women in NATURAL RESOURCES

Vol. 11, No. 3, March 1990

In This Issue:

Ah Wilderness

Sierra Club Collaboration

Leaders in Conservation

Cultural Diversity Suggestions for Agencies

Timber Companies' Problems Don't Change

Grass Farming in Vermont

Update on Women in Forestry

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

Nobody is willingly going to give you the time for life-enhancing recreation. Take it anyway.

In a folder labeled Sex-Roles (Gender-Androgyny) was a *Time* magazine piece my husband clipped for me on The Myth of Male Housework (August 7, 1989:62). Within the piece was this statement: Women spend 15 fewer hours at leisure each week than their husbands and that in a year they work an extra month of 24-hour days. This means that married women have fewer opportunities to benefit from leisure experiences.

While much has been written about physical fitness, it bears repeating: the rise in cardiovascular illness and the number of overweight adults is associated with the lack of exercise. Over 50 percent of all deaths in the United States are related to heart disease. Last year, a researcher estimated that fewer than 20 percent of Americans exercise regularly and 40 percent are not even attempting to do it at all. The national Center for Disease Control has data which indicate that 55 percent of Americans are not physically active enough to confer health benefits for themselves.

Most experts agree that to maintain an established fitness level, you need to work-out three times a week for 20 minutes; to improve fitness, the weekly work-out needs to be increased to four or five times a week of 20 to 30 minutes of vigorous exercise. (An exercise level vigorous enough to increase fitness is working at 85 percent of one's maximal heart rate. To compute that level, subtract your age from 220 and multiply the difference by 85.) One study noted that for women, the lunch hour was their preferred exercise time, while for men it was after the evening meal. Whatever the time chosen (or stolen), a well rounded exercise program must be established and should not focus just on strength—the ability of a muscle to exert force against a resistance—it ought to contain elements of muscle endurance. Muscle endurance is the ability of a muscle to exert force repeatedly over a period of time, and this should be coupled, in addition, with cardiorespiratory endurance, and flexibility—the ability to use muscles and joints throughout their range of motion.

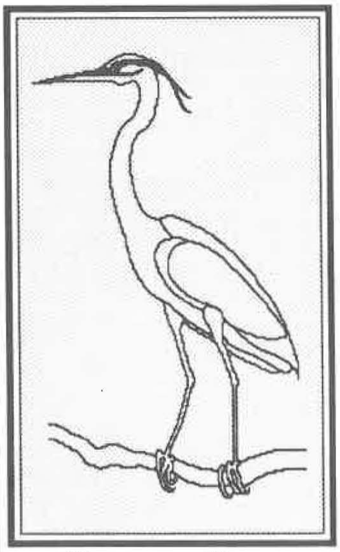
Especially important for women to note, is that osteoporosis, loss of bone density, begins slowly during the late 30s and accelerates rapidly after menopause. It is also well known that excercise increases bone density, and the body is best suited for dramatic improvements in muscle and bone development during youth. So it is vital for young people to develop exercise patterns which will build and maintain these masses for the thinning which inevitably occurs in middle life.

Quite beyond the physical benefits, it is known that the fit have a stronger sense of well-being, improved work performance, reduced absenteeism, opportunities for social interactions apart from the home and workplace, and another life interest. Recreation and leisure experiences can also help combat boredom, psychological malaise, perhaps mental illness. It appears that some real effort is needed to engage the interest of aging Americans, because studies show that recreation activities become increasingly restricted with age despite decreased responsibilities and more time available for it.

I would recommend two recently published works: *A Leisure of One's Own: A Feminist Perspective on Women's Leisure* (Henderson, Bialeschki, Shaw, and Freysinger: Venture Publishing) is a social psychological analysis of women and their leisure from a feminist perspective and it assumes no prior knowledge in women's studies or leisure studies. The other one is *The Second Shift* (Hochchild: Viking Press) and is about women who return from work only to begin another work shift at home. Much of this book is based on interviews with two-job couples and indicates that only 20 percent of them split household tasks and childrearing equally.

The message in both of the books (and in this editorial) is that women may let their dual work roles get in the way of their leisure and recreation. That is unhealthy, and in the end, benefits neither the woman nor the family.

—*Lei Bammel*



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WOMEN IN NATURAL RESOURCES Vol. 11, No. 3, March 1990

Features

Departments

Subscription coupon, page 3
Information for advertisers, back page.

Cover photo of Anne S. Fege
Story on page 35

LETTERS & OPINIONS

The recent article by Kumar, Kumar, and Sharma on the Tropical Forestry Action Plan (TFAP) in Volume 11:2 presents a distorted picture of TFAP and the forestry program of the Food and Agriculture Organization (FAO) and other international organizations. In our view, the article contains many significant errors. We'd like to highlight some of those errors that deal with FAO, since we know that organization best.

The article stresses that the "managers of the Environment and Forestry Departments and the World Bank and FAO...have no practical forestry experience...(or) professional degrees in tropical forestry...(and few) hail from developed countries," and that few "Third-World professionals" hold "decision-making positions" in FAO. The implications and tone of the article are that the FAO Forestry Department is headed by a group of neo-colonialists, insensitive to people in developing countries. This is clearly not the case.

For example, the present head of the FAO Forestry Department comes from a tropical, developing country (Trinidad-Tobago), as did both previous leaders (Guyana and Honduras)—going back to 1974. All three have completed Master's in forestry (two with Ph.D.s), including studies in both the tropics and outside. Each of them headed up an important forestry program on the ground in a tropical country before working for FAO. The present leaders of the FAO Forestry Department are dedicated foresters with substantial tropical experience, and with an understanding of grass-roots needs in the tropics as well as recognition of the need to build support from industrial countries to promote development. Although the World Bank is organized differently than FAO and does not have a forestry department, it too has many well qualified foresters with first-hand tropical experience well placed throughout the organization.

The article is also critical of the TFAP as being a "top-down" process driven by industrialized countries. We should point out that the TFAP grew out of a 1983 recommendation of the FAO Committee on Forest Development in the Tropics (CFDT), a standing technical committee of FAO which meets every two years. The CFDT has a strong tropical representation. For example, at the September 1989 meeting, a total of 43 developing countries were present, versus 17 developed countries.... It is true that the TFAP is not the product of a "bottom up" ground swell of demand from the villagers, poor farmers, and nomads of the tropics, but it is a recognition of their plight by tropical foresters from throughout the world.

Incidentally, special effort is underway to seek out top foresters from the tropics to fill a number of the posts in the TFAPs coordinating unit; their first selection...was a Brazilian.

The article notes how the TFAP "fails to emphasize the crucial role of rural women." The FAO Forestry Department has recognized this need for some time and has been making headway in its women-in-development efforts. For about the past five years an energetic woman with substantial tropical experience in social forestry has been coordinating this expanding effort. A number of workshops and other activities have been organized....

The authors discuss how the TFAP is "counter-productive" and causes unnecessary bureaucracy. All large organizations suffer from some bureaucracy, but FAO is no worse in this respect than some of the bilateral organizations. FAO serves as the facilitator for the TFAP; this requires some administration....

The head of FAO Forestry, Hollis Murray, [is] frank to admit that TFAP must do better...[and] efforts are underway to seek a wider role for non-governmental organizations (NGOs), especially those at the grass-roots level.... A workshop in the Dominican Republic in September... addressed ways to improve NGO participation in the TFAP and to build more roles for women in development projects.

The TFAP plays a unique and valuable role. It needs constructive review and criticism if it is to work well. But criticism should be objective, factual, and based on first-hand information and knowledge, not on supposition, assumption, or incorrect information.

Samuel H. Kunkle, Tropical Program Coordinator, USDA FS

David A. Harcharik, Director of International Forestry, USDA FS

Manuscripts

WiNR *Women in Natural Resources* solicits manuscripts for special interest issues: in fisheries, in recreation, BLM, and urban forestry. If you have feature length articles, or would like to discuss submitting one, write or call WiNR, Bowers Lab, University of Idaho, Moscow, Idaho 83843 (208-885-5767 FAX 208-885-5878). For information on how to submit, see the outside back cover.

The journal also requests short department pieces suitable for Research in Progress, People, and Publications. Be sure to include sources, phone numbers, and dates which might be relevant to the subject matter.

I am very much encouraged by the growing numbers of professional forestry women. It is too late to save my forestry career, but there are many women who can benefit from your communication. The stress of trying to prove myself has been too much. It took a month in a stress center to convince me to give up. So at 42, I am launching into another career. At 28 I left secretarial work to enter forestry, so changing lifestyles is not frightening. Rather, it is fun to rediscover the old me, with a few gray hairs. Though forestry will no longer be paying my bills, it is my first love. You will be hearing from me. Good luck and God bless all female foresters.

Charlotte Schneider, Easton, Missouri

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Keep up the great work with the magazine. I wish there had been some kind of journal like yours when I was going through school. It's amazing the diversity in career paths your readers have.

Candace Gregory, San Bernadino, California

▲

I like your stepped-up position announcements program. My students appreciate the fact that I post them—it encourages them. And one of my top graduate students (a woman) got an interview after applying. As for me, I keep looking, too.

Dale Rasmussen, Seattle

▲

Isn't it amusing that Congress keeps prissy-footing around women in military combat? Here you show women on the fires, flying airplanes, deploying, running crews, handling physical crisis after crisis on the lines, and putting their lives in jeopardy when they fight or provide backup for fires. The journal's coverage was great.

Lalia Crockett, Boston

▲

I'd like to clear up a misconception of one of your readers. In Vol. 11, No. 2, Elaine Zieroth of Tonasket, Washington stated that women in Canada weren't allowed to fight fires. Fire control is the jurisdiction of the provinces, so while women may not be fighting fires in Ontario, that isn't the case throughout Canada. In British Columbia, you can find women on the fireline in any capacity. Having been in supervisory positions on both wildfires and controlled burns myself, I have found that my female firefighters are often my best workers.

Beryl Nesbit, Prince George, British Columbia

▲

As I read Burzinski's article on the Forest Service's Forest Fire Lab in Riverside, I was most favorably struck by the diversity of the work they do. One thing that I would like to ask though, is why did the Lab stop developing new technologies like FLIR and FIRESCOPE? Who is now doing that kind of work if they are not?

JoAnn Weimar, Baton Rouge, Louisiana

Section Editors

Women in Natural Resources seeks Section Editors for Query and Research in Progress Departments. Requirements: writing skills, knowledge of and membership in the professional community, ability to meet deadlines. A small expense stipend is offered. Send letter of interest and samples of your own writing to: Dr. Dixie L. Ehrenreich, Executive Editor, WiNR, Bowers Laboratory, University of Idaho 83843 (208-885-6754).

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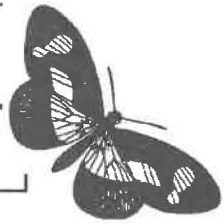


What is your wilderness philosophy? and how did you prepare for the work you now do?

Each issue, *Women in Natural Resources* asks the same questions of several readers and this time they were directed at women who work on wilderness units.

Linda Merigliano

Wilderness is a refuge where I can shed everyday distractions and become more attuned with what is really important in life. It is a place where I feel complete freedom. The peacefulness helps me leave little worries behind and feel a part of the natural world. I also value wilderness as a scientific resource where one can study or learn about natural conditions and processes in relatively undisturbed settings.

I don't believe that wilderness designation should be used as the only way to insure that roadless areas remain permanently roadless. Wilderness is one end of the development spectrum. We should instead be looking at alternate ways to protect roadless areas to provide opportunities for non-wilderness-dependent dispersed recreation. Only through this approach will we insure that some areas (designated wilderness) remain in the most undisturbed condition possible and truly provide a wilderness experience.

What do I like about working in wilderness management? I love being in the mountains all summer in an area most people can visit only on weekends or on short vacations. I love getting to know a wild place so well that you feel completely at home. The physical work of trail building and maintenance, walking for miles every day and camping out alone or with a co-worker, sharing information with people who are receptive to learning and who appreciate the new tidbits of knowledge are all different parts of the job I love. I enjoy teaching in informal settings, thus the education emphasis of the wilderness program is an ideal outlet.

Anne S. Fege

I really enjoy independent work and being able to implement ideas I feel will benefit the area. I like having lots of responsibility and being able to make the day-to-day on-the-ground decisions, working with a small crew or volunteers who are energetic, enthusiastic and dedicated to the area. Even though I have been in one area for 10 years, every year there are new challenges and progress to be made toward implementing new and innovative long-term projects. I truly believe that my presence makes a difference in on-the-ground wilderness conditions, and that is very satisfying.

At the House Subcommittee on National Parks and Public Lands Oversight Hearing on National Forest Wilderness Management on July 26, 1988 I was called as a witness. My testimony focused on the resource conditions and management issues on the Jedediah Smith Wilderness, citing such problems as poor trail conditions, snowmobile and mountain bike trespass, campsite damage by horses, large group use from nearby youth camps, administration of grazing permits, introduction of non-native fish and game species, and lack of monitoring information. I also described the local wilderness education program, volunteer contributions to trail maintenance, wilderness ranger staffing levels, funding shortfalls, and wilderness planning efforts.

Fortunately, my education gave me good credentials in wilderness management: B.S. degree in Natural Resources from Cornell University, and an M.S. degree in wilderness management from the University of Idaho in 1987. My thesis work was on monitoring wilderness conditions. I designed and taught a new course at the University of Idaho on that subject in 1988 and I was an instructor with the Student Conservation Association (SCA) Wilderness Work Skills Program for the past three years.

I grew up in Upstate New York and spent many summers exploring tidepools off the coast of Maine and hiking in the Adirondacks, then entered Cornell University to study marine ecology. After doing some volunteer trail work in the Adirondacks and teaching Outdoor Leadership Training, I applied for a SCA resource assistant position as a backcountry ranger and then worked one summer on the West Slope of the Tetons in the Targhee National Forest. Back at Cornell, I took a course on Wildlands Policy and Management, and decided to pursue a career in Wildlands Management.

I returned to the Targhee National Forest after school as a seasonal backcountry ranger and worked there for 10 years. While my husband was finishing his Forestry degree at the University of Idaho, I took a seminar from David Cole and that started me on the road to a Master's degree. In 1988, I accepted a permanent position on the Teton Basin, with responsibilities in dispersed and developed recreation.

Linda Merigliano works on the Teton Basin Ranger District of the Targhee National Forest in Idaho, and is responsible for wilderness coordination.

Melinda Waldrep

Wilderness is an invaluable, unique, but vulnerable resource. We, the Forest Service, among others, have been entrusted with protecting and perpetuating this national legacy. If we err in this endeavor, it should be that we have been too "pure," rather than liberal, in our interpretation of this duty. We must never be guilty of sacrificing the future for today.

I am a wilderness advocate, but an advocate of quality wilderness, not acres for acres sake. I oppose efforts to classify wilderness as the means to advance another cause, such as stopping timber harvesting. To do so is to degrade, dilute, and homogenize the National Wilderness System.

Once I encountered a rather distraught and weary couple when I was backpacking (off-duty) in the Shining Rock Wilderness. We had a brief conversation as we passed on the trail. They complained that they were on the wrong trail and had gone miles out of the way of their intended route because the trails were not signed. I sympathized, but suggested that there were no trail signs because the area is wilderness. It is supposed to be primitive, and pathfinding is part of the experience. I could tell that this was a new concept for them as they responded that they had never thought of it that way. As we parted they were still weary, but less dissatisfied, and had an expanded perception of wilderness.

This is so typical of many visitors to wilderness. They lose sight of the real pleasures and experiences this resource offers. They come to the wilderness as goal-oriented and destination-oriented as if they were still in their urban environment. They don't know how to find pleasure or excitement in the wild, the unknown, and the unexplored. One of our goals should be to expand the public's perception of wilderness and help them come to know the essence of wilderness. In turn, they should become more thoughtful and considerate users of the resource.

My degree in Landscape Architecture is from the University of Georgia. I've worked for 17 years for the Forest Service, starting in developed recreation site design on the Land Management Planning staff on the National Forests of North Carolina, and now I am responsible for dispersed recreation management. Wilderness planning and management have been part of my job in all these assignments.

If I had to give advice about careers in wilderness management I would say: Make your own opportunities. Learn all that you can about the resource and its management and establish yourself as being "the one in the know." Volunteer for the assignments that deal with wilderness. I have found that in the Forest Service, if you volunteer, everyone is more than willing to give you the job!

Melinda Waldrep is a Landscape Architect on the National Forests of North Carolina, and is responsible for wilderness and dispersed recreation management.

Anne S. Fege

Wilderness is a special place—spiritually, ecologically, and legally. I believe that every individual holds a personal value of wilderness and the natural environment, even though they may not be able to articulate it. I recognize a societal value of wilderness, as people better relate to others through their solitary or group experiences in wilderness. Most important, I look toward the ecological values of wilderness in 100 or 1000 years, when human activities and development have so altered all other land in this country. I struggle daily with others' expectations that wilderness be managed efficiently, logically, linearly. That is the framework for much of our commodity-based natural resource management, but perhaps one that can be replaced by the values articulated in "ecofeminism."

The wilderness concept is so eloquently stated in the Wilderness Act, and provides clear direction for our National policies. I recognize the reality of "on the ground" decisions, as managers balance their personal

WILDERNESS
1964 • TWENTY-FIVE YEARS • 1989

wilderness philosophies, agency regulations, expectations of diverse wilderness users, and other resource management constraints. I continue to listen to those perspectives, and try to recommend National programs and policies that will help field wilderness managers do a better job.

In my current position in Washington DC, I am responsible for recommending wilderness management policies on visitor use, wildlife and fisheries, mineral development, range, fire management, wilderness, education, training, technology transfer, and interagency coordination. Special projects currently include planning the first National Advanced Wilderness Management Training for line offices (including Regional Foresters, Forest Supervisors and individuals from outside the Forest Service in equivalent positions), review of outfitter caches in the Frank Church-River Of No Return Wilderness in Idaho, study of noise from aircraft flights over wilderness, protection of air quality in Class I wilderness areas, and revision of the Forest Service Manual on wilderness management.

I came to this position with experience in diverse natural resource and scientific issues and program management. My undergraduate degree is in biology from Kalamazoo College, a Master of Forest Science degree from Yale University, and a Ph.D. in plant physiology from the University of Minnesota. Another equally important preparation for the work I do was gained through Girl Scouting. I've been a Girl Scout since the age of seven, and gained both skills and a love for the outdoors through those camping experiences.

I taught environmental education for a semester in 1971 and spent all my free time reading about environmental issues and activism. That reinforced my choice of biology as a major and later natural resources as a profession. I took a course called Preservation Ecology in the first semester of my Master's program, and little did I know that I would contribute to wilderness policy many years later.

I joined the Forest Service in 1983, as Assistant Director for Planning and Applications at the Northeastern Forest Experiment Station. I was responsible for a number of efforts: long-range plans and budgets, technology transfer, and coordination of the station's programs on the forest effects of air pollution and acid rain. Prior to joining the Forest Service, I conducted research at the University of Minnesota on the physiology of hybrid poplar propagation, carbohydrate utilization in young trees, and the evaluation of research programs. I also worked as a program manager for the Department of Energy and managed a small consulting company. From 1986 to 1988, I worked on the Timber Management Research Staff, in Washington, DC. I had technical responsibility for tree physiology programs, and developed a new initiative on forest productivity and health in a changing atmospheric environment. As part of a one-year interagency Executive Potential Program, I was Acting Deputy Supervisor of the Olympic National Forest in Olympia, Washington, from March to June, 1987.

My wilderness travel in the past two years has been mostly "official travel." That usually means a day hike with a half dozen wilderness rangers, volunteers, and perhaps the District Ranger. Or it means a four to six-day backpack or horsepack trip with 10-15 other people, traveling and camping in a large group and usually talking constantly about wilderness problems and possible solutions. It was only when I spent four days in the Mink Lakes Basin of the Three Sisters Wilderness in Oregon last June with three friends, that I realized I'd been missing out on the "wilderness experience" during my official wilderness trips. (Since my husband and I are avid bicycle touring enthusiasts, I hadn't been on a wilderness or backpack trip for more than 20 years.) The days were such an escape from my life in Washington--so unhurried, so unscheduled, so quiet, so peaceful, so renewing. I came back with a promise to myself that I'll return at least once a year to the wilderness alone or with a friend.

Since accepting this position in January, 1988, I have listened to how people feel about wilderness, talked with professional wilderness managers, read everything I could get my hands on, spent time in wilderness around the country, and thought often about my personal wilderness values and those of the agency. I consider my leadership role to involve listening, building cooperation and consensus, developing programs to meet the needs at the local and regional levels, communicating about wilderness both inside and outside the Forest Service, and constantly evaluating ideas and policies against the Wilderness Act.

I have a good understanding of the ecological processes that operate in wilderness and natural systems, and of the scientific value of wilderness. Much of the attention has been focused on the values of recreational use in wilderness in the past, and one of my goals is to enhance the understanding and commitment to the scientific and natural values of wilderness.

Anne S. Fege is a National Leader for Wilderness Management and Special Areas in the Washington, DC office of the Forest Service.

Janet F. Hurley

As a wilderness manager, I'm probably less purist than most, because my experiences have handed me some challenges where use of motorized equipment was the only way to meet our long-term goal of restoring wilderness conditions. This has given me some interesting blends of using high-tech equipment like helicopters and fork-lifts along with good ol' horses, mules, misery whips, and campfires. I have also worked with grazing allotments in the wilderness, and I enjoy the challenge of blending wilderness and range resources.

My love of wilderness and mountains goes hand-in-hand with my love of horses. Therefore, I am not thrilled with the trend toward llamas in so many areas. Whatever the practical advantage of this beast may be, and I have concerns about that, I think we need to recognize that much of the resistance to llamas comes from a values conflict, and this will not be resolved by polarizing or putting down one group by the other.

Fortunately, I have a philosophical home on the Gila Wilderness because most of my peers share the belief in maintaining our high skill level with the old traditions of packing. I like to think Aldo Leopold identified with the Gila Wilderness as a place where future generations could go hunting and fishing and take pack trips.

The primary value of wilderness for me is the personal growth and challenge that it provides. It is a place where we can learn about ourselves and about the natural world. Therefore, we must use it responsibly—ethics and knowledge are extremely important. Whatever we do in wilderness, we must do it in a way that minimizes our presence and impacts on the land.

My favorite wilderness challenge occurred in my previous position, on the Emigrant Wilderness in the Sierra Nevada. As District Resource Officer, I had the task of cleaning up an old mining claim in the most remote corner of the wilderness—at least 20 miles from the nearest highway access, and adjacent to Yosemite National Park. We spent nearly two years in planning and preparation, including writing an environmental assessment to obtain approval for use of motorized equipment to remove 100,000 pounds of scrap metal and other material. We worked with local outfitters, and obtained cooperation from the U.S. Marine Corps for labor and transportation for the material to a disposal site outside the wilderness.

We saddled up our horses and rode in right after Labor Day, only to be hit by an early fall snowstorm that dumped almost four feet of snow on us. Thus the project became a survival challenge as well as a logistical one (in the process, we rescued three backpackers who where stranded by the storm). This was my longest stretch in the wilderness—16 days total.

The stranding also gave me an interesting experience in being a woman in a totally male world. And that included supervising the Marines who were working with me. In the end, the sun came out, the snow melted, the discarded bulldozers, oil drums, and other garbage were removed, and an eyesore of 20 years' standing was restored to wilderness conditions.

My B.S. degree is from the University of California at Berkeley in Conservation of Natural Resources and my Master's Degree in Wildland Resource Science is also from Berkeley. My research looked at the effects of geothermal development on small mammal populations. I joined the Forest Service in the Pacific Southwest Regional Office in San Francisco, as a staff specialist on the Fisheries and Wildlife Staff, then transferred to the Stanislaus National Forest as Forest Biologist in 1980, and in 1984 became Resource Officer on the Summit Ranger District there. I was responsible for wilderness management, grazing, wildlife, minerals, and dispersed recreation.

As I look back, I consider my most important preparations for wilderness work to be the backpacking and traveling I have done. I learned to ride, to own and care for a horse, and to pack and travel in the wilderness. For a number of years almost all my vacations were in wilderness, sometimes far from home. This not only gave me the skills I needed to move into wilderness work at a rather high grade level, it also gave me a perspective on wilderness from the point of view of the user.

When people ask me about getting into the work, I am forthright about telling them that most wilderness jobs are low-paid, seasonal work with no security. In higher-level positions like mine, the true wilderness work is maybe 10 percent if you're lucky. Like all natural resource careers, wilderness management requires persistence, dedication, and love for the resource: for wilderness, that may be true to a higher degree than most. Furthermore, competition for jobs is keen so skills and qualifications should be the highest. Being personally flexible is important, because the work usually requires mobility and willingness to work long hitches in remote locations. This is tough on your personal life and relationships! Also, wilderness workers need a broad range of skills in management, education, and working with people as well as the physical strength and skills to survive out there in the woods. It's a tall order, but it's a very special occupation for those who do make it.

Janet F. Hurley is District Ranger of the Wilderness District on the Gila National Forest in New Mexico. She manages a large part of the 558,000-acre Gila Wilderness, established in 1924 by the Forest Service as the first wilderness area.

A veteran federal employee sees serious roadblocks ahead for agencies looking for women to employ and promote. Traditional career paths won't suffice, but alternative thinking will.

Are Federal Agencies Serious About Workforce Diversity?

Victoria N. Gillam

The concept of workforce parity is relatively simple in theory: the Federal government should employ a workforce representative of the cultural and ethnic diversities which our nation has to offer. This would enable the Federal Government to take full advantage of diverse and virtually unlimited human resources.

And further, it is generally understood that the decisions and policies being established in the Federal Government today cannot be truly representative of the people of the United States when these decisions and policies are being made primarily by white males. To achieve this diversity goal in reality, however, can be very complex and painful for Federal agencies undergoing the transition.

To achieve workforce parity, natural resources agencies must first face up to certain facts. They are:

- The majority of women and minorities currently employed in natural resources agencies do not have an academic education in natural resources.
- Women are primary care givers in our society. Many women in today's workforce are responsible for child and/or elder care. The number of elder Americans is increasing. This care-giving trend is therefore spiraling upward, will continue, and will have even greater impact on women, including women in natural resource work.
- Because the majority of women in natural resources agencies are in the lower grades, women make less money than men.
- Women are less mobile than men.

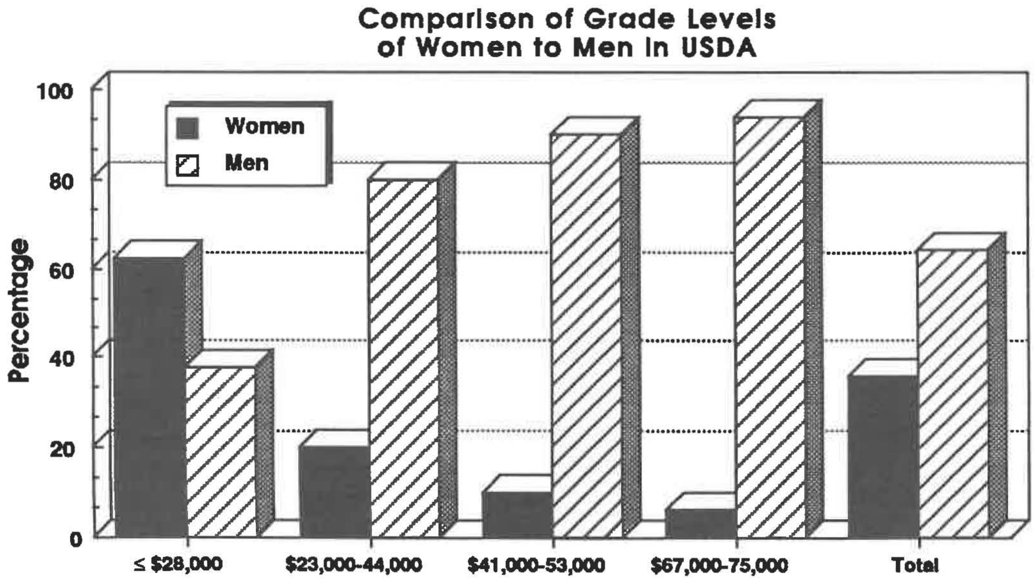
How do these facts affect agencies who want to achieve workforce parity? What alternatives to the traditional ways could be explored?

Education

THE CURRENT SITUATION

Women currently employed in natural resources agencies have less education in the traditionally male-dominated natural resources fields than men. Although this trend is changing, the potential to meet workforce parity through recruitment of new graduates alone is unrealistic. Managers should be sensitive to the fact that traditionally, men have been groomed for success through career orientation while women have been groomed for success through marriage, family, and the traditional nurturing roles.

There are, at the same time, inherent biases against persons in scientific arenas who do not have a minimum college level education. Some of the perceptions about persons without a college degree (and in many cases, advanced degrees) include that they are: underachievers, less intelligent than persons with higher levels of education, less motivated, less capable of managing and supervising others (especially if those being supervised have



Data is from USDA/Office of personnel

higher levels of education).

These perceptions inhibit managers from hiring and promoting otherwise highly qualified candidates to higher level positions. We need to explore all possible alternatives to overcome this barrier, one which we can control.

ALTERNATIVES

One possibility is to offer alternative certification. The State of New Jersey recently started a program of alternative certification in the teaching profession (specifically designed to reach workforce parity). This program allowed highly qualified professionals who did not have the required academic degree in education to qualify for teaching jobs. New Jersey offered a one- to two-year program where individuals started teaching, earned a regular teacher's salary, and the State paid for intensive night classes to allow these persons to meet the required academic standards in the teaching profession.

Natural resources agencies have a similar dilemma. Not enough women and minorities are graduating with degrees in natural resources fields to meet recruitment needs. Recruitment for these individuals is highly competitive and private industry often offers higher salaries. To alleviate the almost certain failure of natural resources agencies to meet minimum parity standards, the agencies could offer alternative certification programs in all fields—administration, forestry, range, wildlife, and others—to allow persons who wish to break into those career positions and at the same time go through an intensive training (both academic and experiential) to meet required standards.

Some persons might think this is a radical concept, but to accomplish workforce parity we need radical alternatives.

ALTERNATIVES

The Forest Service has already authorized employees to take advantage of " Maxiflex" which is an excellent flexible work schedule alternative (even allowing employees to accumulate "carryover" hours). Most government agencies allow some type of "leave sharing" for employees with terminal or severely debilitating illnesses.

Government agencies could take the leave sharing concept a step further and authorize leave sharing for employees who must care for children or elder relatives who are ill. Agencies could foster networking for those persons with child and elder care responsibilities to allow tradeoff caregiving. Women particularly should request stress management seminars specifically designed for persons with caregiving responsibilities. Attendees could then network during the seminar.

Managers should schedule caregiving awareness workshops for supervisors of caregivers. Agencies with a "Concern" program (a program designed to provide employees information on physical and emotional health, as well as a referral to counseling and other social support services) could develop a caregivers newsletter. The newsletter could be designed to provide information on facilities, an opportunity to network, and the latest information and tips for stress management.

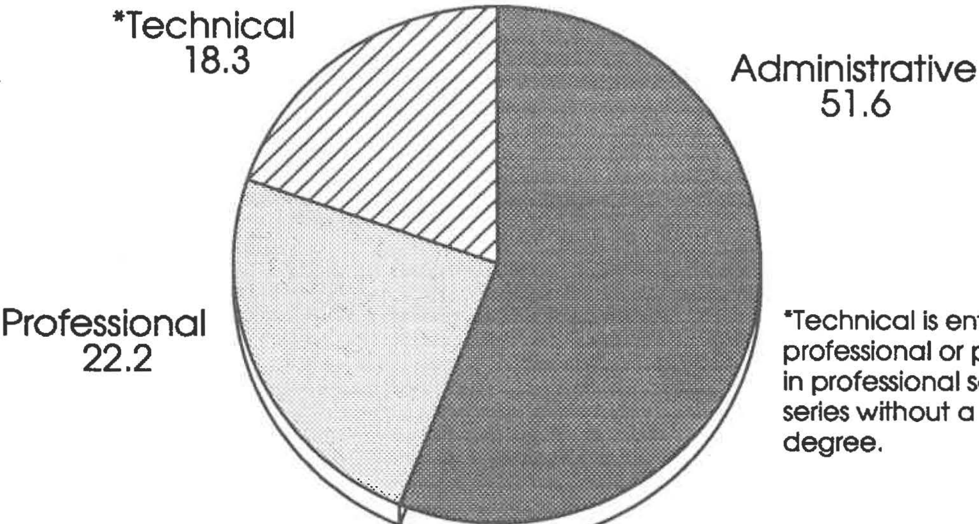
Management needs to become sensitive to caregiving, because in pursuit of parity—which means among other things, recruiting and keeping women—they must recognize the reality of hiring women who traditionally pick up the nurturing role. Some managers, however, need to be educated to the stress (financial, emotional, and physical) that caregiving places on individuals.

Caregivers

THE CURRENT SITUATION

Often persons with children and/or elder care responsibilities have special needs and problems. They need flexible work schedules and the ability to use annual and sick leave when children or elders are ill. They have constraints on their ability to travel. These persons, most often women, have higher financial, emotional, and physical stress. Caregiving is a hidden deterrent to energetically pursuing a career.

Women in USDA Grades 9-12



*Technical is entry level professional or persons in professional scientific series without a college degree.

Income

THE CURRENT SITUATION

Women clearly make less money than men (bar graph). Agencies should ask themselves how does the income of women affect workforce parity issues? They might be surprised at the answers.

Financial constraints limit the ability for anyone to obtain a higher level education. Tuition and books, combined with caregiving responsibilities can prevent an individual from meeting education requirements. And this particularly impacts qualifying for higher level positions or moving into a new career field which agencies need to facilitate in order to place women at all grades.

Networking, whether informal, formal, social, required during business hours, or after work, is part of most Federal agencies' culture. The cost of many social activities (where a great deal of networking occurs) reduces the ability of persons with lower income to participate. This is a hidden form of discrimination.

ALTERNATIVES

Again, agencies could use the "alternative certification" course of action to address this issue. By supplementing education costs and moving persons into new jobs while they receive training and education, the cost impact for the individual could be significantly reduced. Alternatives need to be explored to allow all employees access to social activities where networking occurs.

Mobility

THE CURRENT SITUATION

Women are less mobile than men. Moving costs money, regardless of promotion or location. The need to change caregivers can be traumatic and costly, especially if a nearby family member provides reduced cost or free caregiving services. Married women traditionally follow their husband's career. Many husbands now recognize the importance of their spouse's career, and are willing to move. These progressive-thinking men, however, are not in the majority.

Forest Service culture is one where an individual begins a career at the District level, graduates to the Forest, then the Region, then the Washington Office, and back out to a higher level field position. For example, my personal experience in attempting to move to a field position has been fraught with frustration. Although I have 16 years of Federal Government service, only four have been with the Forest Service, and all within the Washington, D.C. office. I have been attempting to lateral to a Forest for the past two years. Although my qualifications are strong, my lack of District experience has been a significant barrier to my ability to lateral. This is a common problem for those of us who did not join the Forest Service using the traditional path. Mobility, however, appears to be an unspoken requirement for those who wish to continue to progress in their career with the Forest Service.

ALTERNATIVES

Organizational culture needs to be clearly defined as a culture and not a regulation, policy, standard, or requirement. Managers and personnel officers need to be sensitized to this issue, aware of the unnecessary barrier it imposes, and reoriented/reeducated on how to select the highest qualified candidate (which may not be the most traditionally experienced candidate). Managers should offer experiential detail and crosstraining opportunities to all employees who show initiative and interest. These opportunities could be within the agency, other government and state agencies, or private industry. These experiences could not only broaden the individual's horizon, assist the agency in broadening its horizons, but could also allow for a network of candidates for future positions.

Summary

Natural resources agencies cannot solve all of the problems that face women and minorities, but they certainly can and should be aware of these issues and their impact on the organization. These issues affect an organization's ability to manage, grow, and excel on a daily basis, but are often not even considered.

The first and primary task of managers is to sensitize individuals to the issues and their impact. The second most important task is to identify individuals for whom these issues apply. Once managers' awareness levels are raised—and worthy individuals are identified—I anticipate efforts to deal with these issues will blossom. I strongly feel that most managers want to do the right thing and truly want to achieve workforce parity.

It is not, however, solely their responsibility. We, as individuals affected by these issues, must speak out, clarify all unnecessary barriers which inhibit our ability to progress in our careers, sensitize our colleagues to these issues, and foster an environment of cooperation, enthusiasm, and action. The possible alternatives are limited only by our own imaginations and willingness to take initiative.

Victoria N. Gillam has 16 years of Federal Government experiences, all with the U.S. Department of Agriculture. She began her Federal career at age 15 as a GS-1 filing clerk. Gillam is currently a GS-12 Administrative Specialist with the International Forestry Staff of the Forest Service in Washington DC.

This sheep operation may not be of the size found in Australia or Montana, but it supports a way of life which the owner is proud to teach others about.

Intensively Farming Grass (and Sheep) in Vermont

Diane M. Calabrese

To visitors, it looks like Vermont landowner Doug Flack is rearing sheep, but as he explains it, he's "intensively farming grass."

By moving some 200 sheep from paddock to paddock to feed, Flack works to promote the growth of the best mixture of grass and clover for the animals. The sheep harvest the grass and keep it short so clover grows.

Flack's operational scheme currently hinges on hungry sheep substituting for machines that cut: saws, axes, grass harvesters. Ten years ago, all of his 60 acres were covered with thornapple, thistle, steeple bush, and golden rod. The sheep nibbled and gnawed away and converted from brush the 30 acres of paddock land, and another 30 acres now used for rough pasture and hay crops.

Flack was not always a grass/sheep farmer. He earned a Ph.D. in ecology from the University of Wisconsin in 1970, then followed his profession for almost a decade, studying fragile ecosystems and endangered species in Canada and New Zealand. Flack had made periodic visits to Vermont since he was a boy in the 1950s, and he knew the state well. A farm of his own had long been on his mind, and on one return visit to the United States, he bought land. Practical considerations such as relatively "inexpensive land" influenced him. And, so too, did emotional ties: he liked the people.

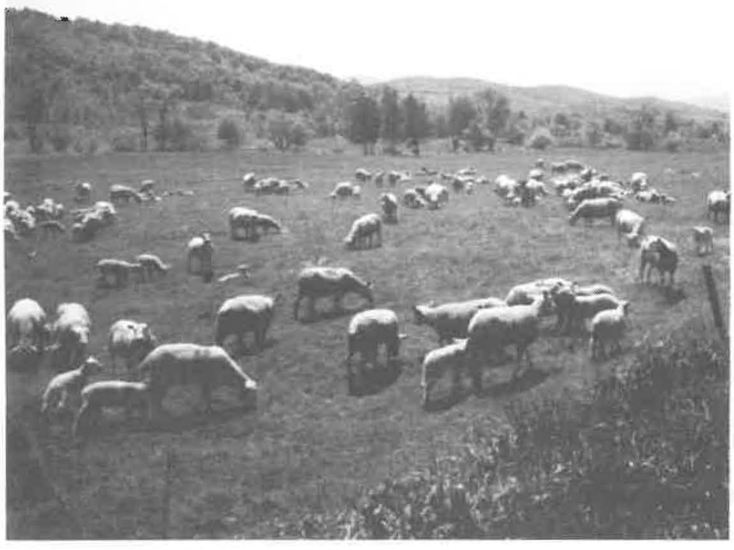
Flack did not grow up on a farm. He was born during World War II and moved from navy camp to navy camp with his family, and then, to suburban New York City. His grandfather, who he says, had a lot of influence on him, was a "cigar wrapper farmer" in northwest Florida, "until the 1970s when the farm collapsed totally because of outside economic forces."

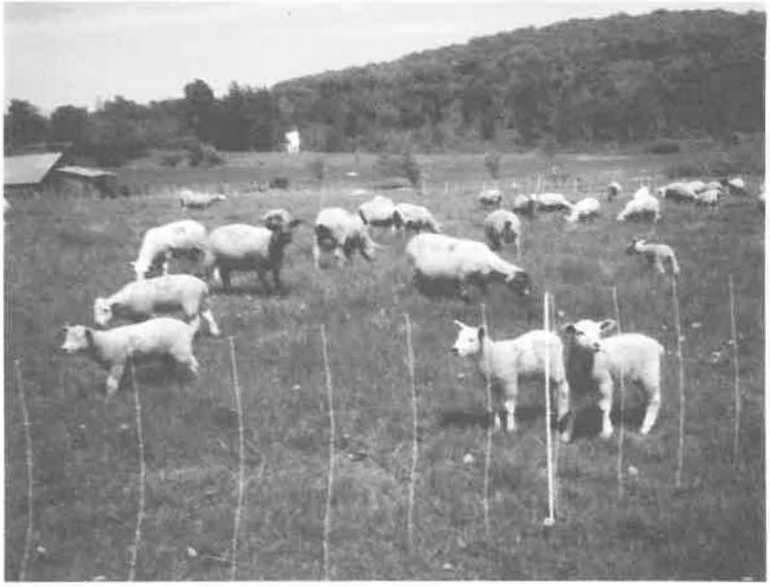
According to Flack, "The northeastern United States is the ideal environment to grow animal-harvested forage. The species composition of forage is much more complicated farther south. In the northeast there's a nice mixture of plants and climate." Flack contends there are few unwanted species and "even thistle is a minor problem."

This is not to say that he doesn't work at improving what he has: the soil on Flack's farm is hard-pan glacial till. It's very acidic, and he has to apply lime-ash (at two tons per acre in two applications) to new grass areas. In some areas, huge boulders left behind by the last glacial sheet were moved. And, he introduced New Zealand self-seeding clover and white clover.

The Lake Champlain Valley where Flack's farm is located had about 500 dairy farms in 1978, and two sheep farms. Flack chose sheep in part because they are less expensive than cows. He chose them, too, because he knew the care that dairy cows require. And although the need to invest long hours was never a concern, he rejected a relentless 365 day-a-year, twice-a-day commitment to milking.

Even though 30 acres are at the heart of Flack's grass farm, there is much more to his operation than simply moving sheep from paddock to paddock within it. The paddock size constructed for the sheep must be monitored to match the conditions of the forage and the number of the sheep. If the sheep are given too much space, they will eat in a haphazard way and trample much of the grass. As Flack humorously notes, "It's the responsibility of the sheep to manage





the grass—by eating it—so that clover can compete." Moreover, "the intensive grazing encourages tillers (lateral expansion) of the grass itself."

Electric fences are key to the operation. Flack uses a combination of permanent and temporary electric fences to restrain the sheep in paddocks. The permanent internal fences are 3-wire; those on the perimeter are 5-strand. The movable fences fold down so that sheep can walk over them to enter new paddocks, thereby minimizing the number of fences to be moved at any paddock shift. A float valve in a tub and a long hose to a water pump at the stream makes it possible for Flack to move the water source for the sheep when the sheep move to a new paddock; the sheep have no problem taking the twenty odd drinks they need each day. A mineral lick is positioned near the water source.

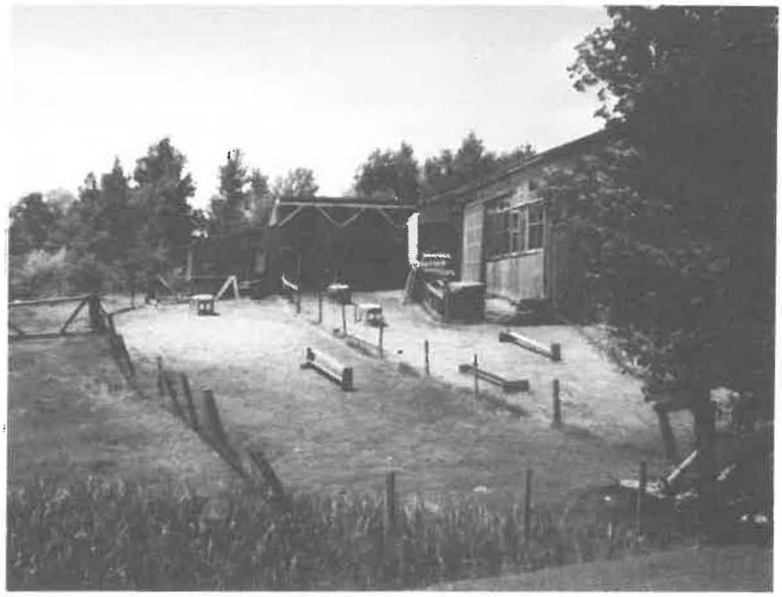
Visitors are encouraged to come to the Flack Farm, because it is financially rewarding to him for them to understand the merits of electric fencing. They come away with a wealth of information about sheep behavior and about how proper voltage improves sheep safety and survival from predators. At this point, Flack still needs other income to keep his farm in the black and that income comes from the movable electric fence he sells. There's little doubt that some intensive grass farm converts will buy their fences from him because he believes in his product. He teaches, for example, that "odd-shaped paddocks do odd things to grazing behavior" and he avoids any shape other than four corners. He points out the "nutrient-robbed zones along the fences, which occur because sheep face the fences when they eat. It's important to move the fences so that sheep will deposit manure evenly." He does not believe "electric perimeter fence should ever be turned off because predators learn quickly." And, he says that because "lambs do teenaged, daring things, low voltage is the most dangerous to them: they are not deterred by it and will continue to crawl into the fence until they become entangled and die."

Flack experiments with the fencing needed for other kinds of operations, too. He suggests, for example, that an entire local farm (about 70 dairy cows on 36 acres) could be divided into paddocks with an $800 investment. His experiments have successful precedents. This kind of intensive pasturing has been a part of the farm enterprise of Switzerland, The Netherlands, and France since the 1940s, and, of course, did not begin with Flack in Vermont, either. There were other advocates when Flack began his effort: Henry and Cornelia Swayze (in Turnbridge), and John Rice (then an extension agent). Bill Murphy, a professor at the University of Vermont, is also a strong believer in the approach, which he describes in *Greener Pastures on Your Side of the Fence*. Murphy was reared on a dairy farm in Wisconsin, and later was an agronomy student at the university there. He says he did not learn about intensive grass farming, however, until he went to Brazil to study on a post-doctoral appointment. To paraphrase him, he stumbled off the plane and into intensive pasturing.

These historical and concurrent followers of the methodology have had to continually re-figure basic principles. For example, what is the seasonal fluctuation of the regeneration (resting) period for sheep-used paddocks? Flack says, "It's about 10 days in May, 21-25 in June, up to 36 days by July and August. But there's a greater dilemma, and that is, what to do when the grass gets away from you."

Grass farmers try to keep the grass height below four inches and they do this by matching numbers of sheep to the rate of growth. Even so, there is a certain amount of unpredictability in the system. April 1989, for example, was an unusually cold month in Vermont so by the first part of May, the grass at the Flack farm was so short that "it took 25 acres to feed 100 sheep for 10 days." There are other options depending on the time of year. "A farmer can buy sheep and graze them in June and sell them in July, or declare the grass too tall and save it for hay." Flack has tried both methods. His single objective though, is to tune the link between the sheep and the grass so finely that he does not have to exercise either option.

The enthusiasm that Flack exudes aside, the beginning days as a grass farmer were not easy ones. Flack "joined the Vermont Sheep Breeders Organization before I did just about anything else," but he had no thoughts of adding a single sheep to his farm in the first year. He and his family were building a house and living in a tent. (His former wife notes that their phone was on a tree.) Then someone came to the would-be door of his house, and begged him to take two sheep, a sterile male and an overweight (effectively sterile) ewe. His plan for a sheepless year evaporated. The sheep had to eat, so they began to reduce his woody vegetation to stubble. The next year, Flack bought his first sheep, "rat-bag sheep, sheep that had nothing particularly going for them—backyard sheep with no record of genetics." But they were cheap, he was short of money, and so it began.



Another strong part of Flack's motivation for teaching derives from his belief in the importance of "cultural diffusion." He thinks "farming is important in itself and it's also socially very important," and he hopes more people will adopt grass farming. Flack says he "finds it painful to see the very reduced environment in the United States for farming," and he is "motivated by the realization that properly practiced grass farming could make much livestock farming in North America more profitable and more healthy—for consumers and farmers."

Slowly, Flack is converting from meat to the more expensive wool sheep although "the New England market for lamb is great." Others do the slaughtering for him once a year in late summer, and others do the shearing on the few sheep he now has for producing wool. Workforce considerations will become larger in the near future. On her college breaks, Flack's older daughter is building a cabin on the farm. His younger daughter will start college this year. With the family labor pool shrinking, Flack enlists neighbors to work with him.

In the ten years that Flack has been in the grass and sheep business, the number of other farms doing the same in the Champlain Valley has crept upward toward 100. One valley farmer has begun to graze sheep for milk, but Flack noted he has "already started to lock horns with his brother, a dairy farmer, over the issue of grain vs. grass." There's a persistent belief among dairy farmers that the butter-fat content of their milk will be too low if cows are grass fed. To counter this, Flack marshalls evidence from his own ecological background, and that of former research colleagues, to build a case showing that rapidly growing grass—that which is grazed—has the proportions of amino acids needed to produce good milk fat. It's clear from the growing numbers who are converting to grass farming in the Champlain Valley that many people think Flack has been a good teacher: they are also seeing his results.

All of his practices are not praised, however. Some visitors who fear transmission of tapeworms from ewes to grazing lambs criticize Flack for keeping lambs and mothers together in paddocks. But he finds the lambs benefit from and tolerate treatment for tapeworms (every 21 days) and the co-grazing makes paddock movement much simpler. Other visitors mention that Flack does not shelter his sheep in the summer even though he uses and recommends a lean-to shelter for Vermont winters. Some might also be surprised to see the beaver ponds in the farm stream. Flack encourages the beavers because of the diversity of habitat—and birds—they bring. It's true the beavers harvest clover, but they also take the troublesome aspens.

The farm itself changes constantly as the number of sheep grows. (One thing that doesn't change is the start to Flack's day at 5 a.m.) He pushes ewes up the hills to graze on new woody vegetation in early spring and makes plans to "increase the amount of tillable land until it will produce enough turnips for the sheep to feed on in October and November."

Long-term, Flack's goals are clear. He would like to have "more introspective time and more time for the community." Flack is an acutely knowledgeable birder, who leads birding groups from his house on Sunday mornings. He's not just a birder or just a farmer, though. Flack's life is as rich as the Vermont country-side. He square dances, sails, and lends his expertise to several local community boards. He hopes to "end up with a beautifully balanced operation that's a low energy-input farm." He will live his belief that an "economic system can be balanced against the humanizing influences of farming."

Diane M. Calabrese is an entomologist and writer based in Dedham, Massachusetts. She works through her own consultancy: PAPILLONS. Calabrese is a Section Editor for Women in Natural Resources *and a series editor for Iowa State University Press. She specializes in the study of semi-aquatic insects.*

This Sierra Club activist describes cooperation between Forest Service management and public lands volunteers on the Monongahela National Forest.

Volunteer Activists on the Public Lands: A Good Deal All Around

Mary Wimmer

Since early 1985 I have been working with the U.S. Forest Service on the Monongahela National Forest (MNF) in West Virginia as a Sierra Club activist. The role permits me to exercise a privilege U.S. citizens have of direct participation (by law) in management of their public lands. Living in a state where public involvement lags 10-20 years behind other states—especially from the environmental issues perspective—I am grateful for the example set by West Virginia's federal land managers.

I have been involved with the Monongahela National Forest from development of their 1986 Land and Resource Management Plan, through its budgeting and implementation. At the same time, I have studied and worked on (with management) a diverse set of issues the Forest has faced over the past four years. We've had major and minor controversies.

I should say at the outset, however, that I often regard this work as fun—and all of it has served to enhance my MNF recreating, including leading outings for pleasure and for trail maintenance through the West Virginia Sierra Club Outings Program. It has widened my horizons: I also present talks on semiprimitive recreation on the Forest to a wide variety of people. As a result of my experiences with Federal agencies, I have now begun working with state agencies to bring multiple use forest planning—with public involvement—into management of West Virginia's largest State Forest, Coopers Rock.

The time that has been devoted to this is volunteer time. I do not get a salary, although most of my expenses are paid. My full time job as a biochemistry professor at West Virginia University puts bread on the table. It is this perspective, that of the volunteer citizen who desires to participate in public land management, that I would like to discuss here. I have learned some lessons about public participation and the Forest Service.

Setting The Stage for Commitment

Developing a relationship with the Forest Service was not exactly in my life's plans in 1986. A biochemist by training and profession, I knew nothing about forestry. In fact, one might say that I was rather forced into learning about forest planning when I accepted the position of conservation co-Chair of the new West Virginia Chapter of Sierra Club. The Draft Management Plan and DEIS (Draft Environmental Impact Statement) for the Monongahela National Forest was released for public comment soon after. Prior to our first meeting with the Forest Service, I had taken a cursory look at the inch thick tomes, and had no substantive comments to offer at the time.

At that first meeting, there were five Sierrans, Forest Planner Gil Churchill, and Forest Supervisor Ralph Mumme. I had come away impressed, and soon after made the commitment to jump into this thing called forest planning. The MNF folks had been cordial, professional, and sincere. They took this business seriously. Despite how green we were, I did not sense arrogance on their part: they did their best to answer our questions and address our meager (at that time) concerns. I wanted to get to know these folks. That one meeting virtually changed my life.

Positive Resolution of a Major Controversy

Two other Sierrans and I began an intense self-education in forest planning, with Churchill's assistance. We set up a committee to digest the draft Plan, write an evaluation, then began to publicize our findings to encourage public input. When the public comment period was extended 30 days due to intensifying public pressure against the draft Plan, I took five weeks vacation to give talks around the state on how to change it, and to help edit our written evaluation. At the close of the comment period, West Virginia Sierra Club submitted an 82-page document of comments, followed later by a 15-page addendum.

National Forest controversy was not new to West Virginia. In fact, a now classic lawsuit regarding clearcutting on the Monongahela resulted in the 1976 National Forest Management Act. In 1985, when nearly 4,000 letters and phone calls reached the Forest Supervisor—most in opposition to the draft Forest Plan—Forest Service management did not retire to the back room, but rather they responded openly, and catalyzed even more public participation.

Our re-drafting meetings and work sessions were opened to the public. I spent additional days working on acceptable language as well as land allocations. The result was an altering of the draft Plan to emphasize recreation and wildlife, as the public indicated they desired, instead of road-building and timber production. Most importantly, a strong bridge of open communication was built between West Virginia Sierra Club and the Forest Service that later served us well. Resolving such a controversial issue by negotiating around a table rather than in the courts put the Monongahela in National Forest history books. The Final Draft Plan and EIS were signed in July 1986.

Lessons In Bridge Building

WHAT I THINK WEST VIRGINIA SIERRANS DID RIGHT:

① Our communication with the Forest Service was open, direct, and constant, and we always gave them the first crack at answering questions. We never surprised them: they received our alerts, copies of letters, schedules of our public engagements, and results of each. They always knew what we were thinking: we had nothing to hide.

② We made certain we had our facts straight prior to any public statements. In order to regulate the flow of information, I was identified as our single spokesperson to avoid conflicting statements. This required becoming educated, and we spent a great deal of time on this, with the Forest Service doing most of the educating. We were consistent with our concerns.

③ Our message to the public was that the public comment period was another step in the planning process. This was their opportunity to tell the Forest Service what they wanted. They could change the draft Plan. We were never put in a "defensive" position because our arguments were not based on emotion. We did not attack Forest Service personnel, but rather praised them in public for working with us.

④ We found things to support as well as not to support in the draft Plan, and we presented both. Most other groups (and we worked with many others) focused only on the negative. The Forest Service told us more than once how much they appreciated our more balanced approach.

WHAT I THINK THE FOREST SERVICE DID RIGHT:

① Forest Planner Gil Churchill worked closely and cooperatively with us. He was open, competent, cordial, and committed to public involvement. He was a fine and willing educator, and provided requested data or other information without delay. He was prompt in answering all our letters and phone calls, and met with us on a regular basis. Importantly, he had the support of his boss and his boss' boss in working with us to resolve the controversy.

② The Forest Service offered materials for me to use in public presentations on the draft plan in order to further public input. (I always acknowledged this cooperation.) Items such as maps, slides, response forms, and issue papers would be sent quickly. Forest Service employees attended one of my public forums, and transcribed the tapes from another. They knew what I was saying and were always interested in the response I received. A relationship based on mutual respect and trust resulted.

③ Whenever invited to speak about the draft plan, Forest Service management responded positively and without hesitation. The Forest Planner himself went, not someone else from the staff.

④ When public pressure intensified, the Forest Service (encouraged by West Virginia's Senator Byrd) extended the public comment period for 30 days. It was during this extension that we did most of our publicizing. This additional time prevented a shutting off of the process prematurely to avoid additional comments. This flexibility clearly reflected Forest Service commitment to the spirit as well as the letter of the law.

⑤ The open re-drafting sessions (as well as a newsletter designed to update the public on the Plan re-drafting progress) were critical to resolving problems. The sessions were run very well, with pre-and post-session work packets sent to all participants. When a stumbling block was reached with the Forest Planner, the Supervisor would step in and the issue would be resolved through further discussion with those involved. By and large, the Forest Service respected and responded to the consensus.

More Bridge-Building and Cooperative Projects

My interaction with the Forest Service did not end with the 1986 Forest Plan. The next three years would include offshoots of the relationship the Plan work fostered.

MON TRAIL RECOVERY SERVICE PROJECT

In November 1985, West Virginia was hit by a devastating flood. Some $7 million in damage was sustained by the National Forest. When I inquired how the Sierra Club might help, Forest Planner Churchill suggested a cooperative trail repair effort, and thus began the Mon Trail Recovery Project of 1986. The Forest Service provided tools, hard hats, technical advice, and training for our volunteer work leaders. Outings Chair Paul Turner and I scheduled the outings and organized the volunteer labor. By the end of the year, 90 volunteers had put 2,000 hours on 88 miles of trail, earning WV Sierra Club a Certificate of Appreciation from then Forest Service Chief R. Max Peterson. The Mon Trail Project is now in its fourth year.

MON NATIONAL FOREST BUDGET

Once the Forest Plan was finalized, our support and commitment toward its implementation followed because we had ownership in this Plan along with the Forest Service. (This is an important point made by Gil Churchill in an article in the *Journal of Forestry* March 1989 entitled Why is sharing power so bad?) I had close contact with our Congressional delegation during the planning debate, and I now urged them to provide the balanced multiple-use budget necessary to put the new Plan into effect. Over the past three years, the budget provided to the Monongahela has enabled past imbalances in multiple-use management to begin to be corrected.

Eastern National Forest Planning Conference

In June 1987, I organized a conference through Sierra Club entitled "Eastern National Forests: Steps to Take After the Forest Planning Process." Designed primarily for eastern forest activists, 60 people from 24 states came to Washington DC to attend. The Forest Service was active in leadership roles and provided a three-hour discussion period with the Chief as the highlight of the meeting. Ours had been a positive experience on the Mon: otherwise, it is unlikely that I would have been as anxious to have Forest Service participation knowing of controversial relationships on other National Forests.

Forestwatch and USFS Interdisciplinary Team Leader

The Eastern Region's Integrated Resource Management approach to project planning in implementing forest plans went into effect soon after our Plan was finalized. Several West Virginia Sierrans joined me in opportunity area analysis on a Forestwatch Team. There are important issues facing the Forest in which we are involved: military training, off-road vehicles, super highway development, and minerals management.

In 1988 I was invited to serve as team leader to begin preparing an environmental assessment to identify projects for the Little Mountain and Peters Mountain Semiprimitive Areas—about 13,000 acres of MNF land. The three other team members were Forest Service employees, including a new Forest Planner. The NEPA document we produced (my first, researched and written from scratch) is being used as a model for other opportunity area analysis. Forestwatch Team members are now being placed on other Interdisciplinary Teams.

Changing Personnel

Just before the Mon Forest Plan became final, Forest Supervisor Mumme was transferred, followed soon after by Forest Planner Churchill. It came as quite a shock to be faced with two very different people who had no ownership in the Forest Plan and who had their own agendas to achieve relative to interpreting the Plan's language.

It did not take long before a major controversy occurred over minerals management in a special Semiprimitive Area. Then, we learned, after the fact, that a contract for massive metal bridges within the same Area was let out for bid. The trail involved had been adopted by our Sierra Club for maintenance—after we did much flood repair work—and we were not even aware that a bridge design had been completed. The bridges were stopped after a very negative meeting.

The once constant and open communication with the Supervisor's Office has almost stopped. Offsetting this somewhat, communication with the Ranger Districts has increased with the opportunity area planning process and Mon Trail Project. Addition of a Recreation Staff Officer in the Supervisor's office and encouragement from us to communicate is also helping. However, the group of committed volunteers, the public "constituency," have become fidgety over the more adversarial relationship brought on by the changed MNF administration. The trust we had developed had taken a serious hit.

Who Benefits from Volunteer Activism?

Studying a two-inch thick forest plan and EIS, commenting on environmental assessments, or attending agency management meetings hours from home (where controversy is likely to develop) are not exactly tops on the priority list for most people's leisure time. In fact, one might ask why on earth would someone want to do such stuff in their "free" time? Why be a Sierra Club activist or a public lands volunteer?

Personally, I was looking for something to throw myself into and I also needed an energy sink. I had a strong interest in environmental protection and loved woods and streams. I also enjoyed reading and studying, was technically competent (as a scientist), and was a good communicator when it came to public speaking (from lecturing in the classroom). I had the personal freedom (I am single) to devote the leisure time I had to environmental issues. My job was stable (I had tenure), paid well, was flexible time-wise, and included five weeks of paid vacation per year. The activist's role, in short, suited me perfectly and I thought I had something to offer. But I hasten to add that individuals with quite different personal profiles also become effective activists.

All government agencies should cultivate activists' input, regardless of background or apparent skills. They all fit somewhere into the many publics that various agencies serve. A volunteer's "commitment" is very different from the timber, minerals, grazing, or other industry employee's profit motive whose job it is is to be involved in resource management. These volunteers' different perspectives are extremely valuable for management.

Recomendations

Since we are not being paid for this value, the following might be kept in mind when public land agencies are dealing with public volunteers:

① Scheduling should consider the limitations of the working volunteer, using weekends and evenings as much as possible.

② Supply the volunteer with information in a form that is understandable. If a long document is involved, determine the level of interest, and work with the public so that they first understand what is being done, and their role in the whole process.

③ Identify responsible, constantly-involved organizations, the "constituency." Work with them, and don't hesitate to ask them for advice. Make communication a two-way street, showing that you respect and value their opinions.

④ Get volunteers and industry people to the same table periodically.

⑤ Invite yourselves out where interested volunteers are. Expand your horizons beyond the local business clubs. Go to the environmental groups by joining up and actively participating. Schedule yourselves to be on their programs. Sponsor field trips.

⑥ Always give reasons for decisions you make, especially if they go against a particular public's wishes. If you can not provide a convincing argument to refute sound reasons from an opposing group, then have the wisdom and courage to accept that they may be right. If your goal is to truly make the public a part of the process, your face will remain egg-free.

Working full time, then volunteering on environmental issues can be quite a load. When an activist gets impatient or irritated, the cause is often the frustration of time limits: not having the time to research the report as one would like, missing an issue totally until after the decision notice has been signed, being unable to attend a daytime meeting or visit a site for an on-the-ground inspection. When a volunteer gets testy, patience—even a bit of humor—on a public land manager's part can temper the "hitting out" that might result.

The power of the volunteer can be awesome, and the bridges they build indestructible if maintained. Most agencies would do well to strive for a share in this power.

Mary Wimmer is the West Virginia Sierra Club Public Lands Chair. In 1987 she received a national Special Achievement Award from Sierra Club for the work she describes in this article on the Monongahela National Forest. She is a professor of biochemistry at West Virginia University (11 years) where she teaches biochemistry and enzymology to medical students. Her research has been broadly based: organic analysis of pesticides in environmental samples and numerous other cooperative projects with federal agencies.

In developing countries, women are needed to work in social and agroforestry programs. Who will encourage and educate them?

Women Forest Technicians: Who Needs Them?

Ruth Seawell

Traditionally, society has looked to professional foresters and forest technicians for technical advice and expertise when managing the forest. Today, in the face of diminishing resources and a multitude of uses for our forests, society is changing its expectations of what those stewards should do. Some of the more significant changes are to new emphases known as social forestry or agroforestry: multiple (and perhaps rotating) food and fiber regimes are balanced by local people's needs on a given piece of land (Guevara 1988, Ruangpanit 1988, Dayananda 1988, Suwal 1988).

In developing countries where health of the forests and the livelihood of the people are threatened by widespread deforestation and desertification, successful social/agroforestry evolves around users and protectors. In most cases, according to the speakers and attendees of a recent international conference devoted to exploring the new social/agroforestry, forest technicians are on the front line to insure the successful exchange of technology and user's views. And it was a consensus that there is a critical need for women in large numbers to enter the field (Dayananda 1988, Guevara 1988, Hilmi 1986, Ruangpanit 1988, Suwal 1988).

Most forest technicians are graduates of a two-year school. If not, they have earned credentials through field experience that qualifies them. In this country, the two-year forestry schools are found principally in community colleges or long-established "ranger" schools. In developing countries, private or government operated colleges or universities house the technician school—usually only one per country or region.

A technician's education focuses more on general aspects of forestry, as opposed to the analytical approach a graduate forester might be exposed to. In addition, the student technician does not take many courses in general studies and is able therefore to cover a large, mostly forestry curriculum in two years. In order to better equip forest technicians with the skills necessary to provide the important linkages in social/agroforestry, educators are finding it necessary to reexamine the thrust of their technician-education systems.

These were conclusions of the international conference "Educating Forest Technicians into the 21st Century" hosted by Paul Smith's College, Paul Smiths, New York (summer 1989). The Conference, sponsored by the Forest Service Forestry Support Program for the U.S. Agency for International Development, brought together 50 participants from 19 countries to discuss this changing role in forestry as it relates to the education of forest technicians. Other support was received from the United Nations Food and Agriculture Organization, Council of Eastern Forest Technician Schools, Adirondack North Country Association, Winrock International, Society of American Foresters, and members of the forest products industry.

Organized around a series of working groups, the participants (in groups of five to seven) were encouraged to freely debate the issues presented to them by invited speakers: curriculum development, social forestry and the training needs of the technician, agroforestry, program review and accreditation, gender issues in technical training, and networking.

Men and Women See the Resource Differently

Paula Williams, Forest and Society Fellow for SubAfrica, Institute of Current World Affairs, provided the framework for the working group on gender issues in forestry technical training. Williams suggested that if "forestry is to contribute to the development of our society, then it must contribute to the development of both women and men." We must increase sensitivity among all forest technicians to gender issues that exist between forest users and the resource.

Usually there is a division between the person who owns or controls the forest resource and the laborer who uses or works in it. In most developing societies, for example, the gathering of firewood may be women's work, but women may delegate participation to their children. Men often own the trees, though, so women may have access only to firewood from the trees men choose to make available to them—or dead wood.

Since these women are the major collectors and users, they provide for the forest technician a vital source of knowledge about the forest and what it contains (Pandey 1988). Including female technicians will clearly broaden a forestry project's information base, because of social constraints which often work to exclude women from the information loop. According to Pandey (1988), "in some countries, it may be culturally acceptable for women to attend and express their ideas in formal meetings held in the neighborhood with men of their neighborhood, but in other countries, women are only accessible through women's meetings. For instance, in parts of India and Pakistan, women share their knowledge and concerns freely only in women's meetings." A female technician is able to penetrate these cultural barriers in all instances and provide direct communication about the forestry projects.

The importance of women as decisionmakers in community affairs also affects the proper presentation of new ideas (Hilmi 1988). If, for example, village men agree to plant trees for a fuelwood plantation, but if women do not agree to water the trees, the trees may die (Hoskins 1979). In order for social/agroforestry projects to be effective, therefore, they must include a knowledge of the social roles of men and women in planting and maintaining trees, and the proper procedure for approaching women on these matters.

The so-called mother image is also effective in eliminating the police/guard stereotype that forest technicians have acquired in developing countries. Suwal (1988) notes that "the forest was considered the 'green wealth of the nation' and the objectives of forest management were commercial logging and policing of forest resources from the so-called degradation by the local people." The concern was to maximize the revenue and maintain law and order. People were overlooked in the name of forest management. "If the approach of using forests for the people is to succeed, a new type of forester (technician) is required" (Ruangpanit 1988). Using women as technicians helps shed this strong military image since women are not usually associated with weapons or military activities.

There are several other reasons for promoting women in forest technology. Women represent a valuable labor force available to help fill future job needs. Partial studies were carried out by the Food and Agricultural Organization (FAO) in a number of developing countries during the period 1978-80 of personnel needs for trained forestry professionals. In 18 Latin American countries a total of 3,500 professionals and some 1,500 forest technicians had been trained up to 1978. It was estimated, however, that some 3,200 professionals and about 15,000 forest technicians would be needed by 1985 in order to meet the goals of forestry in the countries concerned (Hilmi 1988). These figures were of equal or greater magnitude for similar studies done in African and Asian countries. It is clear then that women, who represent over one-half of the world's population, can provide a valuable labor force to fill this increasing demand for forest technicians.

The participants and educators at the conference agreed that there are realistic constraints to overcome:

Education. Girls and boys in developing countries attend separate (and often unequal) schools during their primary education. The female later suffers from a weak background in science or lacks training in the national language that is usually required in a forestry career. Some forestry schools lack entrance places for women students, or if they are accepted, there are only male dormitories available. This can be especially true for technical schools. Paula Williams noted that "typically universities are located in national capitals or other major cities, where young women students can usually find lodging, either at women's dormitories or by staying with family or friends. Forestry technical schools, however, may be located in remote rural locations and often lack adequate housing and facilities for women." Cultural laws or customs may prevent certain contacts with men, or traveling alone, so getting a female to and from the school becomes an expensive, time-consuming burden for a family even if they are committed to assisting a daughter or sister into the field.

Military image. Most developing countries' forest service is considered a paramilitary organization and women are usually barred from military training. As long as technical schools continue to train forest rangers or guards for police work, women will not be allowed to enter the field. These constraints may persist on the technical level even when they do not on the university level (Williams 1988).

On being female. There are obvious biological constraints—such as having children—that limit female technicians in some cultures from field work. It was interesting to note that none of the working groups perceived muscular strength as a tremendous constraint. They did, however, express concern for sexual tensions caused by females working closely with men in remote settings. In this regard, though, there was more concern expressed for the tension caused by jealous wives of the male foresters with whom the female technicians work.

Economics. One working group suggested that the cost of placing a female in social/agroforestry project might cost more than a male due to the extra effort needed to recruit, train, and place her in the field. However, if we accept the premise that women will be more effective than men in the field then that extra cost should have a greater return. In countries where male migration for employment is significant, such as Somalia, it may be more effective to train women as forest technicians, as they may be more likely to continue work in the region (Mahoney 1987).

New Strategies

Technician schools need to formulate strategies to help women, their communities, and their governments overcome these constraints. A global survey conducted twelve years ago in preparation for the 8th World Forestry Congress found that the proportion of women forestry undergraduate students was on the rise. Recent indicators suggest that enrollments have continued to climb (FAO 1984). For schools in the United States, for example, it is not uncommon today to find that 30 percent of university undergraduate forestry students are women (Williams 1988).

The average is much lower, however, for female forest technicians in a technical curriculum. Eighty-four percent of all 1987 U.S. graduates of technician schools were male and 16 percent female. In the Southeast, seven percent were female, while in the Far West, nearly 30 percent were female. The other regions had a mix close to the reported average. The Canadian graduates were 87 percent male and 13 percent female (Martin 1989).

Information is incomplete on employment patterns of female technicians and followup surveys should be initiated to indicate problems. Curriculum changes could then follow if warranted. We already know that female faculty representation is poor. Of the 50 conference participants, only three noted that their schools had female members on their faculties of technician schools. All of these were in north America. By promoting females among the faculty at forest technician schools, females should be more inclined to consider forestry as a career.

Another strategy for promotion of female technicians is to emphasize improved student counseling in preparatory schools. Females should be informed of the potentials and expectations in a forestry career. In some developing countries females will need to be recruited and encouraged to consider forestry since it is not a traditional profession for women. In Papua New Guinea's Forestry College Handbook, for example, they include the following to encourage women to enroll:

CAREER OPPORTUNITIES FOR WOMEN

> *It may be thought forestry is a career unsuitable for women, but this is not the case. Careers in specialist areas, e.g. botany, entomology, pathology, and timber technology could satisfactorily be undertaken by women, and they are invited to apply for training.*

In some countries, overcoming constraints may require changing national laws or policies to grant women the right to enter forest technician schools. Williams urges further intervention: "It may be necessary to build dormitories or other facilities, such as toilets, to accommodate women. In Nepal, for example, the forest technician school has built a women's dormitory. In Sudan, outside donor support has been obtained to finance construction of a women's dormitory.... In some countries, more women might be enrolled in forest technician schools if provisions were made to accommodate students with families" (Williams 1988).

The curriculum used in technical schools needs to be updated for inclusive language and women forest-user examples. One of the suggested courses for Thailand's new forestry curriculum is Women and Children in Forestry: the History and Education Needs (Ruangpanit 1988). Male forest technicians should also be made more sensitive to female technician and female forest users needs, such as making field restrooms available, understanding child raising issues, and others.

Women forest technicians need to seek support by networking, a mechanism by which professionals can support each other's efforts through the sharing of information and expertise. If these networks exclude women, as is often the case in informal "good-old-boy" networks, female technicians will continue to be excluded from professional advancement. Networks could also support or grow into political lobbies to assist in easing—or removing the barriers to—women's entry into technical schools.

The conferees agreed that female forest technicians will be an important element in the people-centered forestry that is so badly needed. The tropics face major deforestation and desertification while their bulging populations struggle to find precious fuelwood. In temperate regions, industrial pollution and conflicting uses frustrate forest managers. In the past, forest educators have relied on traditional physical and biological forest principles to guide their curriculum. Now they must instill in their students new philosophical approaches to forestry. Technicians should be trained and ready to apply their body of knowledge of the physical and biological forestry processes to the cultural and social environment in which they work (Proceedings of An International Conference 1989).

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Ruth Cardinal Seawell spent three years as Forestry Instructor at Pensacola Junior College in Milton, Florida after starting their technician program in 1986. She was the first female representative on the Council of Eastern Forest Technician Schools. Before that, Seawell was a management forester for MacMillan-Bloedel, Inc. in Alabama. She is now Staff Forester for Alabama River Woodlands, Inc. in Monroeville, Alabama. Her degrees are a B.S. in Natural Resources from the University of the South and an M.F.R. in Forest Business Management from the University of Georgia.

PUBLICATIONS

Deceptive Distinctions: Sex, Gender, and the Social Order (Yale University Press, New Haven) is by Cynthia Fuchs Epstein, a Professor of Sociology at the City University of New York. She argues against assumed inherent differences between the sexes and shows, through an extensive survey of the past few decades of gender research, how the contention that women are different beings—whether they are regarded as better than men or weaker—serves to strengthen the social barriers to women's achievement.

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A two-year study on the status of women has recently been finished at the University of California at Berkeley. The study showed that 15 percent of permanent faculty members are women, but 35 percent of non-tenure track academicians are women. Minority women are less than two percent. Some 50 percent of temporary lecturers are women, 20 percent of whom are minorities. Among permanent faculty members, 90 percent of all white males and 80 percent of all minority males are tenured, compared to 67 percent of all white women, and 56 percent of minority women. The Coordinating Committee in charge of the study called for more data and offered some recommendations. For a copy of the report, write: Office of the Faculty Assistant on the Status of Women, University of California-Berkeley, 200 California Hall, Berkeley, California 94720.

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The University of Wisconsin at Madison has done a study on retaining faculty members and looked at gender-based differences to account for different rates at which faculty leave. For a copy of the 46-page study, Gender Differences in Faculty Retention, write Bonnie Ortiz, Office for Affirmative Action, 175 Bascom Hall, 500 Lincoln Drive, UW-Madison, Madison, Wisconsin 53706.

❧

Princeton University studied their graduate students and found that graduate school is more difficult for women in departments with few (or no) women professors. David Redman, Associate Dean of Academic Affairs found that the number of women students in a department also affected the number of women completing their degrees. In departments with few women (faculty or students) women completed their doctoral degrees at a rate of six to 15 percent lower than that of men. In departments with roughly the same number of males and female students and more female professors, the percentage of women who receive their degrees is equal to or higher than that of men. For the report write Redman at Princeton University, 201 Nassau Hall, Princeton, New Jersey 08544.

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The Cooperative Extension at the University of Massachusetts publishes *Wood Products Times*, a Quarterly Market Review. The September 1989 issue focused on exporting logs and lumber. Bob Schrader, the editor, provided prices, economic information, agencies (to assist an exporter), publications, and information about world importers. For a copy write him at 44 Marshall Hall, University of Massachusetts, Amherst, Massachusetts 01003-0099.

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Earth Ethics: Evolving Values for an Earth Community is a quarterly publication of the Public Resource Foundation, a private, non-profit organization. The editor is Sara Ebenreck. Editorial Advisors include a number of women, among them: Mollie Beattie, Patricia Cummings, Barbara Dean, Jennie Gerard. There is no charge for the 14-page publication (donations accepted, however) and can be had by writing them at 1815 H Street NW, Suite 600, Washington DC 20006.

The editor of this journal takes an informal look back through WiNRs studies of women's progress in the forestry profession. Hmm. Then she looks at the SAF's conclusions. Hmm. And what does the Forest Service say? Hmm.

Women and Sexism in Forestry

An Update

Lei Lane Burrus-Bammel

I was invited to give a presentation on "Sexism in Forestry" at the Allegheny Society of American Foresters meeting which was held in Johnstown, Pennsylvania in February 1989. Tom Fitzgerald, one of the conference coordinators, had remembered an article my husband and I had written and wanted a similar presentation (*Journal of Forestry* "Forester, Are You A Sexist?" Burrus-Bammel and Bammel 1984). Language discrimination, the main topic of that earlier article, is still an existing problem, but it seemed that there were other issues and data that ought first to be summarized for the attendees.

The material for an update presentation (and for this paper) was easily obtained from studies published in *Women in Natural Resources* (and its precursor, *Women in Forestry*), from the Society of American Forester's own investigations, and from researchers surveying the Forest Service. Consider this, as I did, an opportunity to reassess—from data and from personal experience—women's progress.

General Statistics

Women are representing an increasingly larger general segment of the work force. Collectively, they account for over 40 percent of the total work force in the United States, and women "have seized two-thirds of the jobs created in the past decade"(Yokota 1988). It is projected by several researchers that women and minorities will constitute 75 percent of labor growth between the years 1990 and 2000.

Women have also made advances in the business world in that women-owned businesses make up the fastest-growing segment in the U.S. economy. Women are starting businesses at nearly twice the rate of their male counterparts (Machan 1989). The concept of the traditional nuclear family, where the husband works and the female remains at home tending the children, has changed—only 11 percent of American families would now be given that designation. In fact, mothers with preschoolers are the fastest growing segment of the labor force (Yokota 1988). Slightly over half the population is female and 63 percent of those women work (compared with 88 percent of all men); it is estimated, however, that only six percent of the top U.S. jobs are held by women (Collins 1986). Women make on average about $.65 to the male $1.00.

Women in Forestry

The Forest Service. An understanding of the past sometimes helps to interpret the present. You might believe that changes for women in the profession are not occurring fast enough, and you would be right: there was a 25 year span between the time the first female graduated with a forestry degree and the first female hired by the Forest Service; 46 years until the first was appointed head of a research project; 47 years until a woman was a District Ranger; and 53

Table 1. Dates the "First" Female Received Various Forestry Degrees and Forest Service Positions.

Year	Degree or U.S.F.S. Position
1910	First Female Scientist Hired by the U.S.F.S.
1932	First Female Received Forestry Undergraduate Degree
1957	First Female Professional Forester Hired by U.S.F.S.
1978	First Female to Head U.S.F.S. Research Project
1979	First Female U.S.F.S. District Ranger
1985	First Female U.S.F.S. Forest Supervisor

SOURCE: Peterson 1986.

until one became a Forest Supervisor (Table 1).

In 1988,11.5 percent of Career and Career-Conditional employees of the Forest Service were women, up from the three percent in 1976 that Miner reported (Miner 1984). By January 1988 there were 597 women employed as Career and Career-Conditional employees by the Forest Service, an increase of 507 since 1978 (Figure 1). The percent of female foresters in the Forest Service has increased year by year:

Trends of Women in Forestry

1978	1.7%
1980	4.1%
1981	6.0%
1988	11.5%

SOURCE: USFS

Another concern besides numbers is the distribution of these women over GS Levels. The professional female employees of the Forest Service are concentrated at the lower levels (Figure 2) with 55 percent of GS 5 and 7 being comprised of women and none above level 14 (Figure 3). Professional females in the Forest Service are below the percentage of women at upper GS levels in the combined Federal work force. In 1986, researchers found 33.5 percent of GS Levels 9 to 12, and 12.4 percent of levels 13 to 15 were female (Zieroth 1988). Since these data were gathered, several more women have been promoted to the higher levels.

Forestry Programs. Each year the Society of American Foresters gathers information from schools granting Forestry Degrees. (Included are Wildlife, Recreation, and Wood Science majors who receive degrees from Forestry programs.) Student enrollment hit a peak in 1980 and has had, except for 1984, a steady year-by-year decline. This enrollment decline is accounted for more by males than by females (Figure 4).

Another interesting trend is that beginning with 1983, the percentage of degrees received by females is greater than the percent of forestry students represented by females and, this difference is increasing (Figure 5). There are two plausible explanations which could account singularly or in combination for females receiving a greater percentage of degrees than their percentages in forestry program composition. Females could be better students with a higher success rate—thus having a lower drop-out rate—than their male counterparts. Support for this position can be found in a 1979 SAF study (McManus and Jones 1981) which found that female members reported higher grade point averages than males.

Another explanation is that females who select forestry programs are more sure about their major selection or are more determined to succeed. After all, they probably had to overcome some attitude barriers presented by parents, friends, and/or career counselors.

Gender Differences. Kennedy and Mincolla (1986) conducted two studies to investigate men and women natural resource managers during the early stages of their professional Forest Service careers. Their first study was limited to a 50 percent sample of all foresters, range-conservation, and wildlife/fisheries biologists hired in USFS Regions 4 and 6 between 1978-81. (The response rate was 81 percent to their survey. Their second study in 1985 was a 43 percent service-wide sample of entry-level—meaning one to six years' service—wildlife/forestry managers. The return rate was 86 percent.)

Some of the differences found:

- more than half as many females (34 percent) were married compared to males (64 percent).
- more females had had no previous temporary experience with the Forest Service (45 percent versus 20 percent for males).
- a higher percent of females (64 percent) reported greater insensitivity by the Forest Service toward their dual-career problems than males reported (44 percent).

In the same study, females expressed greater optimism plus higher job expectations in terms of challenge, group morale, and opportunity to serve the public. Less satisfaction with their "first permanent job" was also experienced by the females. Twice as many women as men gave motivational reasons relating to "caring about," or "concern for conservation and/or preservation of resource values."

In 1979, a nationwide mail survey of SAF members (McManus

Figure 1. Number of Female Forestry Career and Career-Conditional Employees in the U.S. Forest Service.

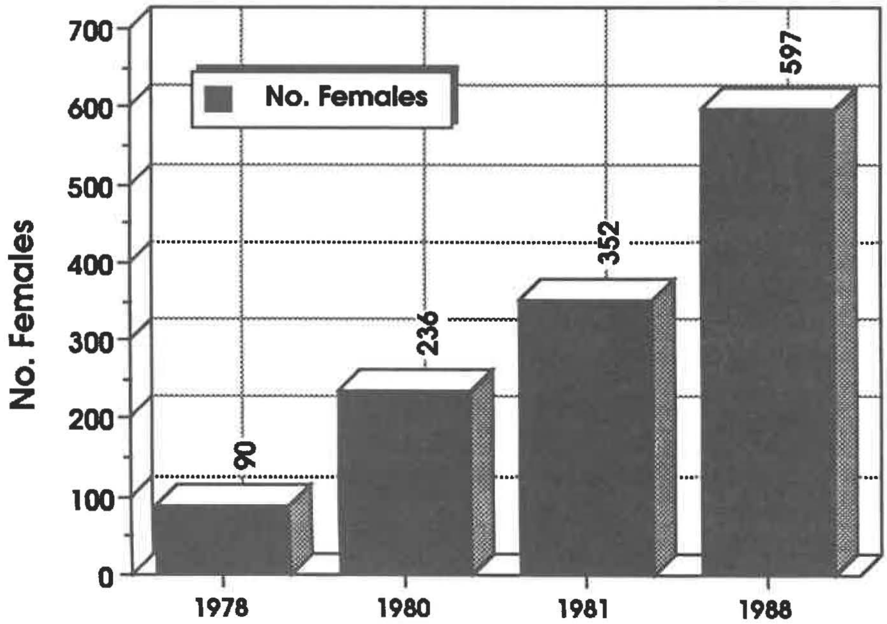
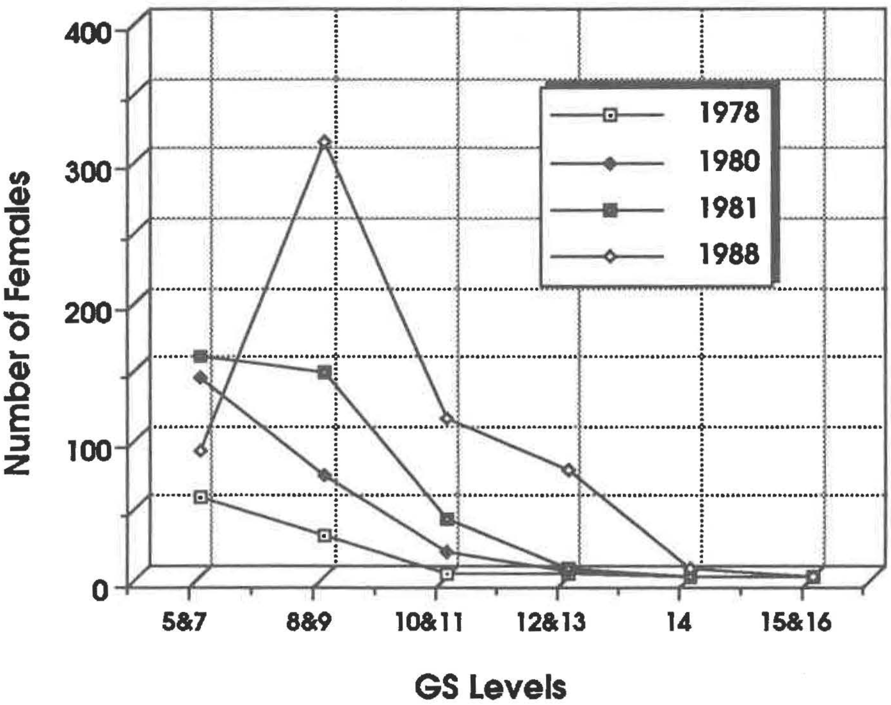


Figure 2. Number of Female Forestry Career and Career-Conditional Employees in the U.S. Forest Service.



Barriers and Social Problems

In a recent issue of *Women in Natural Resources*, Lance Yokota pointed out three attitudes that he believes have not changed with the times. The first one has to do with women being judged as groups, not as individuals. As soon as a female has difficulty with a given task, men are likely to generalize the situation to: "women can't do this." The same however would not be the case if a man, for instance, had trouble handling a chainsaw all day. Women, he concluded, are under greater performance stress. The failure of one may be interpreted as a sign that all women cannot do that job.

A second attitude barrier is the questioning by some that a female's commitment to family duties means she is less committed to her career. Part of the the impact of this is that some women may be denied the opportunity of travel, training, or other important job-related experiences because a supervisor may assume that she is not interested in, or cannot participate in evening, night, weekend, or away-from-home activities. Yokota emphasized his point when he asked the readers to reverse the roles. "Just because a man works forty hours a week does this mean he is less committed to being a good parent?"

and Jones 1981) was conducted. Respondents were classified into one of four experience level (EL) categories with EL-1 the lowest and EL-4 the highest experience category. Females, compared to male respondents, in two of the experience levels (lowest, EL-1 and second highest EL-3) were found to supervise fewer people. Females in three levels had higher grade point averages as undergraduates, yet a higher percent of females were found to be unemployed. Females in EL-2 spent significantly more time than did EL-2 males in the office. Differences were also found in the "types" of jobs that men and women held:

> *A larger percentage of women held staff and research positions. The most frequent employment categories for women were researcher, extension forester, project forester, and administrative or staff assistant. For males the most frequent responses were consultant, district forester, protection forester, teacher, engineer, land manager, and business owner* (McManus and Jones 1981).

As far as attitudes encountered on the job, female respondents mentioned: over-protection by males, exclusion from field work (including fire fighting), unfair testing of physical abilities, sexual harassment.

Figure 3. Percentage of Female Career and Career-Conditional Employees in the U.S. Forest Service.

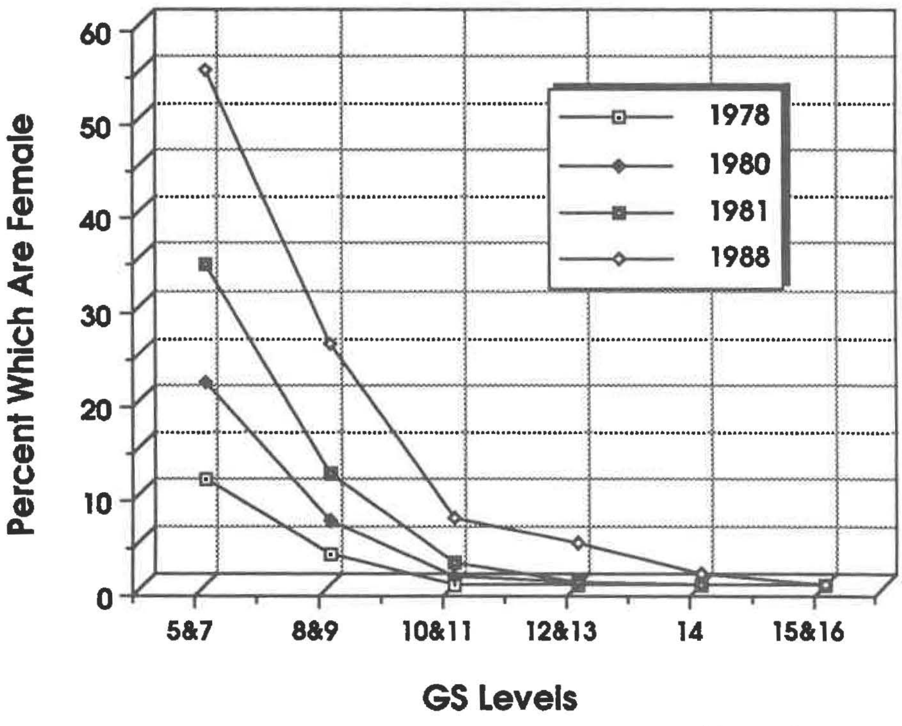
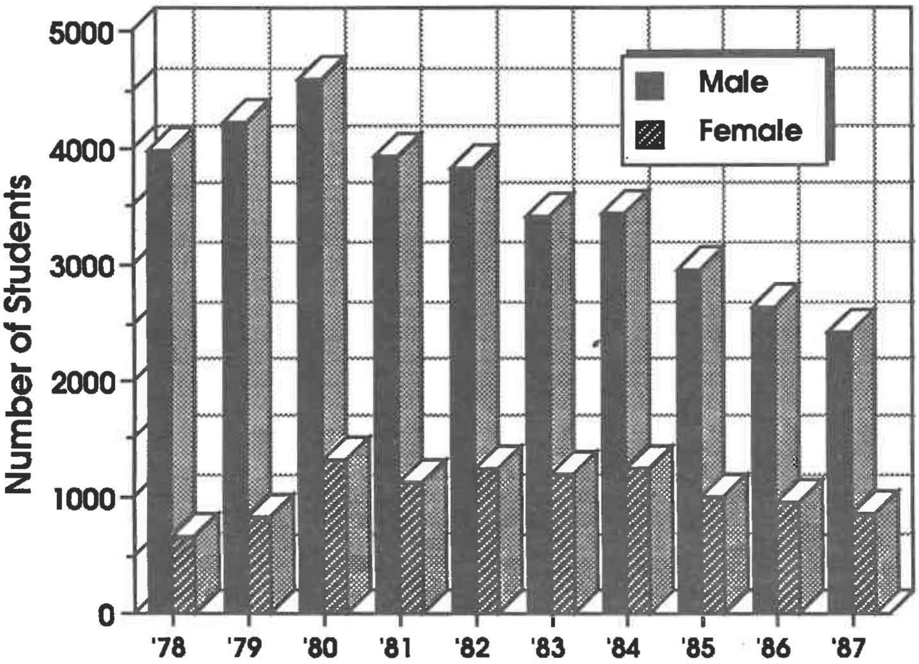


Figure 4. Number of Male and Female Undergraduate Forestry Majors in the United States.



overplayed, their personal lives the subject of more scrutiny."

Credibility, the second problem, refers to the perception that it is given less easily and less rapidly to women. Because credibility is withheld from women, they feel their voices are never really heard. One can interpret other data as a validation of that view. Margot Garcia surveyed National Forests in August 1985 to determine the gender composition of Forest Service planning teams, the teams that make decisions and where credibility translates into having a say in what goes on. She found only four percent of the Management Teams were female (*Women in Natural Resources* Vol. 8 No. 4). Garcia also found that 77 percent of the Management Teams in Intermountain Region 4 had no females and 60 percent of all Management Teams nationwide had none. In those years and in those places, women were rarely invited to the credibility table.

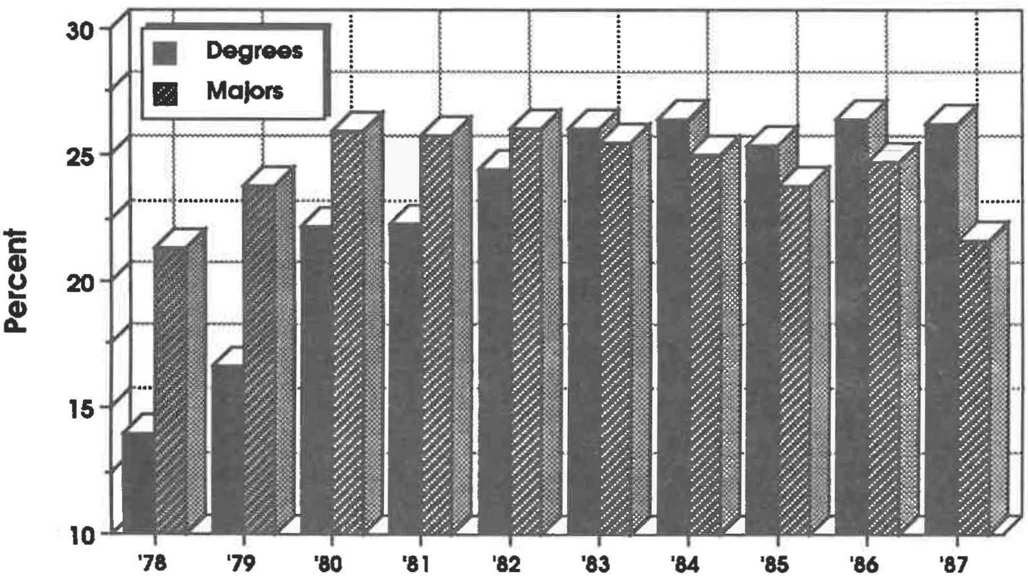
Exclusion from informal, male-dominated network systems can hinder upward mobility. During the casual atmosphere of a men's softball game or an all male fishing trip, significant contacts are made and information is exchanged. I joked at the beginning of my conference presentation, which immediately followed a morning break, that one reason I liked SAF and forestry-related conferences was that I never had any problem with bathroom traffic. That, of course, is one

The third attitude barrier mentioned was that women are not taken seriously in the work place. This attitude is an extension of the belief that a woman's place is in the home taking care of the family. Because of this attitude women often feel that they must perform at a higher level than their male counterparts. These attitudes continue to go unnoticed by men because, as the author indicated, "they don't affect us personally."

Readers of *Women in Forestry* in the Spring of 1983 (when the first journal issue was published) had their eyes opened by an article by Elizabeth Willhite. She was concerned with the three most prevalent "social arena problems" facing women in natural resource jobs: spotlighting, credibility, and exclusion from informal, male-dominated network systems.

The Spotlighting phenomenon has also been called the "goldfish bowl" effect and means feeling singled out, being subject to greater scrutiny, and fearing mistakes. This is very similar to Yokota's belief that women perceive greater performance pressure because they are aware that it could affect all of their gender. Willhite commented that women seem to be noticed more—"their strengths and weakness

Figure 5. Percent of Forestry Program Degrees and Percent of Forestry Majors Represented by Females



problem with bathroom traffic. That, of course, is one advantage, but what was I missing from being excluded from the male "social whiz?"

A lot of time and effort has been spent on publicizing and studying the phenomenon of discrimination in the Forest Service, other natural resources agencies, and in university departments. Men don't always agree with the findings, but they know the issues, and yet continue to permit gratuitous, incidental discrimination. It's puzzling. For example, at the SAF meeting, a typical awkwardness occurred having to do with the name tags that had those metal clips on them that are supposed to clip onto a coat pocket. Men's apparel have standardized left pockets. I had on a tailored winter jacket but the pocket was fake, as are many on women's jackets, and many jackets and suits for women don't have chest high pockets, external or internal. Internal pockets offer another example. Women don't have them. Ask to borrow a pen from a man in a suit or coat. If he has a pen, it probably will come from his internal pocket. As a token of appreciation to the invited speakers, a SAF pen was given. What was a permanent, not optional or removable, part of the pen? Right, a clip which is troublesome in a briefcase or purse.

In yet another example, there were four speakers in the minorities session of the conference. The speaking order was "boy, girl, boy, girl." But, while announcing the female speaker, the moderator mentioned the gender of the speaker. The gender of the male speakers was never announced. The visual attractiveness of the first female speaker was mentioned, but I didn't hear that quality mentioned in reference to any of the male speakers.

Eventually, these little things, these micro-inequities mount up and they reinforce the real feelings of exclusion, of not being totally accepted, of being different from the dominant group.

Remedies and Challenges for the Future

Most researchers believe that until a hefty percentage of women are found in all titles and ranks, in all agencies, corporations, and universities, the inequalities will be beaten back with difficulty. The immediate problem before us then, is to ensure that more women enter the field, stay in the profession during their working lives, and advance up and out everywhere. How to do that? Lance Yokota suggests a short list of sensible remedies including:

- Offering flexible job schedules.
- Assuring quality, affordable child care.

To his list I would add:

- Implementing equitable dual-career family policies.
- Concentrating on reaching females in elementary through high school with information about careers in natural resources.
- Continuing to monitor and remedy the large inequalities in pay, harassment, and opportunity.
- Paying attention to the small, situational, and social discriminations.

Women are needed in natural resource fields. Open competition helps to foster excellence and as Max Peterson, former Chief of the Forest Service notes, "a society doesn't reach its potential until all of its members reach their potential" (Peterson 1986). Another researcher agrees that science has not been well served by "prejudice and discrimination; we have lost time, talent and ideas" (Malcolm 1981). A homogeneous work force lacks diversity of experiences and perspectives that limit growth and contributions in an important area of human experience.

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Lei-Lane Burrus Bammel is the Editor of Women in Natural Resources.

Surviving as a small lumber producer. Does history repeat itself?

History of The Dalles Lumbering Co.

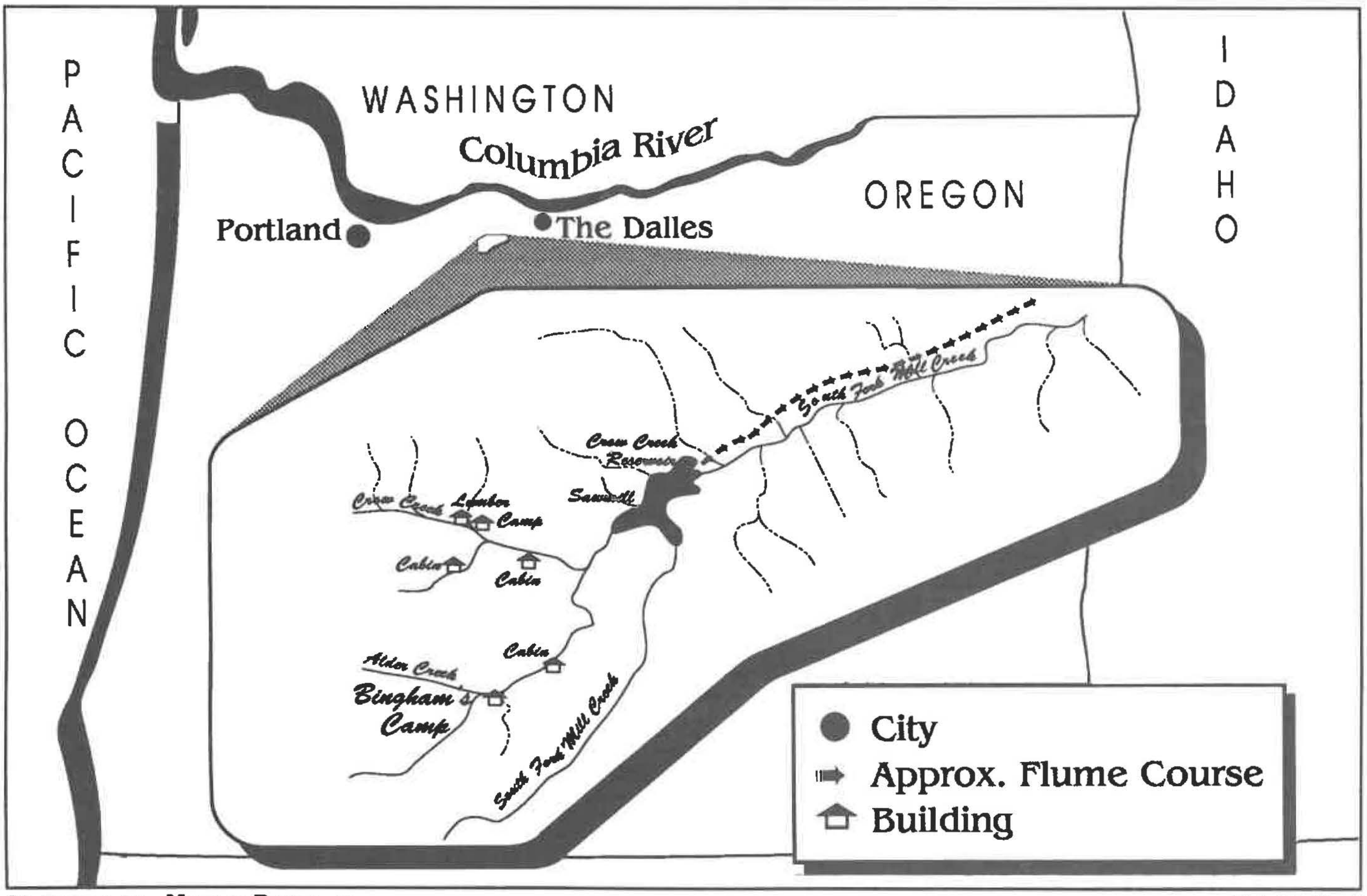
Jon Horn

HISTORICAL REVIEW OF THE COMPANY

The Dalles Lumbering Company began supplying the city of The Dalles, Oregon (on the Columbia River), with lumber products in 1884. For 18 years, the company actively logged the gentle slopes of the upper Mill Creek drainage, removing merchantable timber and a large quantity of slash which was marketed as cordwood. Because of the distance between the timber and town, technological adaptations were instituted in order to profitably bring the product to market. Principal among these were the placement of a sawmill near the timber, the construction of a 12 mile-long flume connecting the mill to the city, and the use of mobile steam engine equipment in the woods.

My study focused on the archaeological excavation of Bingham's Camp, a logging camp operated by The Dalles Lumbering Company during what may have been the peak of their production in the early 1890s. The camp is located on the Barlow Ranger District of Mt. Hood National Forest, in Wasco County, Oregon. Closed to public access since 1904—because it is part of The Dalles city watershed—the camp lay untouched and forgotten until it was discovered during the cultural resources inventory of the John Boy Timber Sale in the summer of 1980. During the summer of 1981, (while employed as an archaeologist for the Dufur Ranger District of Mt. Hood National Forest) I went there to excavate it to determine the National Register status of the site.

What interests us here about The Dalles Lumber-



ing Company is the fact that it is a good example of the hundreds of small sawmills which contributed to the development and growth of the lumber industry in the rich timberlands of the Pacific Northwest. It began, like most of the others, as an operation concerned primarily with fulfilling local demand for lumber products. The company probably attempted to expand into export trade to eastern markets by shipping on the Northern Pacific Railroad completed in 1883. Whether or not they were successful in this is not in the historical record. Increasing competition from larger, more highly capitalized lumber companies—moving into the region from the mid-west and east—certainly had a negative impact on the company's business. The most critical factor, the depletion of economically harvestable stands of timber in the vicinity of their sawmill in the Mill Creek drainage, finally forced them to sell out.

The Dalles Lumbering Company used typical pre-1900 methods for their logging, processing, and transporting of timber products. They understood the terrain they were logging and adapted the best technologies available to that physical setting. The main problem of getting timber from the woods to market economically was solved by constructing a sawmill in the woods which shipped its output to The Dalles by flume.

Water was critical. The location for the sawmill was chosen at the confluence of the South Fork of Mill Creek and Crow Creek, the only setting sufficient to run a mill and flume, and still be accessible to timber, the town, and their connection to shipping. The diversion of water from Dog River into the Mill Creek Drainage and then the construction of a water-efficient V-shaped flume—rather than box-shaped—shows the company's understanding that wise use of that water was necessary.

As the stands of trees near the mill were depleted in the 1890s, use of more advanced technologies were required to keep the operation running. Among the artifacts recovered at Bingham's Camp were fragments of a replaceable-tooth circular saw blade, wire rope, and parts of a steam engine. The saw blade, presumably from the mill itself, was an innovation which reduced the amount of time required in maintenance and, therefore, resulted in higher efficiency and greater outputs of lumber. The wire rope and steam engine parts tell us that a donkey engine, a mobile steam engine used to yard logs, was in use, increasing production and enabling distant timber stands to be harvested economically. This is surprising, because by 1900 only 35 donkey engines were being used in all of Oregon while there were an estimated 274 logging camps in operation (Defebaugh 1906-7; Horn 1987). The company clearly was a healthy, aggressive, and progressive organization in its early years.

How the Company Fit into the Regional Timber Picture

The development of the lumber industry in the Pacific Northwest can be divided into three phases. The first phase, from initial settlement until soon after the completion of the Northern Pacific Railroad in 1883, was characterized by small mills cutting lumber almost entirely for local consumption. New settlers in the 1870s and 80s increased demand for timber products (Crosby 1930). According to Steer (1948) "The lumber industry of the Pacific coast in the 1880s was still in an embryonic period of development, dominated by California capital, operated by New England lumbermen, and largely dependent on local demand." During this period, cutting and selling cordwood (for fireplaces and stoves) was a major industry. In the region we are discussing here, the wood was transported by scow on the Columbia to The Dalles—especially from the Washington side of the river which had no railroad connection until 1909.

The second phase began with the completion of the Northern Pacific Railroad on the Oregon side of the Columbia River in 1883. The population of the Northwest grew rapidly after railroad transportation became available (Cox 1974). The completion of the Northern Pacific did not immediately lend itself to marketing Northwest timber to eastern markets due to high freight rates. It was only when the Great Northern Railroad began to compete in 1889 that rates came down and shipping to the Rocky Mountain region began (Cox 1950). Small shingle and railroad tie mills were the first to use the railroad (Erickson 1965). Large timber companies in the midwest were quick to realize the potential, too. The first large investment in the region by midwest capitalists was by Chauncey and Everett Griggs who formed the St. Paul and Tacoma Lumber Company (Steer 1948). Other large eastern companies followed in the 1890s, purchasing large tracts of timber.

The railroads were an unwitting impetus for activity of another sort, however. Large mills west of the Cascades shipped millions of board feet of lumber to California, Hawaii, South America, South Africa, China, Japan, and Australia (Cox 1950; Cowan and Gibbs 1949). The stable trans-oceanic trade attracted them because of the notoriously fluctuating railroad tariffs during the 1890s.

The third and final phase was characterized by the domination of the lumber industry by large, high-capital, transplanted eastern companies. Their rise signaled the demise of the locally-owned sawmills. The large companies bought up vast, unclaimed timber tracts and brought in superior machinery in order to produce a greater quantity and better quality timber product at a lower price.

The decline of the region's small timber producers was hastened by two other events in this third phase: large forest fires on the Oregon and Washington sides of the Columbia River in 1902; and stricter protection from illegal cutting on the federal Forest Reserves. Which of these circumstances had the most impact is not known. The Yacolt Burn on the Washington side, and the Bull Run Fire on the Oregon side of the river destroyed hundreds of thousands of acres of prime timberland, focusing competition on the remaining stands. Small logging operations could not pay as much as the large companies could for the Forest Reserve tracts. They depended on cutting tracts obtained by homestead, or timber claims in overlooked or marginal areas. In The Dalles in 1901, 700 timber claims were filed—a phenomenal number, considering only 100 such claims had been made in the 20 years prior (*The Columbia River and Oregon Timberman*, Feb. 1902). Most of these were probably filed on speculation or under the direction of the larger lumber companies. As a result, most of the small operators cut what timber remained on their legitimate holdings and then went out of business.

The Dalles Lumbering Company as a Case Study

Early Development

When The Dalles Lumbering Company began logging the east slope of the Cascade Mountains in 1884, it was first known as Thomas Johns and Company, operating on Dutch Flat, about 15 miles southwest of The Dalles. The local paper reported that "a steam lumber mill will soon be erected....The lumber in that section is inexhaustible, and of the best quality" (*The Dalles Times-Mountaineer* 29 March 1884). A few months later, the editor announced the arrival of machinery for a new planing mill for use by The Dalles Lumbering Company in finishing the lumber they were cutting in the woods (The Dalles *Times-Mountaineer* 5 July 1884).

The planing mill in The Dalles and the sawmill on Dutch Flat were a long wagon-haul apart. In order to lessen the transportation hardship, the Dutch Flat Canal Company was incorporated by Thomas Johns, Samuel S. Johns, and Adelbert Field on October 27, 1884. The consortium intended to build a ditch or canal from the sawmill on Dutch Flat to The Dalles for lumber transportation (Dutch Flat Canal Co., Articles of Incorporation October 27, 1884). Because of the limited quantity of water available from Fivemile Creek (or failure to find a suitable route for the ditch—or both) the project was abandoned and attention turned to locating a more suitable sawmill site.

Water

The location chosen was several miles to the north in the Mill Creek drainage at the junction of Crow Creek and the South Fork of Mill Creek. Sufficient water was there to run the sawmill, create a log storage pond, and to supply a flume to transport the rough-sawn lumber to The Dalles. A new corporation was set up by the same men at Christmas 1886 and called The Dalles Lumbering Company. It was capitalized at $50,000 in $50 shares. Charles C. Hobart was added to the list of Directors the following Spring. In the Supplemental Articles of Incorporation the members indicated they were to manufacture lumber and construct a flume for lumber transportation (The Dalles Lumber Co., Articles of Incorporation 24 December 1886 and 3 May 1887).

The flume was begun in 1887. The newspaper editor wrote:

> *This new company is displacing the city from the headwaters of Mill Creek. The gentlemen propose constructing a reservoir near the old garrison buildings which will give sufficient fall for all manufacturing purposes. The object of the flume is to float wood and lumber from the mountains, and thus make The Dalles a base of supplies for fuel and building materials for the surrounding country. The forests in the mountains are almost inexhaustible in the best timber for all purposes, and by means of the flume they can be placed at The Dalles cheaper than at any neighboring point. Aside from this object, the reservoir at such an altitude will furnish a splendid water supply for the city and abundant power for manufacturing purposes (The Dalles Times-Mountaineer 6 August 1887).*

Between 30 and 60 men worked steadily on the 18-mile flume until early December's cold weather. Work resumed by March and was completed in July. The flume was considered a "masterpiece of bridge engineering and trestle work" (McNeal 1953). It was built completely of wood, spanned ravines 50 feet deep, and had catwalks on both sides. The construction was a marvel. According to Alice Johns Muirhead Ingram, daughter of Samuel S. Johns, the flume was six feet wide across the top. A plank, about one foot wide, was placed in the bottom of the flume truncating the V-bottom, forming a platform along which the water and lumber rushed (Ingram 1972). The most precarious part of the 18 miles was a one and one half mile section past Mill Creek Falls which dropped 1,000 feet. Although there were headgates to control the flow of water, it was the most repaired and accident-prone section. In all, it took two and a half hours for a piece of lumber to travel from the mill to The Dalles (*Times-Mountaineer* 22 April 1902).

Water was a continuing problem. In order to insure an adequate flow and to guarantee their water rights, the Company made agreements with Robert Pentland and Samuel L. Brooks. Pentland owned a ditch which diverted water from Dog River, a tributary of Hood River, into the South Fork of Mill Creek. In return for the use of this water for fluming, Pentland was given the right to use the water in the flume after the lumber company was finished with it to run his flouring mill in The Dalles during the day. At night, the water was diverted into a reservoir built by Brooks to provide the town with drinking water (McNeal 1953; McNeal 1972).

At times the Company could not deliver the water to it's clients or meet their own needs. Cold weather froze the water in the flume and lack of water in the summer made it impossible to float lumber to The Dalles and shortened the number of hours which the mill could operate. In 1888 and 1889, scarcity of water forced the sawmill to shut down completely for a few weeks. Again in 1890, operations were curtailed to the hours of six to twelve in the morning because of a lack of water (*Times-Mountaineer* 22 July, 6 August, 10 August, 1889; 26 August 1890). Heavy snowfall during most winters would have made operations extremely difficult.

Two dams were built in the vicinity of the junction of Crow Creek and the South Fork of Mill Creek. The larger of these was 18 to 20 feet high, located approximately where Crow Creek Dam is now situated (Ingram 1972). The upper dam held logs (ready for sawing in the mill). Logs were brought from the surrounding hillsides by oxteams to the top of log-lined chutes on the steep slopes above the millpond. Here was where the steam-powered mill was located, on the upper storage pond. Logs were fed from the pond through the mill—which had a capacity of 15,000 board feet per day. The resulting lumber was either stacked at the mill for use locally, or put into the lower pond at the head of the flume and then sent down into town (*Oregon, Washington, and Idaho Gazetteer and Business Directory* 1886; *Times-Mountaineer* 28 August 1890; Bailey 1973).

The output from the sawmill in the woods was destined for the Company's planing mill in The Dalles. Before the flume was completed, the Company sold the planing mill engine they were using and replaced it with one with twice the capacity. Early in 1889, the planing mill was moved southwest of town to the old Fort Dalles Garrison grounds to be near the flume outtake. Left behind at the old location was the Company's sash and door factory (*Times-Mountaineer* 12 February 1887, 17 March 1888, 2 March 1889; *Sanborn Fire Insurance Map,* The Dalles 1892).

Products

The Dalles Lumbering Company sold a wide variety of wood and building materials, both wholesale and retail. Products offered for sale included rustic and finished cedar, pine, and fir lumber, slabwood, fence posts, nails, poles, laths, shingles, flooring, doors, blinds, windows, mouldings, and boxes. Through the years, other small local sawmills competed with The Dalles Lumbering Company, but none offered such a full product line.

In addition, the Company provided the city of The Dalles with fir, pine, and oak cordwood (for use in wood stoves). The cordwood business was highly competitive, supplied largely by small operators on the Washington side of the Columbia who sailed their product to The Dalles by scow.

Logging and Loggers

A community grew in the woods on the South Fork of Mill Creek below The Dalles Lumbering Company's Mill. It was from here that the main labor force came. For the people of the Upper Mill Creek Community, employment or use of their services at Johns' Mill made it possible to live comfortably and support a family in an area where existence in farming or stockraising would have been marginal at best. R. H. Weber, for example, arrived in 1893 and went to work at the mill as a hunter to provide meat for the crew. He then worked in the mill, and later at the planing mill in town. By 1898 he had started his own nursery (McNeal 1953).

In addition to white laborers, Chinese were employed in the woods. These were hired through Dock Sing, a Chinese merchant in The Dalles who was also the "head of the District Chinese Tong." The Chinese were hired mainly as cooks for the crews, but may have held other jobs as well. Archaeological evidence from Bingham's Camp indicates that a Chinese cook's helper and laundryman were employed there. Bailey notes that they were "excellent laborers and knew how to put up a 'true cord of wood,' leaving no empty spaces" (Ingram 1972; Bailey 1973; Horn 1987). On the other hand, the mill workers, loggers, and drovers tended to be white. Artifacts were found at the cookhouse at Bingham's Camp indicating that a woman and female child resided there, as well (Horn 1987).

In the 1880s and 90s, logging was a very dangerous business. Although it is unlikely that all of the accidents which occurred at The Dalles Lumbering Company's operation in the woods were reported, the ones which were are typical for operations of the time. In a four year period, the *Times-Mountaineer* reported: a mill employee cut a severe gash in his leg with an adze; another employee broke his leg, but the fracture was not set for a week; a wagon's running gear broke the leg of yet another worker; and a young man was killed by a falling tree when working on a skidway. He died from a "fracture of the brain" (*Times-Mountaineer* 27 October 1888; 31 July, 1989;17 November 1991).

These employees cut timber above the sawmill along the South Fork of Mill Creek, Crow Creek, and Alder Creek. Wagon roads throughout the area provided easy access. The sawyers cut Ponderosa pine primarily, but some Douglas fir and western redcedar was harvested as well. Stacks of cordwood left in the woods indicate that much of the slash left as unmerchantable timber was cut up for firewood for The Dalles market or for the mill itself. As logging crews moved farther away from the mill to find new stands of trees for harvesting, camps were set up to serve as bases of operation.

By 1900, timber within affordable reach of the mill was dwindling. *The Timberman* in that year noted that the supply was "becoming quite scarce." A 1903 report on the Cascade Forest Reserve stated that "during the past six or seven years little cutting has been done. The available timber along the different branches of Mill Creek was exhausted, and everything left by the loggers has been cut into cordwood and posts" (*The Columbia River and Oregon Timberman* May 1900; Langille et al. 1903).

Fire

The Company suffered a series of calamitous fires. *The Times-Mountaineer* of 31 July 1889 pointed out that "the forest fires in the timber surrounding The Dalles Lumbering Co.'s mill, near the headwaters of Mill Creek, have threatened the destruction of the building and lumber. A large force of men have been employed fighting the fire for three or four days past." No damage was incurred, however.

Fire destroyed the planing mill on the morning of May 2, 1891. Because the mill was one and one-half miles from town, the fire engine did not come. Fortunately, the flames were confined to the mill building: the flume and the piles of nearby lumber were saved. Loss due to the fire was placed at $20,000 (with only $3,000 covered by insurance). Arson was presumed (*Times-Mountaineer* 3 May 1891). The planing mill's loss forced the closure of the Company's sash and door factory because other sources of finished lumber were not available.

A devastating fire also destroyed much of the city of The Dalles in 1891. Rebuilding proved to be a boon to lumber dealers of the area. *The Times-Mountaineer* (13 October 1891) reported: "New buildings continue to be erected in the burnt district rapidly. It keeps our local lumber dealers hustling to supply the demand." The loss of the planing mill diminished the Company's ability to capitalize on this event.

Another serious fire was set by Thomas M. Denton, Jr. in the barn at the Company's lumber yard on the Garrison grounds 26 August 1895. Again, it was impossible to stop the fire, so attention was turned to saving the flume, wood, and lumber piles. Thirty-five tons of hay, six delivery horses, and two wagons were consumed. This time there was no insurance. Denton was arrested and tried for arson. His family owned a farm on Mill Creek and had had previous legal battles with the Company.

The Dalles versus the Company

The completion of The Dalles Lumber Company's flume was at first looked upon as a blessing mainly because it was believed to be the answer to the city's water shortage problem. Soon, however, there were citizen's complaints about both the quality and quantity of water the Company managed. In 1888, an injunction against the Company was filed: the agreement which resulted dictated that the lumber company could use 60 inches of water in their flume, leaving the rest in the creek (*Times-Mountaineer* 6 October 1888; 30 July 1889).

The Dalles Water Commission had debated whether to buy the water rights of the Mill Creek drainage, including the flume, or pump water from the Columbia River. Seeing the latter alternative as very undesirable, the editor of the paper wrote "If we desire gravitation (a gravity water system from Mill Creek), let it be an entirely new system, not the water taken out of the Lumber Co.'s mill pond, which in the very nature of things is constantly impregnated with its extract of fir, pine, and cedar lumber, and fir and oak cordwood" (*Times-Mountaineer* 23 August 1890). It appears, though, that the lumber company waited to offer its mill and flume for sale to the city until 1897 (*Times-Mountaineer* 5 June 1897).

Several years later, in April 1902, the city finally decided to buy the flume and the 10 acres encompassing the mill pond—and the site of the sawmill at its head—to insure a fresh supply of water for The Dalles. The sale, for $7,500, officially put an end to The Dalles Lumbering Company's sawmilling operation (*Times-Mountaineer* 18 April 1902). One and one half months after the sale, Thomas Johns died and soon thereafter, Samuel S. Johns moved from the area to Myrtle Creek (on the Oregon coast) where he again engaged in the lumber business (Ingram 1972).

Conclusion

Every business has to understand and grapple with a multitude of factors in order to succeed. Technology has changed over the past 100 years, but the constraints encountered by early lumber producers, such as The Dalles Lumbering Company, are generally very similar to those that are paramount in today's industry: Securing a reliable source of timber, transportation costs, efficient and cost-effective use of technology, facility siting, loss from natural disasters (particularly fire), arranging a reliable work force, safety, community relationships, legal difficulties, and competition (especially for small operations trying to find a niche in a market dominated by large companies).

The Dalles Lumbering Company was a success for a number of years, finally succumbing to circumstances that they were unable to overcome. Their early success was due to solid business decisions, and, perhaps, a bit of good luck. Their demise, an inevitable turn of events. In examining the history of The Dalles Lumbering Company, it is clear that general principles and situations transcend time.

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Jonathon Horn is an historical archaeologist and a partner in a consulting firm, Alpine Archaeological Consultants, Inc. of Montrose, Colorado. Horn's Bachelor's is from Lewis and Clark State College in Portland, Oregon, and his Master's (upon which this paper is derived) is from the University of Idaho in Anthropology. Recent projects Horn's firm has engaged in involve a history of ruins stabilization for Cliff Palace and Spruce Tree House in Mesa Verde; Anasazi sites (Green Mask Ruin) and Fremont Ruins at Dinosaur National Monument; and analyzing artifacts from the Down Wash site in the Maze District of Canyonlands National Park.

What is a financial planner? Do you need one?

As women accumulate more assets, they may think about getting some help from a professional financial planner. Managing money can be a challenging enterprise, and someone who has a full time job may not have the time to study money allocation. Accordingly, over the past 20 years, over 50,000 people have publicized themselves as "financial planners." It behooves us to ask ourselves: if we need one, how will we know if we will get a good one?

In my opinion, you will get the most objective advice from "Fee-Only" financial planners. These people will charge a straight fee for drawing up a financial plan, or presenting several financial alternatives for your execution. It is then up to you to act on the plan: to choose appropriate mutual funds, stock brokers, insurance salesmen, or others.

"Commission-Based" financial planners will carry out all these functions for you, but the increased convenience may be at the expense of the loss of objectivity. If a planner can sell you a product that carries a commission (which may be up to 10 percent of your purchase price), there is an almost irresistible temptation to present this product as preferable to one that carries no commission—or a very small one.

If you are searching for a "Fee-Only" planner, start with a call to a College of Business and Economics. Professors have an inclination to educate their customers (and may be more up-to-date on what works best) than many full-time, commission-based planners.

Many financial planners would prefer to be "Fee-Only" planners, but cannot make enough money to stay in business that way. Typically, planners make about 80 percent of their money from commissions.

In the early 1980s, financial planners were the main salespersons for limited partnerships. These were tax-advantaged ways of owning real estate, oil and gas, warehouses, or high-technology products. Planners made a 10 percent—or larger—commission on each sale. It is remarkable how many planners determined that these were important parts of clients' financial plans. A retired planner (who shall remain anonymous) for a major brokerage house said: "In 10 years, I never sold a partnership that anybody made any money on." Most of these tax-advantage partnerships lost their special status in the tax reform act of 1986, making them even less rewarding for most purchasers.

Most people do not need terribly sophisticated financial planning, but do need some encouragement. They need to save systematically, to put a reasonable amount into readily available accounts, and to commit money on a regular basis to mutual funds that may be composed of bonds, blue-chip stocks, or aggressive growth companies. A single visit to a "Fee-Only" financial planner may set up a plan that will work for a lifetime.

Women make up fewer than 20 percent of registered financial planners. Alexandra Armstrong, of Washington DC is perhaps the best known, and is one of the most thoughtful. While several men have been indicted recently for fraudulent financial planning, this has not happened to a single female planner. Financial planning is a potentially lucrative profession and as such, presents temptations to take unreasonable cuts of a client's hard-earned money. Could it be that women just have a harder time doing that to people?

If you want to find or consult a financial planner, request information from one of the three national associations (acronyms below) that accredit or license them:

ICFP, 10065 E. Harvard Ave., Suite 320, Denver Colorado 80231.

IAFP, 2 Concourse Parkway, Suite 800, Atlanta, Georgia 30328.

NAPFA, 1130 Lake Cook Road, Suite 105, Buffalo Grove, Illinois 60089.

Most people, however, are better off doing their own financial planning, forcing themselves to think clearly about the allocation of their earned, renewable resources.

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.*

Our hardest job will be to keep wilderness "affected primarily by the forces of nature," and not by ourselves.

The Enduring Resource of Wilderness

Anne S. Fege

The 1964 Wilderness Act (P.L. 88-577) stands the test of time, virtually unamended in 25 years. There are now 91.5 million acres in the National Wilderness Preservation System, cared for by the Bureau of Land Management, Fish and Wildlife Service, Forest Service, National Park Service, and the public. Together, we face the challenge of taking care of these vast resources "to secure for the American people of present and future generations the benefits of an enduring resource of wilderness" (Sec. 2(a)).

The toughest challenge in wilderness management will be to keep it "affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." Threats will come from outside the wilderness and from inside: from visitors, from wilderness users, and from natural resource managers. This paper sets forth some of these conflicts, and challenges professionals and the public alike to reduce the external and internal pressures that diminish wilderness values. It closes with some thoughts on womens' contributions to wilderness management, and includes photos of some of them. Readers should refer to the first article in this *Women in Natural Resources* series (Vol. 11, No. 2) for the history and content of the Wilderness Act, and a discussion of women professionals in wilderness management field work. The third and last article in this series (Vol. 11, No. 4) will address wilderness education and training.

External Pressures

In a world that becomes more populated and developed each day, wilderness strains under the intensive pressures of development or encroachment along its boundaries, motor vehicle trespass, incompatible use of private and state land within wilderness, air pollution, and influences on water that originate outside the wilderness.

Some wilderness areas share boundaries with urban subdivisions. The Twin Peaks Wilderness adjacent to Salt Lake City and the Sandia Wilderness in Albuquerque are such examples. Large numbers of visitors hike and jog at the outer edges of these wildernesses as if they were neighborhood parks or private playgrounds. These people bring trespassing dogs, bicycles, and other vehicles. Other areas had long histories of snowmobile or all-terrain vehicles use before they were designated wilderness, and old habits and use patterns die hard. Since it is impractical, not cost-effective, and physically impossible to fence and patrol all wilderness boundaries, we must rely on public involvement and education to halt such uses in wilderness. Public land management agencies also need to provide alternate scenic or challenging areas for such motorized recreation outside wilderness.

Chris McCarthy-Ryan, Wilderness Manager, Alpine Lakes Wilderness, Leavenworth RD, Wenatchee NF, and David Cole, Wilderness Research Management Unit, Missoula

Non-Federal land that is surrounded by wilderness is another form of external pressure, if there are buildings and land uses that are incompatible with wilderness values. Access to state and private land within wilderness is guaranteed by the 1964 Act and other applicable laws, but any type or form of access to such lands that exceeds historical levels must be approved, and must be compatible with wilderness objectives. Whenever possible, managing agencies have been purchasing or exchanging non-Federal inholdings. In the Frank Church-River of No Return and several other wildernesses, the enabling legislation required that certain public and private airstrips remain open—and be maintained—to allow small aircraft access to the interior of wilderness. These intrusions create additional "trailheads" and concentrate visitor use, and are yet another external pressure on wilderness.

Air pollutants that are deposited on vegetation, soils and water bodies in wilderness may alter ecological processes and natural conditions. Although most air pollution is generated by small sources, there is a provision in the Clean Air Act for protecting air quality in some wildernesses. The Clean Air Act, as amended in 1977, provides for the protection of visibility and air quality in 161 Class I areas by requiring that Federal land managers review Prevention of Significant Deterioration source applications and recommend whether they will adversely impact air quality related values in Class I areas. These areas include 88 National Forest wildernesses, all of which exceeded 5,000 acres in 1977. Managers are now beginning to identify air quality related values, establish monitoring programs, and manage smoke from prescribed fires adjacent to Class I areas.

Patti Johnston, Assistant District Ranger, Rocky Mountain RD, Lewis and Clark NF, at Gates Park Ranger Station in the Bob Marshall Wilderness

Many wildernesses incorporate mountaintops and the headwaters of rivers, so water quality and flow are affected primarily by the forces of nature. However, many smaller and lower-elevation wilderness areas are downstream from diversion points, consumptive water uses, or pollution sources. The assertion of water rights for wilderness values has now become a conflict in several Western states. Within wilderness, both human visitors and domestic livestock can degrade water quality of small lakes or riparian areas, and such impacts will need to be resolved through public education, regulation, or revised grazing allotment management plans.

Internal Pressures

Conflicts will also come from inside the wilderness. These relate most frequently to resource management, administrative activities by managing agencies, and the rationalization of cultural and scientific values. The broad area of conflicts from recreational uses will be addressed separately.

The Wilderness Act made special provisions for certain nonconforming uses such as grazing, mineral claims, water developments, access to state and private land, and control of fire, insects and disease (Sec. 4 and 5). Yet, these activities need to be managed in a manner that is compatible with wilderness objectives. There are interrelationships between resources and wilderness values that add complexity, but are not always immediately evident. Since livestock grazing allotments, private land development and uses, and hunting and fishing customs in certain areas predate their designation as wilderness by several generations, managers need to address conflicts rooted in the issues of local history versus government restrictions on land use.

The balance between wilderness protection and use is a difficult one to reach in practice. Agency policies mandate that there must be no practical alternative before a manager allows reconstruction or major maintenance of range improvements, wildlife and fish reintroductions, or the use of motor vehicles, motorized equipment, and mechanical transport to carry out these activities. Exploration and development of valid existing mineral leases and mining claims is allowed in Forest Service and Bureau of Land Management wilderness, as long as surface disturbance is minor. Motorized and mechanical equipment use must be minimized, and disturbed lands reclaimed and restored to their natural condition as nearly as possible.

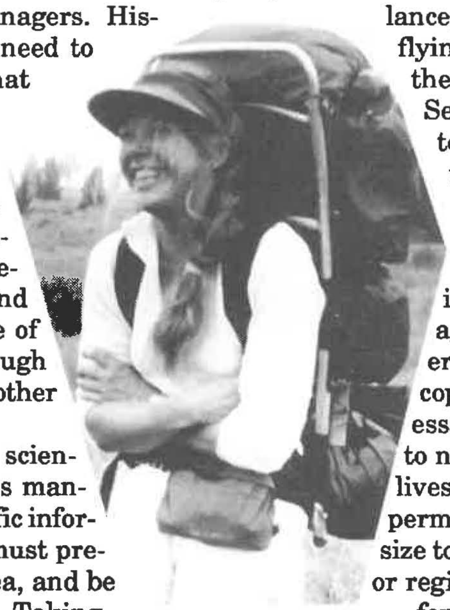
Naturally occuring phenomena such as fire, insects, and disease become very controversial, as their natural ecological role within wilderness can threaten resources and properties outside the wilderness boundary. Lightning-caused fires may be allowed to burn under certain conditions, if prescribed in an approved fire management plan. When fire must be controlled, crews are instructed to be "light on the land," using motorized and mechanical equipment and disturbing the soil only when absolutely necessary in protecting public safety and property. Insect and disease outbreaks are controlled only as necessary to prevent unacceptable damage to resources on adjacent lands or an unnatural loss to the wilderness resource due to exotic pests. For example, control of Southern pine beetle has been approved under certain conditions, and control of gypsy moth infestations in wilderness has recently been considered.

The Wilderness Act also made special provisions for administrative uses by managing agencies, allowing otherwise prohibited activities (roads, motor vehicles, motorized equipment, landing of aircraft, structures and installations) when "necessary to meet minimum requirements for the administration of the area." Managers need to set a good example for other wilderness users, and there is a delicate balance in deciding how much is the "minimum" necessary.

Trails are built and maintained without the use of chainsaws in most wilderness, and materials are brought in by pack string rather than helicopter whenever possible. In many wildernesses, there were summer ranger stations, fire lookouts, and trail crew cabins before their designation. These must now be evaluated relative to their necessity for wilderness administration and their conformity to wilderness objectives.

Cultural values are recognized in the Wilderness Act and are irreplaceable values in many wildernesses, yet the sites often indicate clear evidence of human habitation: Another conflict for wilderness managers. Historical and archaeological assessments need to be made of each wilderness, and sites that do not qualify for the National Register of Historic Places may be removed, allowed to deteriorate, or maintained. Some may be used for administrative purposes. Vandalism and theft has become an increasing threat to cultural resources that remain in wilderness, and agencies need to enhance visitors' sense of responsibility for these resources through education, information, punishment, and other methods.

The Wilderness Act recognizes the scientific value of wilderness, and wilderness management benefits from additional scientific information about each area. Yet research must preserve the wilderness character of an area, and be dependent on a wilderness environment. Taking scientific studies to an extreme, a wilderness could be filled with highly visible permanent plot markers, bulky instruments, power lines, or electrical generators. While none would advocate that, conflicts arise with decisions about instrumentation, installations, and the use of motorized and mechanical equipment. In 1986, collection of water samples from wilderness lakes for the National Lakes Survey conducted by the Environmental Protection Agency was to be done by helicopter, but Forest Service staff and volunteers helped to accomplish these collections by horse and foot travel.



Laurel Munson, Assistant Wilderness Manager, Yosemite National Park

Recreational Pressures

Many wilderness visitors also come to enjoy natural surroundings. The 1964 Wilderness Act calls for "outstanding opportunities for solitude or a primitive and unconfined type of recreation." The experience of natural surroundings can also be diminished by seeing washed-out trails, gully erosion, large areas of bare ground, and discarded litter, or equipment. Both solitude and the maintenance of natural surroundings require special attention from managers.

Some wildernesses offer visitors little opportunity for solitude, while others have so little use that most visitors can travel for days without seeing or hearing other travelers. Many wilderness visitors clearly come for day hikes or weekend trips, and become masses concentrated within 5-10 miles of trailheads, clustered around favorite lakes or highly scenic areas. In a few wildernesses, permits or limits have been imposed to provide better experiences, reduce the number of visitors, and restore resource conditions.

Solitude can be interrupted visually by aircraft, gliders, brightly-colored camping equipment, large groups, and too many other visitors on the trail. Solitude may also be disturbed by noise from adjacent land use activities, other visitors, and aircraft overflights by military jets, commercial sightseeing planes, fire surveillance, search-and-rescue flights, and low-flying private planes. In cooperation with the National Park Service, the Forest Service is conducting a two-year study to determine the impacts of aircraft flights over National Forest wildernesses, including an acoustical study and visitor impact survey.

With respect to other intrusions into solitude, wilderness management agencies prohibit the use of hang gliders, bicycles, and the landing of helicopters and aircraft, and allow only necessary motorized and mechanical access to non-Federal land, mining claims, and livestock grazing operations. They do not permit competitive events, and limit group size to 10 or 15 in most wildernesses. Local or regional managers can grant exceptions for some of these prohibited activities, but need to carefully review and sparingly grant them.

Better public education is the key to reducing recreational impacts, since there are neither the funds nor the desire by managing agencies to highly regulate wilderness visitors. Regulations must be established—and enforced—where education has failed or users choose to ignore the rules. Rehabilitation is necessary when both of these fail. Education allows the traditional freedom of choice to maintain wilderness recreation. For these reasons, the 25th Anniversary celebration of the Wilderness Act focused on public awareness of wilderness values and "leave no trace" camping practices.

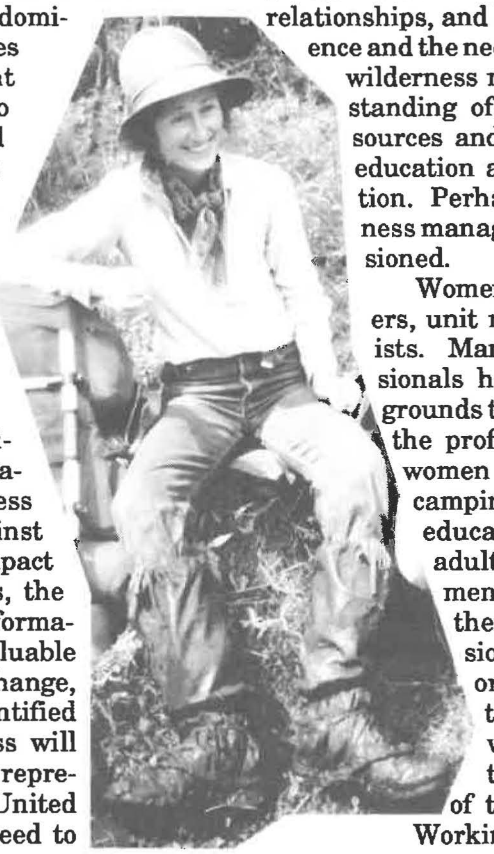
Outfitters and guides have extra responsibilities in wilderness, as they provide services to clients who might not otherwise visit a wilderness. They need to practice "leave no trace" camping and travel techniques, teach primitive skills, and share a reverence and the rules to protect the special nature of wilderness. Most outfitters have embraced the "pack it in, pack it out" philosophy, and do not return to the same camps year after year to avoid resource damage. For those few outfitters who hope to retain the traditional hunting camp they had before an area became wilderness, their permanent structures and caches conflict with the Wilderness Act objectives of having no "permanent improvements or human habitation" (Sec. 2(c)).

What Can Managers Expect?

What management challenges will have to be met in the future, to reduce these pressures and protect "the enduring resource" of wilderness? What new outlooks on wilderness management can we offer? Is there a special role for women in wilderness management?

The Wilderness Act calls for us to keep these special areas "unimpaired for future use and enjoyment as wilderness." Managers need to continue to stand firm in allowing natural forces to dominate. There will always be pressures for more human-directed management of wildlife and fire, more exceptions to the use of mechanical and motorized use, more requests for structures that are evidence of human habitation, and pressures for recreational uses that threaten the wilderness experiences of visitors. With one-sixth of National Forest land in wilderness and more than 91 million acres managed by all agencies, these conflicts face managers at all levels.

As development and global environmental changes alter land more dramatically in the future, it is wilderness that can stand as a yardstick against those imprints of man's work and impact on the land. In 100 or 1000 years, the baseline physical and biological information for each wilderness may be invaluable as a benchmark for global climate change, loss of biodiversity, and yet-to-be-identified environmental impacts. Wilderness will serve as reservoirs of gene pools and represent many of the ecosystems in the United States. Managers and scientists need to make a commitment that critical ecosystems within the National Wilderness Preservation System be characterized and monitoring begin.



Jennifer Miller, Carson National Forest Recreation Staff, in the Pecos Wilderness

Where Do Women Fit In?

The integration of ecological and feminist concerns in "ecofeminism" may dramatically change wilderness management in the future. In a recent article, Lindsey Van Gelder (It's Not Nice to Mess with Mother Nature, *Ms.* Magazine, Jan/Feb 1989) outlines the new ethic and philosophy of ecofeminism as the elimination of dominance in all forms: whites over people of color, men over women, adults over children, rich nations over poorer ones, humans over animals and nature. Wilderness becomes one of the few places where dominance of humans over nature has been eliminated by law. It also stands for the end to the dominance of society over individual freedoms to seek solitude and unconfined forms of recreation. Wilderness may indeed be a reference point for measuring the dominance that prevails on developed land and in society.

In a 1985 article about women in wilderness management (Women in Wilderness Management, *Western Wildlands*: Winter 1985), Joyce Kelly raises the questions about whether women's perspectives are different and valuable. Kelly based her arguments on Carol Gilligan's book, *In a Different Voice* (Harvard University Press 1982), which addresses the different paths of moral development for men and women. Gilligan found that women's moral development relies on an understanding of responsibilities and relationships with others, and men's moral development more on individual rights and societal rules. Women base more of their identity on relationships, and have a greater sense of interdependence and the needs of other people. Kelly argues that wilderness management demands better understanding of the relationships between the resources and users, and greater dependence on education and cooperation rather than regulation. Perhaps women can contribute to wilderness management in ways that were never envisioned.

Women are now working as wilderness rangers, unit managers, and environmental activists. Many of these natural resource professionals have come from more diverse backgrounds than their male colleagues who joined the profession a decade or two ago. Most women learned about the outdoors through camping, backpacking, and environmental education in their childhood and early adulthood. They share strong commitments to wilderness management, and to their own contributions to this profession. It is interesting to note that in an organization that is as "traditional" as the Society of American Foresters, women represent nine percent of the total 19,000 members, but 22 percent of the 400 members of the Wilderness Working Group.

The external and internal pressures on wilderness resources can only increase over the next 25 to 100 years. Wilderness was established to be an "enduring resource," and needs to be protected against those pressures and conflicts. New visions and management approaches are needed, as we more clearly understand the challenges to the principles laid out in the Wilderness Act and the enduring resource of wilderness.

Anne S. Fege is the National Leader for Wilderness Management within the USDA Forest Service in Washington DC. Fege's prior assignments include Acting Deputy Supervisor on the Olympic National Forest in 1987, and Assistant Director of the Northeastern Forest Experiment Station from 1983 to 1986. Among her degrees are a Ph.D. in Plant Physiology from the University of Minnesota and a Master's in Forestry from Yale University.

Development, Crises, and Alternative Visions: Third World Women's Perspectives

Gita Sen and Caren Grown (Monthly Review Press 1987)

The project which this book discusses "Development Alternatives with Women for a New Era" (DAWN) was established in the Third World in Bangalore, India in August 1984. The focus of the project was to encourage oppressed women of the Third World to participate as leaders in development. The expected readers of the book are women.

The book is a compilation of papers from women from different countries. They examine the impact of development on poor people, especially women, in light of global economic and political crises. The authors emphasize a need for alternative development processes that focus on basic needs, on survival even, for the majority of the world's people.

An extensive debate among researchers, activists, and policymakers prior to the third UN Conference marking the UN Decade for the advancement of women was the catalyst for the writing of the papers. Additional activities were designed to widen the participation and interaction among women: dialogues on various aspects of feminism and socialism, drama, audio-visuals, and songs enlivened the discussions and further highlighted the links between macro-level phenomena—such as global debt crises—and women's lives.

Consequently, the book has been incorporated into curricula and field work by research and training institutes, international agencies, and development organizations. Women's organizations have adapted it for use at the grassroot level and the authors hope that individuals from developed societies can also apply DAWN's perspectives.

In various chapters, the authors suggest that we ourselves have to evolve new working styles, new forms of cooperative organization and practices if we are to build a new social order which is just, equitable, and life-affirming for all people. Our methods must correspondingly be open and respectful of differences, and should try to break down hierarchies, power, and distrust.

The main problem for women in the Third World is insufficient participation in the process of growth and development. Increasing the participation of women and improving their share of resources, land, employment, and income relative to men were seen as both necessary and sufficient to effect dramatic improvements in living conditions.

These studies show that socioeconomic status of the great majority of Third World women has worsened considerably throughout the decade in spite of development efforts. With few exceptions, women's relative access to economic resources, income, and employment has worsened; their burden of work has increased; and their relative and even absolute health, nutritional, and educational status has declined. The limited success of the integrationist approach is due in part to the difficulties of overcoming traditional cultural attitudes and prejudices regarding women's participation in economic and social life. An equally important, but mostly overlooked factor, is the nature of the development process into which women were to be integrated.

The book examines first how women's experiences with economic growth, commercialization, and the market are determined by both class and gender; the authors then trace these experiences through colonial and post-colonial times. Chapter one explains why and how strategies designed to achieve overall economic growth, and increase agricultural and industrial productivity have proven to be harmful to women. The authors argued that fundamental conflicts occur both because gender relations oppress women, and because many long-term processes have been harmful and indifferent to the interests and needs of poor people. This is compounded by the shift to bilateralism in loans and by cutbacks in contributions to multilateral institutions by some of the richest, powerful, and militaristic nations. As a result, Third World nations are increasingly being forced to rely on internal resource mobilization to make up for sharp reductions in the availability of external resources.

The earlier belief that rapid economic growth would automatically "trickle down" in the form of improved living standards has not happened. The international development agencies have come to accept the need to provide directly for the basic needs of the majority of Third World people. But even as this strategic understanding started to take hold, the economic uncertainties, upheavals and inflationary recessions of the past decade began to shake the foundations of development analysis and macro-economic theory in general. Governments and regulatory bodies have tended to react to these pressures through increased militarization, domestic repression, and foreign aggression. In donor and agency circles, there is a growing sense of hopelessness, even lack of concern, about the Third World's poor. Agencies like the World Bank have reacted by de-emphasizing basic needs and promoting models of structural adjustment.

In chapter two, the authors linked the past history of development policies and strategies to the current systemic crises in the production and distribution of food, water, and fuel availability, international debt, militarization, and a growing conservatism opposed to women's changing roles. The implementation of development programs has had a reverse effect on poor people in the Third World. This perspective emphasizes critical dimensions of resource use and abuse. It focuses again *Please turn to page 42*

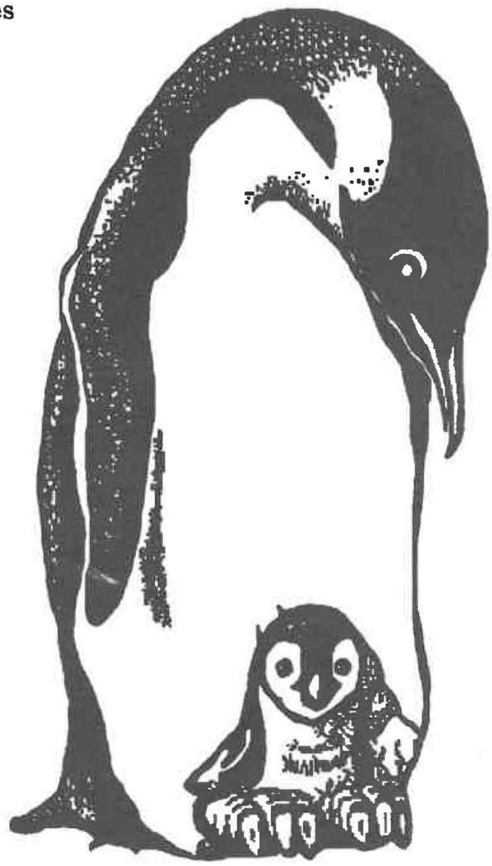
Antarctica is drier than the Sahara but holds 90 percent of the fresh water on the earth. This teenager's experience with seals and penguins and scientists is the stuff movies are made of.

The Journey of a Lifetime

Julie C. Hagelin

How do you prepare for a trip to Antarctica? After my acceptance to the Antarctic Research Project, sponsored by Girl Scouts of America and the National Science Foundation, you can imagine I asked myself that question many times.

During my summer of preparation, there were expected as well as unexpected opportunities. I was offered a student position at NASA/Ames Research Center working with researchers who are studying the ecology of Lake Hoare, one of the Antarctica's unusual Dry Valley lakes. After I'd spent all summer in the lab processing samples from this amazing place it was exciting to know that I might be able to actually visit the Dry Valleys.



About mid-July the inevitable load of papers arrived from the National Science Foundation's contract agency. I had my medical and dental exams, and filled out all the necessary paperwork so I could be outfitted with the proper cold-weather gear. Around this same time, I received a letter from Michele Raney, a woman living in Saratoga, California (my hometown), who said she had spent some time in Antarctica and would help me if I had any questions. I recognized her name from some reading on Antarctica I'd been doing. After leafing through my book again, I found that Michele Raney was the first woman to spend an entire year as a doctor at the South Pole! Women in science like Dr. Raney are very helpful and inspiring role models.

Currently, I'm a sophomore biology major at Pomona College in Claremont, California. There is no doubt that this opportunity allowed me to gain valuable scientific skills, as I spent time at a number of different field research stations.

For many people, the Antarctic is a great mystery. You may be surprised to know that Antarctica is considered the fifth-largest continent and is one and one-half times the size of the United States. It has a harsh desert-like environment that is even drier than the Sahara, yet its massive area holds over 90 percent of the earth's fresh water (frozen, of course). The dominant life forms are penguins, seals, and whales, all of which are dependent on the ocean for their survival. Far inland, away from the sea, there is no life other than humans. Contrary to popular belief, no polar bears or Eskimos live in Antarctica.

In addition to its uses as a scientific frontier, I think Antarctica can be looked at as a place that has the potential to provide global solutions to worldwide problems. No one really owns Antarctica. Certain countries "claim" rather unclear territorial boundaries that cut up the continent like slices of pie. But the two big world powers, the United States and the Soviet Union, have no claimed sector, only a few specific bases. The political atmosphere in Antarctica is such that it makes countries work together, side by side—and cooperate—in order to understand and survive in this unusual environment.

I was in Antarctica from mid-October until mid-December, 1988. During my two-month stay, I was mostly at McMurdo Station (the main U.S. base) and spent one week of my time 800 miles inland at South Pole Station, which is also run by the U.S. All transportation to McMurdo is by Navy plane, which leaves from a staging area in Christchurch, New Zealand. Upon arriving in Christchurch, all personnel are issued cold-weather survival gear for the trip. I must confess that I felt like a human marshmallow with all of my layers of wool, polypropylene, and a thick puffy parka, to top it off. After the six-hour flight, people say your first glimpse of the Antarctic is unforgettable, and mine was no exception. Our luck couldn't have been better when we arrived on a crisp, clear October day (and only 16°F!). I recorded in my diary: "A real sight to behold. Extending across the sound from McMurdo, a glistening meringue-like crust of sea meets the great snow-covered Transantarctic Mountains, which rise up majestically, as if straining to touch the deep, crystal-blue sky."

The next day, I was whisked off to a special snow-survival school which taught a group of us newcomers how to climb in glacial crevasse country and build an emergency snow shelter where we spent one night. Probably the most exciting part of the two-day course occurred when we learned to stop ourselves with an ice axe. Again, I'll quote from my diary: "When we reached the top of the steep hillside, the view was breathtaking. Everything was white as far as you could see. Light, icy-blue hues and slight hints of shadows were beginning to appear on a neighboring glacier in the afternoon sun. Only after we dug out little ledges in the snow with our ice axes could we sit securely on this sheer side of the mountain. Following some brief words of wisdom from our instructor, I began. With one big push, I shoved myself off my ledge, and slid, hurtling down the hill out of control. Then, when I was thoroughly panicked, I turned over on my stomach, jabbed my ice axe into the soft, powdery snow, and gradually slowed to a stop, just as I'd been shown. We all took turns flailing down the hill head first, feet first, on our backs, and on our stomachs. We wanted to get out of control and (imagining it was a real emergency situation) see if we could stop ourselves with our axes. By the time we were finished, I was covered head to toe with snow, my hands were numb, and I was exhausted. What fun, though, to be part of a human avalanche!"

Apart from my action-packed experience in survival school, the rest of my trip was what I'd really looked forward to. I had the opportunity to join different scientific groups and gain hands-on experience while assisting them in their field research. Most of the scientists come down for a few months and set up "camp" out on the sea ice. By dragging little huts out onto the frozen McMurdo Sound (the sea ice is about 10-15 feet thick), researchers are able to live independently and be close to their animal of study. The Antarctic Treaty protects all life and, of course, the animals are used only as long as needed before they are released where they were found.

Weddell seals weigh up to 1,000 pounds and are about 10 feet long. Emperor penguins are close to three feet tall and can weigh nearly 60 pounds. Like most of the life in the Antarctic, these animals depend on the ocean for survival and, as yet, have probably had no contact with humans. Because they have no land predators, many animals are very docile and curious if you approach them on the ice. One day, 10 emperor penguins walked through our camp in McMurdo Sound. I wrote in my diary, "We could see them approaching at a distance this evening. Their black backs and flippers really stand out against the bright snow. When emperors are on the go, they flop down on their stomachs and propel themselves forward with their feet, while using their flippers to steer. The group looked like a bobsledding bird brigade sliding across the ice to meet us. When they finally did arrive, one by one, each penguin used its flippers to push itself upright again. I crouched down on the snow a few feet away and steadied the long lens of my camera to get a good 'nose-to-nose' shot. As they approached, slowly and very curiously, I thought to myself how strange I must look to them in my bright red, thick parka and jet black wind pants, with funny clicking noises coming from my camera. Finally, the penguins encircled me and all stood less than a foot away. They were too close to even focus on with my camera lens! Their necks were outstretched and heads cocked in the most inquisitive gaze. The emperor's feathers are so dense that it's almost as if its body is covered with a slicked-back layer of velvety fir. Occasionally, one of the braver birds would cautiously tap on the plastic back of my camera, or gently pull on the red nylon shell of my parka. It was truly a 'close-encounter' experience for them and for me!"

Also, for the first time, I was able to touch a Weddell seal that we had just captured to attach a small "anklet" tracking device on its hind flipper. I wrote, "As I lay my hand down gently on the mottled tan and gray fur, I couldn't help noticing how soft, but just a little bristly, the seal's hair was. Weddells have only short guard hairs for fir that stick straight out, and remind me of a very well-trimmed crew cut! When I pressed my hand against the seal, the skin was noticeably cool, because a thick layer of blubber insulates its body heat so well. The tips of fur along its back and flippers caught the afternoon sun in such a way that it created a silvery sheen, like an aura of elegance surrounding such a massive body."

After six weeks at McMurdo Station, I was taken to the South Pole Station. The weather was perfect and the flight was absolutely spectacular. I've never seen more beautiful glaciers, ice falls, or majestic peaks than the ones we crossed going over the Transantarctic Mountains. A few days later I ran, skipped, and jumped around the world at the geographic South Pole. Here, there is absolutely no life other than man. In every direction you look, horizon to horizon, all you can see is flat, white, glistening snow. Talk about complete isolation!

The summer population at the South Pole Station is comprised of a friendly, close knit group of about 80 scientists and support personnel. Everyone lives in small, heated buildings that are all inside a giant metal dome. The dome serves as protection from wind and blowing snow.

The weather while I was there was a summery minus-thirtyish, but on the coldest day, the wind chill reached minus 94°F! The regular issue gear I'd used back at McMurdo (along with a few extra wool shirts) kept me very comfortable, as I worked outside with meteorologists and seismologists. Over thousands of years, snow has gradually collected (without melting of course) and has created an incredibly thick layer on the ground—9,000 feet of snow. This makes the elevation so high that it takes a day or two to get used to the thin air.

During my week at South Pole Station, I couldn't help realizing what a harsh environment the Antarctic is, but how easily it could be destroyed by people. I noted in my diary, "So far, no plant or animal other than man has been able to conquer the extreme conditions this far inland. People are able to exist comfortably here year-round. The fact that we've figured out how to live almost anywhere in the Antarctic really gives us a lot of power. For example, we know that the Antarctic holds a giant supply of minerals that would provide a lot of wealth for any country that mines it."

Over many years, organisms in Antarctica have been adapting to live in this environmental extreme. People may look at seals and penguins as very hearty animals and able to handle changes around them, even if we begin to exploit natural resources. What people fail to realize is that, although the animals should be admired for their ability to survive under such forbidding conditions, their existence could easily be threatened by changes in the environment.

Julie Hagelin was a high school Girl Scout at the time she went to Antarctica. She was chosen from a national competition for the honor. Hagelin's story is excerpted from Girl Scout 1990 Wider Opportunities, *a publication of Girl Scouts of U.S.A. Reprinted by permission.*

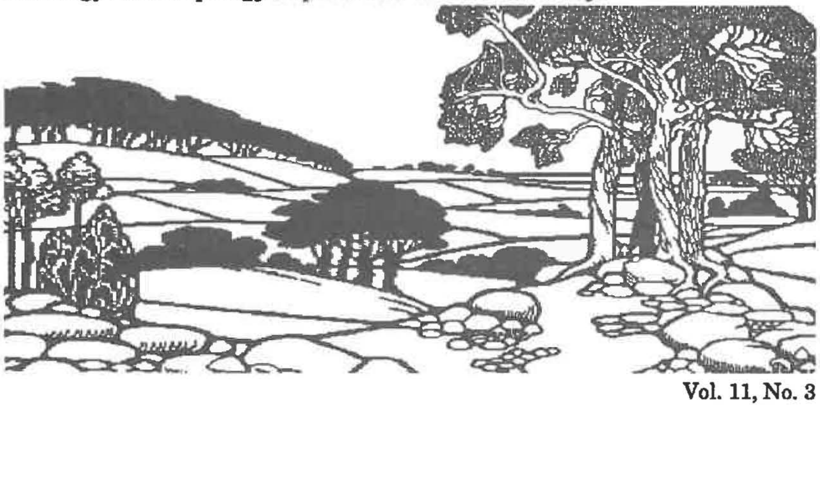
Book Review *from page 39* on the related problems of poverty and inequality and forces recognition of the neglected second-class citizens. The authors, however, point out how the empowerment of women can provide possibilities for moving beyond current economic dilemmas.

In Chapter three, women's contributions as workers and as managers of human welfare are noted as central to the ability of households, communities, and nations to tackle the current crises of survival. Women have begun to mobilize themselves, both individually and collectively, in creative ways. By reinforcing their efforts in food production, commerce, and trade, long-term national self-reliance can be achieved. They say there is and must be a diversity of feminism which is responsive to the needs and concerns of different women, and defined by them for themselves. This diversity builds on a common opposition to gender oppression and hierarchy, but this is only the first step in articulating and acting upon a political agenda.

The authors believe that equality for women is impossible within the existing economic, political, and cultural processes that reserve resources, power, and control for the few. Development is possible only with equity and participation by women. They argue that feminism is a process of economic and social development directed to human needs through wider control and access to economic and political power. The strong views of this book evolved out of the experience of women who have attempted, in practical and analytical ways, to meet with the implications of such constructive programs. The authors' purpose was to place micro-level case studies, projects, and organizing attempts in a wider and more unified context.

I think (and I recommend the book because of it) that this collection explains very well the need to link gender issues—at both micro-level and macro-levels. The main emphasis of the DAWN analysis is that genuine development will not take place unless poor women's perspectives are accounted for. This book can assist in providing that perspective because it synthesizes and analyzes three decades of economic, political, and cultural policies and politics toward Third World women. It focuses on the impact of the current global religious fundamentalism. And finally, the authors conclude that through organization, poor women have begun to mobilize creative and effective development strategies to pull themselves and their families out of crisis.

Caroline James is a Research Associate in the Laboratory of Anthropology at the University of Idaho. Her Ph.D. is from Washington State University in Anthropology. Her interests are in an interdisciplinary approach to Applied Anthropology. Currently she is researching on the "grade and status of the Nez Perce Indian Women" and teaching courses on Indians of North America through the Sociology / Anthropology Department at the University.



PEOPLE

Joyce Muraoka was recently appointed Deputy Regional Forester in the Pacific Southwest Region's headquarters of the Forest Service in San Francisco. Prior to this new assignment, she was Director of Planning and Budgets for almost two years and she held positions on the watershed staff in Region 5, Pacific Southwest Research Station. She also worked in the Washington Office. Her duties will include overseeing Administrative Services, Engineering, Fiscal and Law Enforcement, Minerals, Recreation/Wilderness/Cultural Resources, and Lands and Real Estate.

G. Joan Holt is chairing the J. Frances Allen Scholarship committee for outstanding women doctoral candidates in fisheries science research this year. Selection closes March 31, 1990. Requirements for this $2,500 award can be had from her at the American Fisheries Society, 5410 Grosvenor Lane, Suite 110, Bethesda, Maryland 20814-2199. Last year's winner was **Susan Sogard**, working at Rutgers Marine Field Station in Tuckerton, New Jersey.

Benay Blend, department of history at the University of Georgia, won the Theodore C. Blegen Award for "Mary Austin and the Western Conservation Movement, 1900-1927" published in the spring 1988 issue of the Journal of the Southwest.

From the Narmada Valley in India, **Medha Patkar** traveled to the halls of the U.S. Congress to protest and describe the environmental and human devastation she believes will occur if a major dam is built there with funding from the World Bank. She has played a pivotal role in organizing tens of thousands of tribal villagers to protest, and has organized groups who believe that flooding their communal lands will destroy the environmental support which has allowed them to live at low cash levels.

Constance B. Harriman has been named Assistant Secretary for Fish and Wildlife and Parks. She is an attorney who had worked as special assistant to the Solicitor, and later as Associate Solicitor for Energy and Natural Resources at the Department of the Interior.

Wendy Herrett is now the Forest Supervisor of the Siuslaw National Forest in Region 6 (Oregon). Herrett's Supervisor's Office is in Corvallis. She replaces Tom Thompson.

Elizabeth Estille is the new Director of Recreation Management in the Washington Office of the Forest Service and as such, heads up the recreation programs nationally. Prior to coming to the Forest Service, Estille worked for the Tennessee Valley Association (TVA) as Director of Land Between the Lakes for 14 years, a national recreation demonstration area administered by the TVA. She has also been a consulting forester, a land-use coordinator, a regional planner, and a policy analyst.

Mimi Scissons is a smoke-jumper. She applied and passed all the training requirements, becoming the second woman to graduate from the McCall Smokejumper Base on the Payette National Forest. The first in the U.S. was **Deanne Shullman** in 1981. Scissons belongs to the Rosebud Tribe, one of the seven tribes that make up the Sioux Nation, and was raised on the Duck Valley Indian Reservation in northern Nevada.

Deborah O. Walker was the Program Chair for the successful Urban Forestry Conference held in October in St. Louis. The conference was sponsored by the American Forestry Association and the National Urban Forest Council. Walker organized papers for the 650 attendees on community forests, pollution, global warming, declining forest health, and others.

Kathryn S. Fuller recently announced the elevation of her colleague **Paige K. MacDonald** to executive vice president of the (U.S.) World Wildlife Fund and The Conservation Foundation. They oversee a staff of 200 and a budget approaching $45 million, with 600,000 U.S. members. MacDonald is by training a certified accountant, and in 1975 began work at the Conservation Foundation. She remained with the merged entities after they joined forces in 1985.

Washington's Department of Natural Resources has selected several new women managers. **Kenna Hoyser**, a 17-year-employee was named assistant manager for the Division of Fire Control. She will supervise 12.5 million acres of state and private land, the programs of fire protection districts, forest landowner assessments, meteorology, inmate and seasonal fire crews, warehouses, and properties needed for fire fighting access. **Ann J. Morgan** came from Berkeley to become the new manager of Aquatic Lands Division, in charge of shorelands, tidelands, harbor areas, and beds of navigable waterways. She worked for Pacific Gas and Electric in San Francisco, where she was in charge of 19 geothermal power plants and a budget of $39 million.

The School of Natural Resources at the University of Michigan has increased their numbers of women faculty several fold in the last few years. The women now on the faculty include (in alphabetical order): **Joanna Dougherty, Donna L. Hall, Carol A. Jones, Rachel Kaplan, Bobbi S. Low, Ivette Perfecto, Terry L. Root,** and **Julia M. Wondolleck.**

Jane Pratt is the Division Chief, Environmental Operations and Strategy with the World Bank. She has built a staff representing five religions, eight nationalities, varying educational backgrounds and ages, and both sexes. She said she seeks out women in the environment field "because it is so intrinsically difficult and complex" and needs various points of view. She also recently said that no woman should agree to serve as the sole, token woman on any task force or review committee. That indicates to her that full diversity is not a reality in that organization and women should not be a party to the pretense.

Mary Rojas has been named acting director of Virginia Tech's Office of International Development. She has been the Director of Women in World Development since 1981 and assistant director of the international development program since 1985. During that period her work took her to Africa, Europe, Latin America, and the Caribbean. Her consultancies have included those with Partners of the Americas and FAO.

Heroines and hierarchy: female leadership in the conservation movement.

Women and the History of American Conservation

Sally Ann Gumaer Ranney

There is a long tradition of women's natural history literature as well as conservation activism in America. Through some of the early writings of women we can see the first glimmer of a conservation and preservation concern.

Two women in particular are noteworthy because they were widely read. Born in England in 1831, Isabella Bird travelled to the United States to explore the grandness of the Rocky Mountains in 1873. By no means the first female tourist, she was at the time perhaps the most articulate. This resulted in the publication of *A Lady's Life in the Rocky Mountains* in 1878, a collection of letters to her sister. Her goal was "simply to experience the place the same as any male nature lover." She relished the adventure and its challenges, loving the alpine country and its seasons. She recognized that her civilized ways, the motivation causing her to seek the wild, was also the very thing that threatened it. Bird saw wilderness as a "place of freedom from civilization, never doubting that civilization would overtake the wilds. She did not see the possibility of a relationship, other than that based on challenge, between man and nature" (Norwood, 1984).

Mary Hunter Austin, on the other hand, cherished the desert. She wrote not so much of its magnitude, but of how each detail of life in the desert contributes to the whole. *Land of Little Rain*, Austin's most famous literary endeavor has become a classic in American nature writing. Unlike Bird, Austin believed it possible for civilized persons to accept wilderness without trampling it, but a change of attitude was required. There must be a "certain defeat of pride...a humility in her culture before it can accept the requirements of life in the wilderness" (Norwood, 1984).

Austin set the stage for Aldo Leopold, Joseph Wood Krutch, Edward Abbey and others according to historian Peter Wild. Conservation activist as well as author, individualist and mystic, Austin wrote that "Not the law, but the land sets limits." Many of her chosen battles involved water and Indians. She served on a board of the Governor of New Mexico which was considering construction of Hoover Dam until she discovered it was in support of the project and quit in 'ad nauseaum.' Assertive and well-positioned in Society, she had liberal access to celebrities of the day, using her flair and determination cunningly for the benefit of conservation and feminine causes.

During the progressive movement of conservation at the turn of the century, the role of women as environmental protectors blossomed. The first conservation priority for women became the preservation of forests in the face of "hell-bent-for-leather" logging. Perhaps the most recognized, but not the most influential of these early female conservationists was Gifford Pinchot's mother, Mrs. James Pinchot, who chaired the 100-member Conservation Committee of the 77,000-member Daughters of the American Revolution (DAR).

The Conservation Committee was actively involved in protection efforts for Niagara Falls, the Palisades of the Hudson, and watersheds of the Appalachian Mountains. When the committee wrote to governors asking how they could best serve the cause of conservation, they were told, as reported by Mrs. Jay Cooke Howard, that "most of the governors preferred to have us turn our attention to children rather than to men." The virtues of teaching children conservation along with obedience, patriotism, cleanliness and truth were then recounted in the DAR newsletter.

The insatiable fashion demand for feathers in the late 1800's pushed egrets, swallows, terns, and orioles toward extinction. Editorials in *Field and Stream* called for legislation to protect plume birds. It was the urgency of this issue that prompted organization of the first Audubon societies, which grew to 30,000 members almost overnight. The growth declined as quickly as it mushroomed, but three years later under the leadership of Mrs. Mabel Wright, the various societies banded together under the auspices of the publication, *Bird Lore*.

By 1913 the practice of putting feathers on hats was all but stopped. A Tariff Act prohibiting imports of wild bird feathers passed because of unceasing efforts of the Audubon societies and the General Federation of Women's Clubs. A monumental victory for Audubon, it established the organization as a major conservation force.

Even as Audubon gained strength with over half its membership female, men predominated in official organizational positions. However, because of what some labeled its "estranged alliances" (sportsmen), it hesitated in action on critical issues. This fact came to the attention of one of Audubon's life members, a zealous conservation amateur, Rosalie Edge. As she investigated the situation she became enraged at what she called a morally corrupt organization of dishonest action. She founded the Emergency Conservation Council (ECC) for the sole purpose of distilling Audubon.

Another woman who cut her activism teeth in the suffrage movement, Rosalie was an astute study of male character and quickly learned to match their wit and use her femininity to extract important information or make a point. She used techniques learned during the suffrage era: create visibility on the outside to force reform internally. Her disclosures to its membership of the inner workings and finances of the organization revealed deception on the part of its officials and President Gilbert Pearson. Her target was as much Pearson the President as it was Pearson the good old boy hunter and his chameleon conservation. His chauvinism did not daunt Edge, but his position on predator extinction and trapping—along with misuse of funds did. A passionate and articulate champion of these issues, she magnetized a good portion of Audubon's membership to her side.

Edge's accusations were not without ground. With pitbull persistence she eventually succeeded. Mauled but still reluctant, Pearson was dislodged. The battle cost Audubon membership, which rebounded in time, and Rosalie became known as a staunch New Deal conservationist. She is perhaps without match for fire, honesty,and amateur professionalism during her tenure as keeper of Audubon's conscience.

Another vigorous and dedicated woman, Mrs. Lovell White of San Francisco, founded the California Woman's Club in 1897 in response to the aborted California suffrage campaign and served as its vice president. Combining membership with other women's clubs in 1900, it became the California Federation of Women's Clubs.

In the same year, the Federation's blazing president, Mrs. Robert Burdett announced:

> *While the women of New Jersey are saving the Palisades of the Hudson from utter destruction by men to whose greedy souls Mount Sinai is only a stone quarry, and the women of Colorado are saving the cliff dwellings and pueblo ruins of their state from vandal destruction, the word comes to the women of California that men whose souls are gang-saws are meditating the turning of our world-famous Sequoias into planks and fencing worth so many dollars....Better one living tree in California than fifty acres of lumberyard. Preserve and replant them and the State will be blessed a thousand fold in the development of its natural resources.... (Merchant, 1984)*

She went on to say that forests were the resource of the state's people and the comfort of their homes were made possible by these resources. Thus began one of the most colorful, hard-fought conservation battles in the west. It was not until 1954 and three Federation presidents later that those groves identified for preservation in the early 1900's were fully protected.

The establishment of the Big Basin State Park to protect another species of redwoods is also credited to the forceful Mrs. Lovell White. Under her guidance, Save the Redwoods League was founded upon a membership of both men and women. The organization is still active today and is credited with many later additions to Redwood National Park.

The California Federation of Women's Clubs was also responsible for legislation that established a School of Forestry at the University of California in Berkeley, a precedent carried forward by women's clubs in several other states including Pennsylvania.

Forestry battles continued to rage across the country. In Minnesota, Mrs. Lydia Phillips Williams mobilized a movement to save the Chippewa Forest Reserve from what she called the "Board Feet" mentality. This involved appeal of the "Dead and Down Timber Act" and required sending women to Washington to meet with Congressmen.

Mrs. Harriet West Jackson led the successful fight to save the famous Calaveras Groves. Women's clubs in Florida were creating forest preserves while Maine's clubs established Katahdin State Forest. *The Directory of Historical Trees* came out of the Massachusetts Club. The General Federation's Forestry Committee skillfully guided passage of the Weeks Bill which protected watersheds of navigable streams.

In 1909, Mrs. John Wilkinson of Louisiana formed the Waterways Committee, the purpose of which was to promote clean, cheaper water and water development. The rationale for protecting both forests and waterways was to conserve the health of the American home.

The General Federation of Women's Clubs developed into an 800,000-member organization with *Century* magazine as its organ. The influence and clout of its Forestry Committee played a vital role in the conservation of forests, bird life, and waterways.

The only woman invited to the White House for the Governor's Conference on Conservation in 1908 was Federation president Mrs. Sarah Platt Decker of Denver. In the same year, Mrs. Lydia Williams wrote an article called "Conservation—Women's Work." The article lamented the fact that men do not consider future generations; they are "too busy building railroads, constructing ships, engineering great projects and exploiting vast commercial enterprises." Mrs. Williams' theme was that "man the moneymaker had left it to the woman the money saver to preserve resources..." (Merchant, 1984).

A benchmark year, 1908, also witnessed the founding of the Women's National Rivers and Harbors Congress (NRHC), the female counterpart of Joseph E.

Ransdell's National Rivers and Harbors Congress. It gained 20,000 members in 14 months. One of its reknowned achievements was a bill to protect Niagara Falls from water developers. The NRH Congress also pushed for clean-up of streams and shorelines and assigned women to churches in various communities to lecture on conservation's "moral standpoints."

Carolyn Merchant wrote:

> *[Women] repeatedly called on the traditions assigned them by society in justifying the public demands they were making. Unwilling and unable to break out of these social roles, and supported by the men of the National Conservation Congresses, they drew on a trilogy of slogans—conservation of womanhood, the home, and the child.*

Women were speaking out for conservation, but the lack of access to the polls limited their influence and frustrated them greatly. Pushed by its members and primarily its Forestry Committee, the General Federation of Women's Clubs took a position on suffrage late in the movement. Miss Kate Gordon, Vice President of the National American Women's Suffrage Association, addressed the Federation in 1910:

> *We have never had a democracy, we have only had a sex oligarchy and...there are some men and some women who are not satisfied with existing conditions....We don't want a man-made world; we don't want a woman-made world, but we want a world where the opinions of men and women rate equally and then, and not till then, will we have a true democracy!" (Merchant, 1984).*

The suffrage movement finally succeeded in its goal. But in 1913, the conservation activism of women received a deadly blow. *American Forestry*, the magazine of the American Forestry Association, covered the Fifth National Conservation Congress in Washington, D.C. Of the photographs of some 50 committees and 160 men seated at speaker's tables, not one woman appeared although many women attended. The absence of women was explained away with a statement that the Congress was attended by men who were "no longer in need of general educational propaganda relative to conservation of natural resources, but attended the Congress for the purpose of meeting progressive men in their own and related lines to secure specific information helpful in the solution of their own problems...where active workers desire an opportunity to exchange views on technical problems..." (Merchant, 1984).

This event signaled the arrival of conservation and forestry as technical professions. Women were excluded. Articles about women in forestry disappeared, along with Lydia Williams.

The event which probably precipitated this exclusion was the parting of ways between the General Federations of Women's Clubs and Gifford Pinchot over Hetch Hetchy Dam. Always a supporter of the Federation's conservation committee, Pinchot sided with San Francisco when it proposed a referendum in 1908 to build the dam. John Muir took the issue to the nation; women took it to the steps of the Capitol. The San Francisco city engineer called the dam's opponents "short-haired women and long-haired men," an image that stuck with environmentalists right through the "braided armpit" allegations of the 1960's and 1970's. A congressional representative from the San Francisco area wrote to Pinchot saying that the campaign against the dam was mobilized by "misinformed nature lovers..."

Hetch Hetchy was lost, but the nation awakened. Women were still active in conservation, but the country didn't know it. The Sierra Club outings program offered women the opportunity to experience wilderness. By 1915, over half of Audubon's membership were women. The National Parks Association had more female members than male in 1929.

This early history of women's activism set a subtle tone to which female leadership in conservation has resonated over the past six decades. There were a few campaigns during the 1930's and 1940's, although activities dropped off dramatically because of necessary preoccupation with the Depression, the Dust Bowl, and World War II. Conservation concerns were more in the context of conserving fuel and other resources for the war effort than in preserving landscapes.

After Rachel Carson

It was not until the early 1960's when Rachel Carson published *Silent Spring* that America was catapulted into environmental 'ready alert'. Carson's unidealized descriptions of the insidious and obvious dangers of pesticides reignited recognition of women as conservation leaders and the importance of environmental protection and management. She galvanized both men and women to the urgent biological imperatives resulting from pollution. Reviewers and readers alike found it incredible that a woman could produce a "scientific" book, not realizing that ten years earlier she wrote *The Sea Around Us.*

Carson was the first to articulate what subsequently became one of Garrett Hardin's ecological principles: "the more we know, the less sure we are of our knowledge...and the more we need to know." Although expressed later by others, she also introduced the concept that if we are to err, we'd best err on the side of conservation.

Along-side and following Rachel Carson was a wave of remarkable and dedicated women in conservation. A few attained outstanding national stature.

Margaret Weings of California was instrumental in getting watersheds critical to Redwood National Park, as well as the sea otter and mountain lion, protected. Mardy Murie, one of the first white women to visit Alaska (and wife of wildlife biologist Olaus Murie), worked unceasingly for passage of the Wilderness Act and the Alaska Lands Conservation Act.

Celia Hunter, pilot and pioneer, helped form the first citizen conservation organizations in Alaska and take the state's issues to Washington. Katie Lee, author, singer, river runner, and compelling activist, was deeply involved in the battle to save the Glen Canyon from drowning behind the construction of Glen Canyon Dam. Lady Bird Johnson, perhaps the only First Lady to make conservation one of her personal priorities, worked to protect wilderness and biological diversity. Peggy Wayburn, a long time presence in the Sierra Club (and wife of one of its foremost leaders, Dr. Edgar Wayburn), has been active in issues ranging from wilderness to energy policy.

All are now in their sixties, seventies or eighties and are truly conservation heroines of the first order. They represent a resilient, vanishing breed of women of the last generation. Their personal stories are riveted with hardship and humor, inspiration, and an unflinching dedication to nature. In reviewing their lives, one can detect many common denominators. Each was well-grounded in her relationship with nature through repeated personal experience in the wild outdoors. Each was an inspirational national leader working outside "the system" (except for Lady Bird Johnson) in the usual sense. All have been involved in some other form of public service beyond the cause of conservation and for each it has been life-long commitment and labors of love. All are eternal optimists.

Change and Challenge

There is a disconcerting timelessness about conservation. The issues never seem to die. Objectives and concerns overall are the same whether the cause is saving a species or fighting pollution, yet each issue has a different face masked with various political, economic, and social considerations. In many cases, losses are forever. The art of delay can mean victory, and victories must be won over and over before they are secure.

In the last 30 years, we have evolved, as David Brower says, to a society lead by technology. In the process, conservation (the preservation, protection and wise use of resources) has been magnified dramatically to include environmentalism (the protection of environmental quality, functioning ecosystems, air and water from pollution and mismanagement).

One of the first contemporary environmental issues to experience the energy and enthusiasm of female leadership is toxic and hazardous wastes. Just as women of the progressive conservation movement of the early 1900's were sensitive to the protection of forests and waters in order to preserve the quality of their homes, so are contemporary women attuned to the threats pollution and hazardous wastes hold for family and personal health.

Lois Gibbs of the Citizen's Clearinghouse for Hazardous Wastes (CCHHW) testifies to the compelling grassroots leadership of women in these issues. Helping to coordinate efforts in over 4,000 communities, she asserts that the reason there have been no citings of new hazardous waste facilities in this country in the past ten years is not because of Congress or professional lobbyists haunting the halls of Congress, but because of the power of spontaneous, "unprofessional" leadership in communities, the majority of which is female. Some of these women are surfacing as leaders at the state level with coaching and leadership training from Gibb's organization. Yet on the national horizon, Gibbs and only a small handful of other women are visible.

In land use, forestry and wildlife resources, women also constitute a significant minority. In 1987, Stephen Kellert and Joyce Berry published the results of their indepth study, "Attitudes, Knowledge and Behaviors Toward Wildlife as Affected by Gender", which provides meaningful insights into this dilemma. Their findings are consistent with the research of Carol Gilligan regarding male and female socialization.

Kellert and Berry found that men endorsed exploitation of wildlife or the usurpation of wildlife habitat to yield increased material gains to human society. Males viewed wildlife more in terms of whether populations can sustain particular levels of harvest. In general, they had more knowledge of wildlife anatomy because they also had more direct contact with wild animals through hunting, trapping, and fishing.

Women value animals differently. They have a great affinity toward pets, and relate to remote, unfamiliar wild animals in a more detached manner. They are more concerned about animal welfare. Women were generally less knowledgeable of wildlife issues, such as the coyote-sheep or steel vs. lead-shot controversies. Men predominantly belong to sportsmens' organizations while 62 percent of the women in the study belong to environmental protection organizations and 80 percent belong to animal protection groups.

These are clearly colliding gender variations which permeate resource management approaches as well as professional hierarchies. The predominant view of "how the world works" in resource management is based on male imagery.

One conclusion Kellert and Berry drew from the study is that dominance and control (male) vs. mutuality, support and relationship (female) influences are traditionally held styles of thought and management within natural resource and wildlife bureaucracies. This male approach is alien to many aspiring female professionals, constituting a subtle bias against those entering the field. In 1985, 4.5 percent of all those in the forestry profession were women. Thirty-eight percent of the work force in wildlife agencies are women. However, only eight percent are in higher level positions, while over 80 percent of the lower level positions are held by women. In 1986, 25 percent of all students enrolled in wildlife and forestry were women. But, if recent history is a reliable guide, the increasing numbers of women in training as resource professionals will not translate into significantly greater numbers of women *managing* natural resource agencies. Affirmative action programs, while helpful, are not the ultimate solution because they are fundamentally legislated vs. self-initiated attitudes. There is no turn-key solution to achieving sexual balance. Deeply held attitudes and melding of male and female separateness along with conscious efforts to change the socialization process of both males and females will accomplish professional, sexual balance. This is as much a female responsibility as male.

Leadership: Personal Reflections

What do leaders do that make them successful?

That question has far reaching implications for women in conservation, given the female socialization processes and the nature of natural resources issues, bureaucracies, and organizational structures. A great deal depends on individual experiences and how one views the world and one's own circumstances.

Senator Everett Dirkson said he was a "man of Principles whose first principle is flexibility." In my experience, flexibility is fundamental to the effective and successful leadership of women in conservation. Flexibility is an attitude, not a condition. It is learned over time through practice.

Conservation was not a pre-meditated educational career move for me. I stumbled into it through the backdoor, and a swinging backdoor at that. I chose a small liberal arts college in the mountains of Colorado over Stanford University for its proximity to skiing and cowboys. At the age of 19 I determined my destiny was to paint western landscapes, teach secondary school, dabble in geology and music, rodeo a little and ski a lot, marry a cowboy and live happily ever after on a ranch in the Rockies—all of which I did manage to fit into a sliver of seven years.

A career in conservation and environmentalism were not even remotely in my life's plan. In the beginning, conservation registered emotionally through how I felt about indiscriminate clearcutting in my backyard, wild creatures losing their wilderness and wilderness losing its wildness. I felt angry when pelicans strangled in six-pack plastic and poisoned eagles were stacked five high in frozen piles for counting. I was utterly mystified when magical desert canyons, millions of years in the making, were disemboweled on a prayer for the glimmer of gold or uranium. I was deeply hurt when a very special, personal place I adopted as my own in the forest was to be logged.

When the great blue herons migrated through the family ranch in spring, we felt privileged to witness, if only for a day or two, their path of eternal homecoming. At the river's edge I found the rhythm of nature's resolve. In the wilderness I was inspired by the miracles of simply being and the solitude that allowed the inspiration to well spring.

One winter a female bobcat kept her cubs under our ranch house bathroom floor. My first house was a four-room cabin shared with six Siberian Husky sled dogs. Many full-mooned winter nights, the air so cold and clear it hung like a frozen curtain of glass splinters, we'd turn out the lights, throw back our heads and howl. Within minutes coyotes would answer and one of the most primeval of all nature's duets was in full chorus.

Ranch life calmed and grounded me. I became heart-connected to nature and value-connected to conservation although I did not recognize that fact until many years later. When I did, the realization allowed me to take risks in my personal and professional life and to perceive adversity and conflict as stepping stones instead of stumbling blocks. Living in a small town rural setting, yet not bound by the inbred tradition of life-long residents, also provided a perfect opportunity to experiment with male hierarchies without jeopardizing my interests or a career.

The Roadless Area Review and Evaluation process of the Forest Service in the early 1970's along with the dismantling of the National Timber Supply Act exposed me to the technical, political, and policy sides of conservation. A greenhorn at grassroots organizing, I suddenly found myself in Forest Service files, on the front porches of my neighbors and in the halls of Congress, learning bottom-up and top-down approaches to influencing public land and environmental policy. Living in a pluralistic society provides tremendous opportunity for citizens to influence what happens. When not involved, we accept by default whatever transpires, and that approach was not acceptable to me.

The Wilderness Society (TWS) offered me an employment contract which I accepted after much anguish over leaving my lifestyle in the mountains. I determined there was more opportunity to influence policy through an organizational framework than as an independent agent. I went to work in the Society's regional office in Denver. There I found two mentors of extraordinary vision, knowledge, and dedication to conservation who taught me politics and professionalism.

But my tenure extended over only a few years. An organizational crisis led to the closing of the western regional office. I turned down the position as director of the Society's conservation staff in Washington DC, preferring life for myself and my young son in proximity to the West's wild rivers and grand mountains. I also believed firmly in the power of the grassroots and feared the myopia that can result from life on the Potomac. This decision required a comprehensive reassessment of my commitment to conservation and my own goals within the movement.

Because of my past experiences and socialization, I believe that accomplishment is born of risk, of the courage to step beyond what's comfortable, predictable or known. I also believe that one must take charge of one's own destiny. Thus, I joined some comrades, and with $100 of (ad) venture capital, the American Wilderness Alliance (AWA) was founded. It has been a launching pad for my conservation work ever since which has been studded with many difficult times as well as professional adventures—including a Presidential appointment.

AWA immediately propelled me into another dimension of conservation. It demanded leadership abilities and managerial skills in order simply to survive. Being lean meant being resourceful and tapping inner resources that otherwise might never have been discovered let alone developed. It offered the chance to design a hierarchy instead of being assigned to someone else's, to play the game on my own terms without being submerged in a bureaucracy.

It is extremely important for women to look much more closely than men at their own personal socialization process in relation to leadership positions in conservation. A cause-related profession, conservation demands a steady, deep resolve and inner grounding in order to survive the hurdles and make it through and around the male hierarchy. Self-examination can make the difference between being a "sustainer" or becoming an "achiever," between taking the well-beaten path or choosing "the road less travelled."

Mine was only one path. There are several outstanding women in the leadership ranks of conservation, but on the national scene only a small fraction in comparison to men. A few of these contemporaries include women like Joan Martin-Brown of the United Nations Environmental Programme; Joyce Kelly, Executive Director of the Wildlife Habitat Enhancement Council; Anne LaBastille, ecologist, author and woodswoman; Cheryl Charles, Director of Project Wild; Francis Beineke, former President of The Wilderness Society; Maggi Fox, Southwestern Regional Director of the Sierra Club; Sherri Griffith, President of Western River Guides Association; Scootch Pankonin, Secretary of American Rivers, Inc.; Kathryn S. Fuller, President of World Wildlife Fund and the Conservation Foundation, and Hunter Lovins, President and CEO of the Rocky Mountain Institute.

Can Women Compete Successfully As Conservation Leaders

Female CEO's are almost non-existent among the major national conservation groups, the scene being dominated by male attorneys. This reveals not only signals about the direction in which the conservation movement is headed, but about organizational structure as well.

The stunning complexity of contemporary conservation issues is partly responsible for pushing the national movement away from the grassroots and inward towards itself and specialization. Managerial leadership is in greater demand than inspirational leadership, a phenomenon not unique to conservation, as it is prevalent in the evolution of many social movements including civil rights and women's rights.

Two reasons for the scarcity of female leadership in national conservation are the subtle barriers inherent in male-dominated hierarchies and the difficulty women have in ascertaining early on how the hierarchy functions, particularly beneath the surface: that male perceptions tend to dominate regardless of female presence or capability. Women must be aware of what bearing this has on their own grounding, socialization, and leadership goals. A thoughtful assessment of these factors will help eliminate deadends, unwelcome surprises and frustration.

Another reason for the scarcity of national female leadership is that career costs to women in leadership roles are greater than those for men. Because cause related work is not a nine-to-five job, women are in a position of constantly having to choose between jobs and home, dancing between male and female roles and courting chronic fatigue. Many women eventually surrender themselves to "sustainer" roles as a consequence. In addition, because it takes time to filter upwards in a hierarchy, older, more experience women may be reluctant to take on leadership roles. They are often wiser about the price.

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Sally Ranney is President of the American Wildlands, a national wildland resource conservation and education organization. She is also President of American Wilderness Adventures, a wilderness travel experience organization.

*This excerpt is from a chapter of a forth-coming book about the future of conservation leadership which will be published in 1990 by the Conservation Fund of Arlington, Virginia.

Leaves and Stones

You should not burn leaves
You are polluting the atmosphere and the neighborhood
My Dad said Mt. St. Helen's polluted the atmosphere
These leaves are nothing: a piddly amount
Well, isn't it against the law
I am the law, he said
Walking along the C & O Canal with my Mom
Two boys were throwing stones
Into the muddy water
My Dad used to tell me not to throw stones
If everyone did it
The canal would fill up
I can't help but think
The atmosphere isn't much different
Leaves and stones
Both add up

Constellations

The night was clear and cold
We both looked up at the sky
While I imagined you knew
What you were looking for
Picking out particular planets
and galaxies
I looked for nothing in
particular
Noticing Orion's belt
The gap in our knowledge didn't
matter
We said nothing

Poet Galen Howard is Elderhostel Coordinator at the Bermuda Biological Station, Ferry Reach, Bermuda.

NEWS & NOTES

This Woman Projects a Doubling of Global Population to 10 Billion in the 21st Century. Why Are We Fiddling Around About This Issue?

As a student of the social consequences of development and population growth, Perdita Huston has earned high regard among her colleagues. "She's not an academic, not an expert in the generally accepted sense," says Alex Marshall, chief of media services at the United Nations Population Fund in New York. "She's been there, she's seen it, she's done it." She left her native Maine at age 19 to live in Paris and North Africa. As regional director of the Peace Corps for North Africa, Near East Asia, and the Pacific, she published *Message from the Village* (1978). That book continues to be "quite well accepted" in the international development community, says Dr. Herman Sanhueza, executive coordinator for the Inter-American Parliamentary Group on Population and Development. The next year, after interviewing some 200 women in developing nations, she published *Third World Women Speak Out: Interviews in Six Countries on Change, Development, and Basic Needs.*

Until joining the International Planned Parenthood Federation (IPPF) in London, Huston was Director of the Population and Sustainable Development Programme at the International Union for the Conservation of Nature and Natural Resources in Switzerland.

With these credentials, she should be believed when she tells you that more than one-third of the 140 million women who became pregnant in the last 12 months did not want another child. She's aware that one in every 21 African women dies in childbirth—compared with one in every 6,366 in North America. She knows that 20 percent of developing countries' infant deaths could be prevented if all births were spaced by an interval of at least two years. She's clear on the fact that "family planning saves lives—it saves children's lives, and it saves women's lives."

....Rushworth M. Kidder, *Christian Science Monitor*

Immediate and Aggressive Action, She Says. The Author of *Games Mother Never Taught You* Says Women Should Take Off the Gloves and Fight

It's impossible to overestimate the havoc wreaked on working women during the antiwomen decade of the 1980s. For the last 10 years, government backlash against women's rights and workplace equality has let loose the sexist demons that had begun to be leashed in the 1970s.

Women who must deal with entrenched sexism daily are understandably baffled by gender insults because they have received so many mixed messages. Women were told that all jobs and occupations were open to anyone who displayed ambition; promotions were based on competence; equal pay was strictly enforced; hard work was rewarded; sexual harassment was forbidden.

It takes years of disillusioning experience before women recognize that the propaganda doesn't jibe with reality. Because they can't identify sex bias, they assume they haven't experienced it.

Another offshoot of 1980s newspeak is that women believe employers are maintaining the promised nondiscriminatory work environment. This unwarranted trust stems from women's warped social upbringing, which conditions them to seek a male authority figure to fight their battles.

Who is this bodiless creature you call management? Yes, you work in a sexist environment. Every woman does, because we live in a sexist society. It takes a long time for bias-free policies to filter down through every level of a huge bureaucracy. The only way to speed up the process is for women to take immediate, aggressive action whenever they feel demeaned because of their sex.

This is the 1990s. It's time for Helpless Hannahs and Sleeping Beauties to pick up the challenge and join the activist women who are trying to create a truly equal partnership with men in the workplace.

....Betty Lehan Harragan, *Working Woman*, February 1990

Sexual Harassment at Universities

At the University of Manitoba in Canada, a campus-wide survey found that one-sixth of the women change their course of study or research plans out of fear of sexual harassment. Many choose not to have a particular advisor because of his reputation. The incidence of sexual harassment among the 1200 students and employees surveyed was 19 percent. The survey also found that only 21 percent of sexual harassment victims reported the incidents. The University of Manitoba is one of the few Canadian universities with a full-time "sexual harassment officer."

A similar study done with undergraduates at the University of California, Berkeley, noted that 34 percent of senior women respondents had experienced harassment from authority figures, and 49 percent of those authority figures were professors. Seventy-eight percent did not tell their harassers to stop. Among those who did tell their harassers to stop, 69 percent of the harassers did stop. Half of the interviewees complained that they had not known what the university's sexual harassment policy was.

Another study at three small, rural Maryland colleges reveals that alcohol often played a role in forced sexual activity.

Dartmouth, Rutgers, the University of Minnesota, University of Georgia, Auburn University, University of Wisconsin, and the University of Florida at Gainesville all have conducted studies on harassment and/or violence: this male behavior causes enormous problems for women on American campuses. Universities are responding to this new information in various ways.

....*On Campus with Women*, Association of American Colleges, Vol 19, No. 2.

Forestry professionals have a key role in land use planning in New England

New England's population grew by over 30 percent after 1950. Industries, communities, and recreation facilities expanded to serve the region's needs. This development has increased subdivision of lands and fragmented the working forest....As development continues, the New England land base from which the people draw 35,000 cords of wood each working day for wood products, paper, and energy is being reduced. Moreover, lands are less accessible for recreation, some wildlife populations suffer due to fragmented habitats, and water quality is jeopardized by decreased capacity of forest soils to store and filter wastes. State and local governments have been reacting to these demands rather than anticipating and planning management programs to meet them.

...NESAF Position Statement, *News Quarterly*, July 1989.

Standards for Stoves Gets Tougher, They Get Better

In it's November/December 1989 issue, *American Forests* listed the cleanest-burning wood-stoves, obtained from the EPA list of certified stoves, (March 1989). The magazine's article,Woodburning's New Age by Gary Turbak, discussed the issue of smoke pollution and the new standards and technologies which are leading to acceptance again. The stamped-for-approval stoves, in order of least emissions to more emissions, are:

Venturi PVI-87 (Pellifier, Inc.); Crossfire FS-1 (Thermic, Inc.); Defiant Encore (Vermont Castings, Inc.); P-1000W (Welenco Manufacturing Inc.); Whitfield Fireplace/Hearth Stove (Pyro Industries, Inc.); Schrader Pelletmiser 905-P (Evergreen Metal Products, Inc.); Intrepid II (Vermont Castings, Inc.); Erik SW II Catalytic Environmentalist SSW-1000 (American Road Equipment Co.); Whitfield WP-1 (Pyro Industries, Inc.); Whitfield Advantage WP-2 (Pyro Industries, Inc.); C.D. Large Federal Convection Heater (Vermont Castings); Blaze King Catalytic KEJ-11 (Woodcutters Manufacturing, Inc.); Achiever FPI-1-LEX (Derco, Inc./Grizzly Stoves); 3-C (Hearthstone); Catalytic Tile Fire (Kent Heating Limited); Winterwarm 1280 (Vermont Castings, Inc.); Blaze King Catalytic Insert KEI 1300 (Woodcutters Manufacturing, Inc.; Evolution 8000TE (Sierra Manufacturing Company of Virginia, Inc.).

....*American Forests*, November/ December 1989

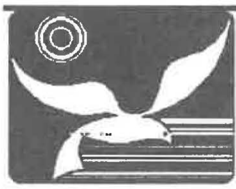
Hearing and Alzheimer Link?

Alzheimer's patients were found to have a significantly greater hearing loss than those in a matched control group, according to a study at the University of Washington in Seattle. In addition, the more their hearing was impaired, the more disoriented these patients seemed. The researchers suggested that the reduction in environmental stimuli and the social isolation and subsequent depression that can accompany hearing loss may contribute to patients' mental dysfunction. By diminishing these effects, use of a hearing aid may potentially lessen or even forestall some of the Alzheimer's symptoms.

....*Journal of the AMA*, April 7, 1989 in The Johns Hopkins Medical Letter, October 1989.

Section Editors

Women in Natural Resources seeks Section Editors for Query and Research in Progress Departments. Requirements: writing skills, knowledge of and membership in the professional community, ability to meet deadlines. A small expense stipend is offered. Send letter of interest and samples of your own writing to: Dr. Dixie L. Ehrenreich, Executive Editor, WiNR, Bowers Laboratory, University of Idaho 83843 (208-885-6754).



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●

For those interested in the Tropical Forestry Action Plan (TFAP), the Food and Agriculture Organization (FAO) puts out a quarterly newsletter on the TFAP. Write The World Resources Institute, 1735 New York Avenue, NW, Washington DC 20006 and ask for their prepared reports, critiques, and proceedings.

●

Do you (or your readers) have suggestions for an organization to whom I could write to get myself registered as a consultant? I would like to continue working (short-term) as a rural, non-western sociologist. I have worked in Ethiopia and Panama for the International Labour Organization and would like to work in the fields of cooperatives or with rural women in developing countries. My name and address: Maaike van Hoeflaken, 404 Hillview Drive, Boise, Idaho 83712.

●

I have recently become involved with the Federal Women's Program (in the Soil Conservation Service (SCS)). Our committee is searching for meaningful programs to bring to all of our employees. I was wondering if you have in the past surveyed FWP mangers for their accomplishments? It seems to me that a lot of work has been done on defining problems, yet I'm unfamiliar with what the outcomes have been.

An article in Volume 10, Number 4 did a great job of outlining trends for women in the Forest Service over the last 10 years. The SCS has made similar findings at the Towards a Workforce 2000 Conference held last year. My question is, what is happening with all of these recommendations? How can I find out?

In addition to looking for information on the FWP, I'm interested in finding out more about public or private sector policies on maternity/paternity leave and childcare issues. Again, if (someone) has compiled such information I would very much like a copy. Send it to me: Lindsay Tullock, Soil Conservation Service, 7 High Street, Skowhegan, Maine 04976.

●

On the Winema National Forest, two new babies were cared for (for six months) in the office at the Engineering Staff area while their mothers continued to work. Prior to the birth of the children, the mothers entered into a simple agreement with Forest Supervisor, Lee Coonce. The agreement covered working hours and schedules, use of leave, location of care, office disruptions or conflicts, safety, and the approximate time the agreement would end. The mothers continued to work, no decline in productivity was noted, salaries continued, and no temporary help was needed. The benefits to the mothers and children and to the staff lead all concerned to recommend it as a viable and innovative approach for the workforce.

●

The Animal Inn program's objective is to maintain diversity in managed forests, including snags and fallen trees, which provide habitat for birds, mammals, and other life. For information write to Animal Inn, Bureau of Land Management-Forest Service, PO Box 7469, Bend, Oregon, 97708-7469.

See back cover.

WiNR

Women in Natural Resources

Information for Contributors

Women in Natural Resources provides information and ideas for, from, and about women. Topics covered in the journal are those of forestry, wildlife, range, fisheries, recreation, arboriculture, ecology, and the social sciences as they relate to natural resources. We address issues of administration and personnel, gender related topics, educational resources, and support mechanisms. Technical articles suitable for reading by professionals in varied natural resource fields are also featured. Our contributors effectively integrate the factual, the personal, and the philosophical aspects of the working professional.

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Women in Natural Resources will provide letters confirming refereeing as needed.

To Submit Short Department Items: Copies or originals with author, source, date, and submittee are all that is required.

For more information: Call Dixie Ehrenreich at 208-885-6754/FAX 208-885-5878 or Lei Bammel at 304-293-4412.

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