Syrek noted that in the past, "ads were not effective. They were asking for PSAs—free spots that were coming on when the Star Spangled Banner was coming on." The ad campaigns that have been most effective in other states, however, have been most effective when they appropriately target young males. In the cities, the biggest litterers are boys aged 12 to 18. In rural areas, young men aged 18 to 30 are the largest group of deliberate litterers. But older men are the greatest source of accidental litter-



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they're the people who don't cover their pickup trucks on the way to the dump. Older women contribute when they put their refuse on top of the trash can (because there's no room left inside), then it blows away.

Other sources: when Washington legalized fireworks, its litter increased one percent. When a state institutes a lottery, disgusted losers toss aside their tickets. But public litter enemy No. 1 is fast-food packaging said Syrek—whose firm has conducted 48 major litter surveys in the U.S. and Canada. Texas used football heroes and country music stars in a media campaign to force the litter rate down 64 percent in four years. Washington's rate dropped 80 percent between 1975 and 1982, but is heading upward due to growth.

Julie Titone, *Spokesman-Review*, July 31, 1990

Women in Natural Resources

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The National Science Foundation has established a job vacancy hotline that identifies job openings in the sciences. To hear a listing of positions, call 800-628-1487 (in Washington DC call 357-7735).

The Association for American Women in Science (AWIS) polled their members about what they think are the issues AWIS should take a stand on. Some 424 members returned the surveys and at least 85 percent thought they should take stands favoring: the Equal Rights Amendment; prohibiting sexual harassment in the workplace; pay equity; better child and dependent care and parental leave; equity in student aid. Between 75 and 82 percent favored fairer standardized tests and more flexible working hours. Over half of the respondents think AWIS should work towards decreased military spending, a comprehensive nuclear test ban, and the pro-choice position on abortion. Fewer than 50 percent wanted a stand for lesbian and gay rights, or efforts to lessen violence against women and children.

I have been accepted by the National Audubon Society Expedition School and I am seeking financial aid from any and all possible sources. If your readers know of scholarship funds or grants available for students entering environmental studies I would like to hear from them. Write to me at the following address: Jennifer Allen, 10 Taft St., Nashua, New Hampshire 03060.

The Nature Conservancy, an international nonprofit conservation organization, has opened its last office, completing a network of Conservancy field operations in every state in the country. Since its founding, the Conservancy has protected

five million acres of wildlife habitat in 50 states, Canada, Latin America and the Caribbean. With 1,100 preserves nationwide, it manages the largest private system of nature sanctuaries in the world and has developed a worldwide support system of 550,000 members, corporate associates, and foundations. This last office in the link is in Bismarck, North Dakota.

The Izaak Walton League and the Forest Service are offering awards for creative and influential wilderness education materials and for ongoing educational programs demonstrating long-term consistent delivery. Separate awards will be made to public employees and to private ones. Nominations are due October 15, 1990 and should be sent to National Wilderness Education Award, c/o George Asmus, Recreation Staff, USDA Forest Service, Box 96090, Washington DC 20090-6090 (202-447-2196).

The symposium, **Windbreaks and Agroforestry** will be held at Ridgetown College, Ridgetown, Ontario, Canada on 2-7 June, 1991. For information contact the Continuing Education Department at the College, Ridgetown, Ontario Canada NOP 2C0.

In 1989, nearly 429,000 cultivated marijuana plants were destroyed on 4,108 sites on National Forests across the nation (an 828 site increase over 1988). To combat this explosion of illegal uses on the forests, the Forest Service has contracted with WE-TIP to receive anonymous information about gardens and drug labs. Call 800-78-CRIME to report drug-related activities. You are told not to give your name or address so there is no chance to breach the anonymity promised. The calls are then referred to the

proper place for investigation. The Forest Service has also developed and made available at their offices, media materials, posters, bumper stickers, brochures and videos to assist the public in identifying illegal activity.

The International Canada Goose Symposium chair has issued a call for papers (due 1 December 1990) for the meeting to be held 23-25 April 1991 in Milwaukee, Wisconsin. For more information about manuscripts contact Donald Rusch, US Fish and Wildlife Service, 226 Russell Labs, UW Campus, Madison, Wisconsin 53706 (608-263-6882).

The next meeting of the Society of Environmental Toxicology and Chemistry will be held in Arlington, Virginia 11-15 November 1990, with the theme of Global Environmental Issues. For information, contact them at 1101 14th St. NW, Suite 110, Washington DC 20005 (202-371-1275).

The International Seminar on Gender and Economic Restructuring chair announces a call for papers (due 1 December 1990) for the meeting to be held at

the University of Waterloo, University of St. Jerome's College, Waterloo, Ontario, Canada on 5-10 May 1991. For information and a brochure, contact Janis Monk, SIROW, University of Arizona, Tucson, Arizona 85721 (602-621-7338).

The nongame wildlife committee of the North Dakota Chapter of the Wildlife Society sponsors a bluebird workshop on February 9, 1991 to organize efforts to conserve the birds. For more information contact Terry Rich, BLM, 2933 3rd Avenue West, Dickinson, North Dakota 58601.

The national Zoological Park is offering research fellowships for scientists to complete a major piece of work in their specialty and to gain experience in research opportunities specific to zoological parks, particularly in the areas of evolutionary biology, animal behavior, and others. Each award is for three years and the stipends are commensurate with experience. For more information contact Devra Kleiman, Asst. Director for Research, National Zoological Park, Washington, DC 20008.

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