

# MEETING THE CHALLENGES: THE WESTERN SECTION'S ROLE IN DEVELOPING TOMORROW'S RESOURCE MANAGEMENT PROFESSIONALS

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The following is a slightly edited version of a plenary address delivered at the Western Section annual meeting in January 2009. The plenary theme was "The view from the future: wildlife management challenges and opportunities of the next 100 years." Key references are listed at the end of the address. Readers will also be interested in the Winter 2009 (Vol. 3, No. 4) issue of *The Wildlife Professional*, which contains a special section on the preparation and training of future wildlife professionals.

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First, I would very much like to thank Scott Osborn for organizing today's Plenary session on the challenges and opportunities facing us and our profession in the coming decades. The other Plenary speakers today have addressed the looming threats of climate change, suburban sprawl, water restrictions, and political and economic expediency. Unquestionably, these challenges are sobering.

As the last speaker in today's panel, my job is not merely to address the implications for TWS and the Western Section, as the title of my talk indicates. Perhaps more importantly, my role is close this panel not just with a call to arms, but also on a note of optimism, and to not allow us to depart with a sense of impending doom and defeat.

Although optimism does not come easily to me (just ask my wife!), I find it easy to be optimistic about the decades ahead. I see a bright future for our profession and our professional society, not in spite of, but rather *because* of the threats of climate change, habitat loss, water restrictions, and other challenges not mentioned or not yet realized. The coming decades will be a phenomenally rewarding time to be a wildlife professional. Even so, serious challenges and transitions lie ahead, but within these challenges lie opportunities for growth and excellence.

### **The Western Section: Subscription, duty or community?**

My first Western Section meeting was here in Sacramento in 1998, when I was a new doctoral student at UC Berkeley. My advisor, Reg Barrett, strongly encouraged all of us wildlife students to join the Western Section and participate in the annual meeting. Now, slightly more than a decade later, I'm a professor myself and it is my turn to encourage my students to participate in this meeting. (Not merely "attend" the meeting – but I will come back to this later.)

Michael Hutchins, the Executive Director of the Wildlife Society, recently wrote an essay for *The Wildlifer* entitled "Life Cycle of the Wildlife Professional." Mike's essay spurred my thinking about why people join the Western Section and what factors lead them to remain involved or to leave.

Modern scientific societies date back to 17th century Italy. Over the centuries, what started as local salons have evolved into national and international organizations with peer-reviewed journals, paid staff and annual meetings that fill a conference center.

Many of us here today are members of more than one society. Yet in recent decades, membership in many scientific societies is declining, especially among younger members. This is particularly troubling because a society that cannot recruit and retain young members will not long persist.

One of the most important reasons for joining is to get information, usually in the form of a peer-reviewed journal. The membership dues are basically a subscription fee. For example, I am a member of the Society for Conservation Biology, the AIBS, and AAAS primarily to receive their respective journals. That is probably the case for The Wildlife Society too – I maintain my membership in the national organization primarily so I can keep abreast of developments in the discipline.

But that's not why I'm a member of Western Section. As my wife (a Past President of the Section) so often says, "The Western Section is different." Yes, the Western Section publishes the *Transactions*. And I mean no disrespect to John Harris and Brian Cypher and all of our members who produce and contribute to the *Transactions*, but I don't feel it is essential reading to keep abreast of regional wildlife management issues. So, at least for me, the journal is not why I maintain my Section membership.

A recent editorial in the journal *Conservation Biology* argued that joining a scientific society is a

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duty and responsibility; it is “the right thing” to do. To me, this argument puts membership on par with taking out the trash or vacuuming out the trunk of your car: it is necessary because the alternative is unacceptable. This may be true, but it is hardly a compelling motivation, especially for students and young professionals with tight budgets and no shortage of other commitments. Surely there is a better justification, beyond just chore or charity.

Moreover, neither of these reasons can explain why we would bother attending the Section’s annual meeting, including this Plenary. Clearly, we don’t attend just for the talks. This is the Internet age: We could stay home and get the same information over the web for less time and expense. And yet, everyone in this room has invested considerable time, energy and expense to be physically present here. Why?

I’ll speak for myself. Of course I enjoy coming to the talks and learning about current projects and new techniques. But mostly, I come here because *you* are here. I come because of Reg Barrett and Bill Zielinski. Because of Brad Valentine, Eveline Larrucea, and Marti Kie. And because of Katie Moriarty, Dirk Van Vuren, Keith Slauson, and others too numerous to mention. To me, this meeting is an annual opportunity to re-connect with old friends, to visit former colleagues and collaborators, and to meet new people who share our common interest in wildlife research and conservation.

This is more than simple networking. This is a *community* of people who are here to learn from each other, to teach each other, to challenge each other, and to simply enjoy each other’s company. In short, I suggest that we are here because *we are here*.

I realize this is pretty touchy-feely stuff, especially for a group whose ideal job site is someplace like the Farallon Islands. But I think this sense of a shared identity, of an emergent community, of a *personal relationship* with the society and among its members is frequently overlooked. And I think this may explain why many young professionals do not maintain their membership in some scientific societies: they never develop a personal relationship with that community. It is just another journal subscription. Therefore, to preserve and expand our membership, I believe we must emphasize not merely our *profession*, but also the existence of this *professional community* and the personal relationships within it.

### **Adversity as opportunity for leaders and problem solvers**

One of the Western Section’s greatest strengths is the balance between focus and diversity within our community. We are all wildlife professionals, but we represent a wide range of wildlife and a wide range of professions. Our members are employed by local, state and federal management and regulatory agencies, public and private universities, biological consulting firms, private timber companies, and more. And as Mike Hutchins noted in his essay, we are students and young professionals, mid-career professionals, senior staff and the soon-to-retire. As a result, there is a tremendous potential for conversations across generations and for career-long mentoring to take place within this community.

Every few years, someone publishes an editorial in *Conservation Biology* that asks, in essence, “Are we really making any difference? Is anybody really listening to us?” Our community doesn’t have that angst. The field researchers and the policy makers are both right here in this room. This gives our community a tremendous advantage over other scientific and professional societies.

Who else is more familiar with the often-ugly interplay between science and politics in the making of conservation policy? After all, the fact that conservation is so political is what makes the science so important. There are no shortage of conferences purely about science. But science without policy is an exercise in frustration. And policy-making without science, to quote the writer Barry Lopez, “is a vision of the gates of hell.”

Who knows more than biologists in California and Hawaii about managing endangered and endemic species in the face of human population growth, urban and agricultural sprawl, and invasive exotic species? Who knows more than land managers in Nevada about the tensions between private industry and public resource management? Who knows better than we do about the challenges of managing wildlife populations in trust for an incredibly diverse public constituency, for game hunting, to protect livestock and human health and safety, to preserve and restore population endangered species, and to better understand all those native non-game species – the bats and songbirds and pupfish and salamanders – that don’t fit into the other categories?

In the coming decades, problems of allocating limited resources such as land, water and money between wildlife and human needs will only become more prevalent. The need for creative, intelligent problem-solvers and dedicated, well-trained conservationists is only going to grow. In fact, the problems we face will create an *increased* demand for our profession and our skills. Our community will only become more important, more vital, and more relevant. So while the challenges facing us may be daunting, the future of The Western Section is bright, largely because of the type of community we are.

### **Recruitment in the internet age: Overcoming “nature deficit disorder”**

A community can persist only as long as it successfully recruits and retains new members. Here again, I think our future is bright. Today’s students are acutely aware of environmental issues, probably more so than any previous generation. And they deeply want to make a contribution, to play an active role in solving these problems. We do not need to convince our students that wildlife conservation is necessary and important; they already know it.

But here is the catch: Yes, no previous generation has had access to as much information about wildlife and wildlife conservation, literally at their fingertips. But what is increasingly absent in the coming generations is a *personal relationship* with wildlife or the land.

Think for a moment about what got you interested in wildlife management and conservation, as a youngster. What was it? What were the first steps that revealed a path toward a career – maybe not so much a job as a *calling*?

Perhaps it was going hunting with your parents or grandparents. Perhaps it was spending time alone outdoors as a kid, exploring the woods near your house, along a creek or a canyon. Or perhaps it was through school, through a special field trip or an outdoor project.

Whatever the specifics, the experience caused a kind of awakening. An awareness of being just a small part in a larger world. An appreciation of senses beyond our own, of deep rhythms tied to the land itself: tides and seasons, harvest and renewal. The realization that you were participating in a legacy that crossed generations. And quick on its heels, the awareness of the responsibility to uphold that legacy; the realization that without proper stewardship, it could all just... go away.

The bad news is, more often than not, the coming generation is not having these kinds of formative experiences. They’re not getting them at home: Rather than growing up in the woods or even on a farm, their world is predominantly suburban and urban and increasingly isolated from nature. They don’t hunt and they most certainly don’t wander around outside alone. Our media culture teaches kids that the woods are dangerous, full of bloodthirsty animals, kidnappers, rapists, methamphetamine labs and psychotic killers. Why would you go there when you could go to the mall instead?

And students are not getting these experiences in school: Field trips and non-athletic outdoor education programs are frequently among the first victims of increased class size, budget cuts, concerns about liability, and an incompatibility with the culture of standardized testing. Increasingly, students are not even getting these formative experiences in college, where they begin to really train for their future careers. The decline of college curricula in field biology and natural history, and its implications for conservation, have been well-documented in recent editorials in *Journal of Mammalogy*, *Conservation Biology*, *American Naturalist*, and *Journal of Wildlife Management*, penned by researchers as notable as Paul Dayton and E. O. Wilson.

So although the younger generation has unprecedented access to an incredible body of information, this is no substitute for direct contact with nature, and the personal relationship with the land and its wildlife that emerges from such contact. These students can spout chapter and verse about the destruction of the tropical rainforests, but cannot identify the trees in their own backyards.

Richard Louv, in his 2005 book, “Last Child in the Woods” calls this trend “nature deficit disorder.” For example, Louv cites a study in 2002 that found that 8-year-olds could better identify Pokemon characters than native species in their own neighborhoods. And, as the old saying goes, people seldom value that which they cannot name.

Kids grow up surrounded by an incredible wealth of natural resources, and yet they are completely unaware that they are living on the front lines of battles they care deeply about. Recently in my upper-division Conservation Biology class at Cal Poly, I showed a map of biodiversity hotspots in the United States. Most of these occur right here in the Western Section: in Hawaii, in the San Francisco Bay Delta, in coastal southern California, and in the Desert

Springs area on the California / Nevada border. One of my students stayed to talk to me after class. He was born and raised in the Bay Area. He knew about the conservation problems there – sprawl, pollution, and human population growth are nationwide, and kids are not oblivious to these – but no one had ever told him of the national and international importance of his own hometown. A troubling proportion of college biology majors here in California have never heard of the California Floristic Province. They are unaware of the global biodiversity hotspot literally outside their doors, and the fact that the space where that Apple Store, Starbucks or Gap Outlet now stands was literally carved out of that heritage. And when students do finally learn this, they are understandably frustrated and angry – not just at the loss but at the years of omission: *“Why didn’t anybody tell me this before?”*

Louv devotes an entire chapter to the topic “Where will future stewards of nature come from?” If students have no relationship with nature, then how can they value it? And why would they be motivated to conserve it? To open the chapter, Louv quotes the naturalist Robert Michael Pyle, who asks “What is the extinction of the condor to a child who has never seen a wren?”

It is a question that has direct bearing to our community here today. A 2008 report from TWS Council noted that the increasing detachment of citizens from nature is one of the top challenges facing wildlife management and conservation. Interestingly, students with such a deficient background can still be deeply passionate about wildlife, but they have no grounding, context, or personal familiarity with how ecological systems really work. As a result, their passion tends to manifest in an emphasis on the welfare of individual animals, not populations or communities, in almost a “pet-centric” view. This is the essence of the “animal rights” mindset that is one of the major hurdles for professional wildlife managers.

It is an incredible irony. At a time when the need for our profession’s values and skills is at its highest, and when public interest in these issues are at a peak, we face the loss of the raw material of our profession’s future. Our culture, our constituents, and our next generations are losing the motivation and dedication that arises from a personal, first-hand tangible relationship with the resource. And that will affect us deeply.

### **The gender thing**

Another change is underway that we can already see in this room, and one that I have noticed during my decade of involvement with the Western Section: The new generation of wildlife professionals will have a greater proportion of women than any previous generation.

This is part of a national trend across all of higher education, where undergraduate enrollment has now become predominantly female. Nationally, the current undergraduate average is 56% females, and the gap is expected to widen in the coming decade. In 1960, women received 35% of bachelors degrees awarded in US; in 2004 they accounted for 58%. The imbalance is even more pronounced in certain areas of study, including pre-veterinary, animal science, and the biological sciences. At Cal Poly, since 2003, women have represented only 44% of the undergraduate enrollment, but are 55% of the students in the College of Science and Mathematics.

Wildlife is no exception to this trend. In 2006, the Wildlife Society established the Leadership Institute for young professionals, to prepare the next generation for leadership positions in the wildlife profession. (Approximately 70% of our current wildlife leaders are expected to retire in the next decade.) Since the Leadership Institute was founded, 83% percent of the participants have been female.

This transformation won’t just affect the length of the bathroom line during session breaks. Surveys indicate that women have different motivations and values than men, in terms of why they choose their careers and what they want to get out of them. To be blunt, men tend to give higher priority to issues of pay and prestige, whereas women are more motivated by helping other people and improving the world.

In the coming decades, it will be no surprise if the ranks of our profession, long filled primarily by white males who like to hunt, will become dominated by women who are more interested in conserving and restoring endangered species. This transition will profoundly affect the direction of our profession, even within the Wildlife Society, such as our Section’s relationships with other regions of the country that are not as diverse biologically or culturally.

### **Implications**

What implications do these trends have for the Western Section and our parent society? How will our community and our programs be affected? Three

facets of our programs for young professionals come to mind, related to student outreach and recruitment, training in fundamental skills, and professional certification.

**1. We must help students become interested in careers in wildlife management and conservation – not merely be the source of information for them after they have developed such an interest.**

The annual meeting of the Western Section already offers multiple programs to benefit students and young professionals, such as the student-professional lunch, the résumé workshop, mentoring opportunities, and opportunity to volunteer in exchange for a waiver of registration fees. These programs are great and should be continued. But we must expand our outreach programs and become more pro-active. To meet the upcoming challenges, we will need best and the brightest of the next generation, and to get them, we must actively recruit students to our profession.

In his essay on the “Life Cycle of the Wildlife Professional,” Mike noted that TWS has the goal of becoming “the ‘go-to’ organization for students dedicated to a career in wildlife management and conservation.” That is an excellent goal, but it’s not enough. I respectfully submit that TWS must do the “going to.” We have to do active outreach and promotion of this profession – not merely its rewards and its merits, but the fact that it even exists!

In my own department at Cal Poly, some colleagues have questioned the need for our curriculum in wildlife ecology and management, saying there are simply no jobs in these fields. Outside of academia, they argue, all of the good jobs for biology students are in healthcare and biotechnology. I couldn’t disagree more. In fact, I think a lot of these jobs, particularly in biotechnology, aren’t much more rewarding than flipping a burger. But when we have a job fair in the department, that’s exactly who shows up: healthcare and biotechnology companies. So it becomes circular and self-reinforcing – students see these as their only options, so they go into these fields, which further supports the argument that these are the only options.

I realize that our profession has traditionally drawn primarily from the Natural Resource departments. But biology departments represent a big constituency that is being missed, to our mutual loss. But attending career fairs is not enough – we wildlife professionals cannot just show up when it’s time for

the kids to land a job. It must happen earlier in the process so they know these careers exist and the kinds of coursework and training that they need to acquire and succeed at a career in wildlife conservation and management.

One way to do this is to increase the communication directly between current wildlife professionals and undergraduate students. Consider the following: Most management agencies don’t have sufficient funding or staff to do all the field projects they need done. Likewise, private consulting firms are having trouble finding qualified entry-level field biologists, i.e., kids who know their biology but can also write. And students want to do field projects and learn skills. They want to use these skills to help solve conservation problems and they want to gain experience that will help them get a job. It would be mutually beneficial for all three of these groups to cooperate. In addition, this would benefit the resource and our profession. Perhaps the Wildlife Society, at either the national or regional level, can develop a framework for helping establish these relationships.

**2. We will need to expand our professional development programs to provide more technical training to students and young professionals.**

The Western Section has an impressive array of training programs and workshops. Many of these routinely set aside space for participation by students and young professionals, which is fantastic and should be continued. But we also need workshops specifically targeted at students, especially workshops that emphasize field skills and techniques. We cannot assume that students have access to such training at their universities, because increasingly, they don’t.

It would be particularly beneficial if these workshops could involve agency employees who are mid-career or in leadership positions. This would allow students to learn what careers in these agencies are really like, and could help stem the loss of institutional knowledge. These cross-generational relationships could even lead to long-term professional mentoring.

**3. We will need to retain and strengthen the TWS Certified Wildlife Biologist program.**

There has recently been considerable debate about the merits and benefits of the Wildlife Society’s certification program. I admit that I have never been a fan of the TWS certification program and I have never applied for certification. In my opinion, TWS

is at its worst when it acts like a private club, a closed-door members-only exclusive society where you're either "in" or "out." Personally, I find this attitude distasteful.

But in light of the well-documented decline in wildlife courses and curricula at general universities, the certification requirements serve as a good indicator for the breadth and depth of training necessary to succeed in this profession. Moreover, as conservation conflicts expand and agency budgets contract, more functions that were once governmentally will be shifted to private contractors and consultants. If management decisions are going to be based on this work, then there must be some standard professional criteria and accountability. We cannot afford to have incompetent or poorly trained people making these decisions, or collecting the data upon which these decisions are based.

As a result of these trends, it is reasonable to expect the Certified Wildlife Biologist program to become increasingly relevant in the coming years.

### **A closing challenge**

As this Plenary session closes, I ask you to keep the following in mind. I ask you, I challenge you, to *participate*, not just attend. Whether this is your first Western Section meeting, or your second, or your thirtieth, I hope you find it rewarding. I hope that you want to come back and participate again, and that you are willing to contribute your time and effort toward making this community a better and more valuable place for all of us. Help us have these conversations across generations and perpetuate this legacy. Help us all remember that without our stewardship, this too can all simply just...go away.

### **ACKNOWLEDGMENTS**

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