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Transactions of the Seventy-eighth North American Wildlife and Natural Resources Conference

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78th North American Wildlife and Natural Resources Conference

Welcome and Opening Remarks

Steve Williams
Wildlife Management Institute
Gardners, Pennsylvania

Welcome to the 78th North American Wildlife and Natural Resources Conference. WMI wants to thank you and all the conference Partners, exhibitors, state agency contributors, and special session organizers who are critical to help make this conference successful. I would like to offer particular thanks to David Whitehurst for his welcome to Virginia remarks and Jim Sterba and Dan Ashe who join me this morning in the plenary session. We look forward to hearing from both of you.

As most of you know, WMI has a long tradition of holding this conference in Washington, DC, each year following the Presidential election. This venue provides the conservation community with an opportunity to meet with Administration and Congressional principals and vice versa. We regret that sequestration has limited federal involvement in this year's event but we trust that you are having a productive conference. In recognition of sequestration and in light of meeting here in DC, my speech will be 5.1 percent shorter than last year. As a matter of courtesy and respect for the presenters and your colleagues, I ask that you silence or turn off your cell phones during the plenary and special sessions. If you want to play "Angry Birds" or Tweet somebody, I understand that the Partners in Flight program has set up an area outside of the formal meeting rooms.

The country has had an eventful year since we last met in Atlanta. We re-elected the President, political parties maintained control of their respective Congressional houses, the federal budget deficit remains, federal debt continues to climb, and the partisan nature of DC politics is solidly in place. On a more positive note, the economy seems to be slowly recovering and unemployment rates have declined slightly. In spite of this gloomy backdrop, the conservation world had a few things to celebrate this past year.

We held a yearlong celebration of the 75th anniversary of the Wildlife and Sport Fish Restoration Programs. Since 1937, almost $15 billion of federal excise tax revenue has been invested in state fish and wildlife agencies. Partnerships among industry, the Fish and Wildlife Service, state agencies, and sportsmen and women have been strengthened. We anticipate record levels of excise tax revenue this year. However, what we believed to be a sacred trust fund between the government and the sportsmen and women who ultimately pay the taxes, also fell under the budget sequestration ax. We must be sure that those sequestered funds are ultimately released to state fish and wildlife agencies. In spite of this setback, the celebration of the world's most effective user-pays, public-benefits conservation program will continue as we embark on the next 75 years of the program.

The 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation was released at the end of last year. Survey results indicated an 11 percent increase in angler numbers and 9 percent increase in hunter numbers over the 2006 survey results. Americans spent more than $41 billion on fishing expenditures, $34 billion on hunting expenditures, and about $55 billion on wildlife watching. According to America's Voice for Conservation, Recreation, and Preservation, these expenditures helped contribute to more than $1 trillion spent on all forms of outdoor recreation. These results provide dramatic evidence that fish and wildlife-associated recreation is a powerful economic force and an important part of our nation's social fabric and quality of life for families and friends.

As we look toward the future let's not forget the past. We are a community built by separate but connected organizations that have achieved incredible things for wildlife and for our environment. During the late 1800s and early 1900s, a handful of organizations set the stage for wildlife conservation in this country. Organizations like:

- New York Zoological Society,
- The American Ornithologists' Union,
- National Audubon Society,
- American Wild Fowlers—now Ducks Unlimited (who also celebrated their 75th year),
- National Wildlife Federation,
- North American Wildlife Foundation, and
- American Game Protective and Propagation Association—now the Wildlife Management Institute.

This year we celebrate the work of a small group of powerful sportsmen who, in the late 1800s, committed themselves to saving what was left of big game populations on this continent. In turn, they directly influenced the formation of each of the organizations that I just mentioned and played a large role in establishing the conservation movement in America. That small group formed a club. Club founders included the likes of Theodore Roosevelt and George Bird Grinnell. Please join me this morning in acknowledging the 125th anniversary of the Boone and Crockett Club.

Each year I take this opportunity to chronicle the highlights of fish and wildlife conservation success during the past year. With state and federal conservation funding crises and legislative gridlock at the federal level, this year's remarks are particularly difficult. We had a glimmer of hope for passing the landmark Sportsmen's Act of 2012. This legislation would have reauthorized numerous conservation laws in the same comprehensive and recurring manner as major water or highway legislation. Our community's unity and strength was demonstrated in the successful passage of the RESTORE Act. The National Fish and Wildlife Foundation secured more than $2.5 billion in settlement funds resulting from the Deepwater Horizon oil spill. The Foundation will administer those funds to restore coastal habitats and enhance fish and wildlife in Florida, Mississippi, Alabama, Louisiana, and Texas. The Department of Justice recognized the importance of assigning these settlement funds to an organization that works with a science-based and partnership-driven approach.

Because of the few conservation success stories last year, today I choose to look forward. Our challenges are substantial but with unity of purpose and transformation as strategies, we can focus on the major challenges that face the profession. On the legislative front, we need to resurrect the bipartisan Sportsmen's Act of 2012 that would have reauthorized the North American Wetlands Conservation Act, the National Fish and Wildlife Foundation, the Partners for Fish and Wildlife program, and Joint Ventures management programs. Under "Making Public Lands Public," the bill would require the use 1.5 percent of the Land and Water Conservation Fund to acquire access to landlocked federal properties. It would raise the Duck Stamp from $15 to $25 providing additional, user-pays, public-benefits funds to expand wetland protection. It would also provide funds for multinational species conservation. We were so close last year to passing this bill into law. Last minute shenanigans doomed passage last year but this year the fight continues.

As a community we need to unify around defining the Clean Water Act provisions aimed at protecting our nation's wetlands. Focus our attention on water allocation and water conservation measures. We need to regroup and reinvigorate our advocacy for climate change adaptation strategies. Building on the success of the Wildlife Restoration Program and the American System of Conservation Funding, we need to continue to promote and enhance hunting and shooting programs on private and public lands. The Council to Advance Hunting and the Shooting Sports met again on Monday to advance this effort through a coalition of industry, agency, and conservation organizations.

A national energy policy, which includes enhanced conservation funding, is critical to our country's future both for providing energy for a growing population and economy and for the natural resource legacy we leave future generations. The drought conditions in the Midwest and increased production of row crops for energy demand an effective Farm Bill that provides incentives for land stewardship and requires conservation compliance measures in return for those incentives. Breaking out

native prairie and subsurface draining of prairie potholes threatens an international migratory resource. Farm Bill programs must address this unprecedented and critical assault on our nation's natural resources.

This year Chronic Wasting Disease was discovered in a game farm about 15 miles from my home in Pennsylvania. Epizootic Hemorrhagic Disease decimated deer in portions of the mid-west. Farming big game and climate change are but a few of the stressors that demand renewed action to control fish and wildlife disease and invasive species that occur nationwide. Landscape Conservation Cooperatives have been developed to address these issues and others across wide expanses of the continent. The focus on prioritizing unified research needs and the delivery of that science to on-the-ground fish and wildlife managers is transformative and this cooperative and coordinated approach will benefit federal and state level conservation efforts.

Our conservation issues are complex, complicated, and numerous but that has been the case for the past 125 years. What has changed in those 125 years is the nation's demand for food, energy, and water. The social demographics of the United States in 2013 look nothing like they did in 1888. At that time, there were 42 states, the frontier era was declared over, 63 million people resided in the U.S., and 65 percent of them lived in rural areas. Today, 315 million people live here with only 15 percent residing in rural areas. Twenty-eight percent of our population is non-white with the fastest rate of growth in the Asian and Latino populations. As we strive to unify our conservation community, we must do so with the goal of unifying the nation's citizens. We have transformed as a country, so we as public stewards, must transform conservation agencies and organizations.

Transformation workshops have been held during the last three North American Conferences. This effort arose in recognition of the change in the country's environment and social structure. Efforts are underway to advance and expand stakeholder involvement, expand partnership opportunities, embrace social science, and incorporate "quality of life" and economic well being into agency structures, functions, and programs. Aligning agency programs and budgets to adapt to changing demographic trends and desires will be a difficult but necessary task in order for conservation to remain relevant to the public. Florida has reorganized and integrated a team approach to align their conservation mission with the demands of their stakeholders. Michigan has established a collaborative approach with stakeholders and sister agencies to focus on "quality of life" issues rather than just a tally of wildlife produced and harvested. The Fish and Wildlife Service has promoted urban refuges to reach out to urban residents and to spread the word about the importance of wildlife conservation for the entire citizenry.

These are but a few of the transformation efforts that are underway across the country. Our community used a unified approach to support conservation legislation and almost succeeded in passage of the most comprehensive conservation legislation in decades. If we unify in our efforts to transform agencies and organizations to adapt to changing demographics and environmental factors, we will have developed a powerful new conservation model. A model that is worthy of the challenges we face going forward. A model that is worthy of the legacy handed to us over the past 125 years.

Thank you for participating in this conference and thank you for your dedication to fish and wildlife conservation.

Nature Wars: Wildlife Comebacks and Denatured People

Jim Sterba
Journalist and Author of Nature Wars
New York City, New York

It's an honor to be here. My book is a history of Americans in wildlife leading up to what I call the "current mess" of a combination of overabundant nuisance and damaging wildlife, and overabundant denatured people. But I'm not going to try to tell you anything about wildlife. That would be very foolish. I thought it might be interesting to talk about how Americans think about wildlife, and one window into that is their attitude toward pets, which has changed a great deal.

Each month for some reason I get a copy of a magazine from pet retailers called *Pet Business*, and each month it's always filled with stuff I never knew my dog needed. For example, there's Snoutstik, which is a nose balm that now comes in three flavors—rosemary, lavender, and pumpkin. There are GoPet treadmills, pre-traumatic stress travel pills, and my current favorite is called Angel Eyes, which is a pill that stops your dog or cat from tearing up from crying, and putting unsightly stains on their newly-groomed coat, which reminds me of a story.

I don't know if any of you are old enough to remember a bluegrass band from Salem, Missouri, called The Dillards. The Dillards, in 1964, did a live concert in Los Angeles. And Mitch Jayne, the bass player, introduced a song something like this. He said,

> "The name of this song is 'Old Blue,' and we do it bluegrass style, which is probably not the way you're used to hearing it. We didn't know it was done another way until we heard Joan Baez sing this at a festival we played at, and she had everybody just crying and frothing at the mouth, and Rodney Dillard here bit Pete Seeger on the leg, and it was just a real emotional experience about this old dog.
>
> "And we do this song so much different because we've got a little different attitude about dogs down home. I know we've got a different attitude about dogs than they do in Los Angeles because we don't shape them up in little balls like they do in Beverly Hills, and dye them lavender and stuff. And you may not know this, but we don't put rhinestone collars on them too much down home. I mean, if there's a rhinestone collar to spare around the house, it went on Mommy.
>
> "I think the real reason we do this song so much different is we've got privies down home. I don't know if you know what those are, but if not, lots of luck. They're a little pine shed that's built about a hundred yards behind the house which in the winter time is about a hundred yards too far, and in the summer time, is about a hundred yards too near. And it's like everything else, you need to compromise there. And people run foxhounds down home. I don't know if you know what those are, but these are dogs that don't have any sense. They run in packs of ten to twenty, and they won't just run for a day, they'll run for a week until their paws give out and they get starved to death and cold, and they'll lay up in the first place that's out of the wind, which if you left your door open, is your privy.
>
> "And you talk about something that'll shake your day up, this has happened to all of us at one time or another. You have to get up in the middle of the night, in the middle of winter, a little skiff of snow on the ground and everything just slicker than deer guts on a door knob out

> there, and you, let me put it this way, if you have to get up at that time of night, in that kind of weather, it's an emergency thing with you. And you get out there through five or six inches of snow, and you open the door and there's a big Bluetick hound of somebody's, curled up in there growling, like he'd built it. And I'll tell you, the long and the short of it is, we figure anybody that's been growled out of their own privy five or six times in winter is not going to sing 'Old Blue' like Joan Baez does."

I tell that story—that was 50 years ago. And just think how far we've come in 50 years. We're all Beverly Hills, in terms of pet pampering. We spend enormous sums of money on our pets, and the pet industry has encouraged us to spend more by treating them like children. In 1994, we spent $17 billion on pet products and services. Last year we spent more than $53 billion, making pets the eighth largest retail sector in our economy, which is behind food and cars, but it's ahead of hardware, candy, and toys. If you go to the American Pet Products Association annual trade show, you'll find all sorts of companies trying to cash in on the next trend, which is to get people reconnected to nature by selling the notion that wild birds and animals should be looked at as new pets, or at least, outdoor guests, or backyard guests.

And backyard guests deserve nice habitats and ponds, which they'll sell you for thousands of dollars. Backyard guests deserve treats, too. Why would you feed your bird guests plain old birdseed, when you could treat them to wild bird cuisine.

Red River Commodities in Fargo, North Dakota offers Valley Splendor Boutique Collection in four gourmet blends, including one called Beak Bistro. A four and a half pound bag sells for $12.99, which is a bargain considering that this blend won't just make your guest birds happy, it'll change your life. To quote from their ad copy, "Beak Bistro will transport you into a dream world of romance, relaxation and light-heartedness, in which a man and woman sit in a small bistro along the carefree streets of Italy." I had no idea birdseed could do that. And this is an achievement made even more extraordinary when you realize that bistros are in France, not Italy.

If birds are backyard guests, what about the squirrels and chipmunks? We already feed them. What about the guest raccoon? Why not toss a dog biscuit to the guest coyote? And I'm sure the bears around our place would love some beak bistro.

Books, films and television have long taught us to see human characteristics and childlike behavior in pets and wild creatures alike. We think nothing of offering them a snack. It's kind of a gesture of kindness. Our certified backyard habitats are supposed to attract butterflies, frogs, and bunnies. What happens when the skunk turns up at this garden party? Probably nothing, possibly panic. No worry. A nuisance wildlife control guy is just a phone call away. And of course he'll tell you to remove or secure all the food sources on your property.

So here we have one growing industry encouraging us to put food out and create backyard habitat to draw wildlife in, and another growing industry on call to take nuisance wildlife out. This is a form of privatized wildlife management. And that's just one facet of the mess I talk about in *Nature Wars*.

As you well know, before the mess came a miraculous comeback of forests and wildlife. The conservation movement nurtured natural wealth far beyond the dreams of its founders. What I say in the book is this. It is very likely that more people live in closer proximity to more wild animals, birds and trees in the eastern United States today than anywhere on the planet at any time in history. That's kind of strangely worded if you look at it carefully, but I think it's true. And if it is, it's wonderful news, of course, unless perhaps you are one of three to four thousand drivers who will hit a deer today, or your child's soccer field is carpeted with goose droppings, or coyotes are killing your pets, or the neighbor's cat has turned your bird feeder into a fast food outlet, or wild turkeys have eaten your newly planted seed corn, or beavers have flooded your driveway, or bears are looting your garbage cans. By the way, I thought of calling my book *What Deer Want*. But I thought that would have shortchanged all the other proliferating creatures in our midst.

And my story isn't about the conflicts with wild creatures themselves, it's more about the conflicts we're having with each other over what to do or what not to do about these problems.

Some people want to save deer from hunters, others want to save gardens and forests from deer, some march to protect Canada geese, while others want to protect parks, lakes and airplanes from geese; saving beavers from cruel traps sounds good, so does saving water wells, sewer systems, prized trees and railroad beds from beaver damage. I say we've divided into species partisans defending one creature or another, campaigning to save feral cats, or to save birds from feral cats. I won't tell you about the 350 years of wildlife slaughter and deforestation, which you all know about. It's the story of what happened next that is difficult for many people to believe.

In the last 150 or so years, forests grew back, wildlife came back and people sprawled out of cities. As I say in the book, we became a nation of forest people. And what I mean is this: if you draw a line around the eastern United States, from the Atlantic coast out to the prairie where the trees run out, you will have drawn a line around the largest forest in the contiguous United States and two-thirds of the American people. Throw out the city dwellers and working farmers inside that line, and you still have a majority of the population. Forests now occupy an amazing 60 percent of the land inside this line. In New England, it's more than 80 percent. The trees grew back right under the noses of several generations. And most of us didn't see it happening.

David Foster, the head of the Harvard Forest, puts it like this: "not since the Mayan empire collapsed, 1,200 years ago, when cropland reverted to jungle, have we seen a regrowth of American forests like we've seen in the Northeast."

Lots of people would argue that these aren't *forest*-forests of course, because they're laced with roads and highways and power lines and drainage systems and housing developments and office parks and shopping malls. But get up on high and look out over some of the most densely populated landscapes in the country, and you will likely see an ocean of trees.

Take Connecticut, the fourth most densely populated state in the country, and it's really sprawl personified. But it's 60 percent forested. And as John Gordon, the former dean of the Yale Forestry School, used to say, "If you look down at Connecticut from on high in the summer, what you'd see is mostly unbroken forest. If you did the same thing in late fall after the leaves had fallen from those trees, what you'd see are stockbrokers."

Anyway, the trees came back because we brought them back, we planted lots of them, but most grew back on their own because we got out of the way by abandoning farmland. Early conservationists ended market hunting and established the North American model, but they didn't envision sprawl. The idea that people would abandon their towns for a home in a housing track off some exit ramp, or on a rural road didn't occur to them. But from post-war boom towns on the edges of cities, people moved farther and farther out, and by 1960, we were almost evenly split—one-third rural, one-third urban, and one-third suburban. By the 2000 census, over half the population—an absolute majority—lived not in cities nor on working farms, but in the vast in-between. Where that sprawl is today, small family farms were a century ago. That donut of farms around cities and towns is largely gone. And in its place is forested sprawl from one downtown to another.

The assertion by animal protectionists that our conflicts with wildlife are our fault because we encroached on their habitat is true. But it's only half the story. As you well know, as populations multiply and spread, many creatures encroach right back, because our habitat is better than theirs. We offer up so much food, water, shelter, edges and protection that sprawl's biological carrying capacity is often far greater than in an unpeopled forest or rural area. And as you know, the rub for many species is when the damage or annoyance they cause outweighs their benefits in the public mind, and this social carrying capacity tipping point is where many battles in today's wildlife wars start.

For a long time, wildlife managers ignored suburban sprawl. It was messy, it was full of antis and it was an aberration on the rural landscape on which the North American model was designed to work. So in came critter control, white buffalo, the for-profit wing of wildlife services, and other wildlife managers for hire. I'm not going to go into how Americans got denatured except to say that they moved indoors, and they started getting their nature indirectly from TV and movies—even back as far as Jack London, who Theodore Roosevelt called a nature faker for putting thoughts and talents and ingenuity into the minds of his animal characters. We'll fast-forward through Disney and Zoo Parade and all that stuff.

Remember that line we drew around the eastern forests? As you well know, that line encircles the heart of the white-tailed deer's historic range. And while state game managers do a pretty good job of management in many areas, the North American model has clearly broken down in many parts of the sprawl. In 1997, Jay Kirkpatrick and John Turner wrote a hilarious Wildlife Society Bulletin about a deer problem meeting in a place they called East Overshoe. Hard to believe that was 16 years ago. Since then, I've been to a lot of deer problem meetings—unfortunately. Many of you know the drill, but here's a little update from a place I'll call Westburbia.

First, Westburbians begin swapping stories about deer problems, with their gardens eaten, their fenders crumpled, and new cases of Lyme disease, and the town supervisors pick up on this chatter, and in the name of good government, schedule a public meeting to calmly discuss deer issues. But the shouting starts early: *They totaled my wife's car*. *I say kill them all*. *We love seeing deer*. *They ruined my garden*. *Put up a fence*. *The ticks are so thick my kids can't play outside*. *How can you talk about killing such magnificent creatures*? *Something has to be done*. *The deer have just as much right to be here as we do*. *Who says we have too many deer*? *How many deer do we have*? The supervisors adjourned, promising more discussion at the next meeting, but they realized they've got a political hot potato on their hands, and vote to hire a consultant to study the problem and report back in six months, which is conveniently after their next election.

Right on time, the consultant presents his $15,000 study, and it says yes, Westburbia has a deer problem. It has too many, an estimated 80 per square mile. It needs to kill some, but he doesn't say that, being sensitive to burbia-speak. Instead, he recommends a systematic program of human-directed mortality. He's roundly booed. At the next meeting, a resident rises to announce the formation of a new coalition called Westburbians Against Murder, which got organizing help from a national animal rights group, which also helped them call in the local TV stations. A member of this group says birth control is the answer. No need for killing, because she's heard that salt licks laced with contraceptive chemicals work perfectly. She isn't sure where, but as usual, it's somewhere conveniently over the horizon. Animal rights people say leave nature alone. They say lethal management doesn't work because it creates a vacuum that more critters move into, which is true. As populations grow they spread. But in the case of deer, studies have shown it takes years. Lots of these people are avid gardeners. A garden is the most managed landscape I know. It is tended relentlessly to produce tomatoes or roses or whatever. But by the logic of the vacuum effect, we wouldn't pull weeds in that garden because new ones are going to grow back.

Back at our meeting, someone wants to know what's wrong with sharpshooters. From the back of the room, another person shouts, *they're mercenaries, hired assassins*. This person turns out to be a member of a hastily formed local group, Humane Christian Bowhunters of Westburbia. This group promises to solve the deer problem responsibly, cheaply and safely, and in return, these guys get the exclusive right to bow hunt in Westburbia. It's like having their own private hunting reserve. *What else can we do?* another person asks. *Bring back natural predators*, someone else says. This one I love.

Bears, coyotes, bobcats, eagles, and other predators kill some deer, mainly fawns. Major deer predators, wolves and cougars, are moving east, but do people really want to share neighborhoods with them. The other deer predator worth mentioning, of course, is us. Since the last Ice Age, we've probably killed more whitetails than any other predators combined. As you know, we now kill about six million annually, and our cars more than a million more. The problem is the majority of Americans live in the sprawl. And sprawl man has largely gotten out of the predation business. He either doesn't hunt himself or doesn't allow others to hunt around him. In the name of safety, he's enacted all sorts of firearms restrictions, which all but eliminate hunting. This means that in the last few decades, for the first time in 11,000 years huge swathes of the whitetails historic range have been put off limits to perhaps its biggest predator.

Remember how I thought about calling my book *What Deer Want*? Well, this is what they want. In Westburbia, years pass, deer problems get worse. One by one, nonlethal options are proposed, debated, and ruled out. Finally, the lethal option arrives, but which one? Bow hunters, gun hunters, sharpshooters—more debate ensues. No matter which option, it's going to cost taxpayer dollars. And one

idea I hear more and more is this: If you're going to use tax money to hire sharpshooters, have them train local hunters in their culling techniques to do the job in the future at less cost. Then, instead of donating culled deer to a food pantry or a landfill, try to recoup some of the costs by selling the venison at local farmers markets. As you know, it's organic, free range, high protein, and foodies love the idea. But many fish and game people recoil because it sounds like a reversion to the bad old market hunting days.

I think some state agency ought to step up and authorize a pilot experiment or two to demonstrate whether it is a return to a dark past or tool for the future that de-demonizes deer once again. Many suburbs and exurbs enacted their firearms restrictions in the name of safety, but safety has become relative. Hunters are relatively safe, while firearms kill 31,000 people in this country. Hunters kill less than 100, usually each other. Deer car crashes now kill more than twice that many, and put 30,000 more in the hospital. Which brings us to the new answer to the age-old question, why did the chicken cross the road? I'm sure there are a lot of ways to show the deer how it's done.

Let me finish with this thought: Americans have largely taken themselves out of the working landscape and mostly forsaken both the destructive ways and the stewardship skills of their ancestors. But the comeback of wildlife and forests all but demands that we reconnect to the natural world, relearn old stewardship skills, and develop new ways of practicing those skills better. Many people in this room are on the cutting edge of that effort. I think there ought to be wild places where we leave nature alone, or mostly alone, places we visit or study but don't stay, but we are ubiquitous on much of the rest of the landscape, and are already manipulating it for good or ill, whether we know it or not. And I think we have a responsibility to manage the ecosystems around us, even in the sprawl, for the good of all their inhabitants—plants, animals, and even people. And I tend to think we can do a better job of it than can white-tailed deer. Thank you very much.

A 21st Century Conservation System

Dan Ashe
U.S. Fish and Wildlife Service
Washington, DC

Good morning, everybody. Jim Sterba and I shared a morning on the Diane Rehm radio show on NPR. So now we're here today to share a morning with you. So, I'm beginning to think that I'm becoming the Ed McMahon to Jim Sterba's Johnny Carson. But Jim's thoughtful analysis illustrates how modern American society doesn't always appreciate our history of conservation success. And what I'd like to do this morning is talk to you about the future and what that holds for us, about the immensity of challenge that lies in front of us, and how we need to make wildlife conservation relevant and important to a rapidly growing and changing society.

So first, let's look at just a piece of the challenge that we face. What's better, faster or slower? Faster. Who thinks more is better than less? What's better, doing two things at once or just one? Two. Alright, faster versus slower, more versus less, two things versus one thing. I think you get the idea. So let's do a little role-play here. I'll ask the question, and you give the answer. Right, Jim Martin? What's better, a long wait or a short wait? Short wait. Exactly. Waiting a short time is better, right? Uh, wait a minute. Conservation is about the long-term. Damn.

Mollie Beattie was the first director I worked for in the United States Fish and Wildlife Service. She said there's only one true conflict, and that's between short-term and long-term thinking. So friends, that's the root of the challenge facing our community today.

We live in a world where fast is better than slow, where more is better than less, where two are better than one, where short-term thinking is more rewarding. This probably has always been so, but today, the stakes seem so much higher. The consequences seem more enduring, and long-term thinking seems so challenging. The universe is now thought to be 13.8 billion years old. It wasn't until around the year 1800 when the world population hit one billion people. So it took all of those 13.8 billion years to get to that point. And look at how fast we've been growing since:

- 1905, Theodore Roosevelt began his first term as President, and the U.S. Forest Service was founded, two billion people.
- 1929, the year my father was born, three billion people.
- 1958, two years after I was born, four billion people.
- 1974, the year I graduated high school, five billion people.
- 1995, the year I joined the U.S. Fish and Wildlife Service, six billion people.
- 2012, seven months after I began my tenure as U.S. Fish and Wildlife Service Director, seven billion people.

Oh, and by the middle of the century, 2050, we'll be sharing this planet with nine billion others, if we're lucky. If we're not lucky, 11 billion others. And yes, most of this growth will occur in Asia and Africa, but this is not an otherworld phenomenon.

The good old U.S. of A is the world's third most populous country, behind China and India. Our 315 million people will be more than 400 million by the middle of the century. And all of these new people, especially those in Asia and Africa, will aspire to be more like us, with greater access to the things that produce quality of life—electricity and education, affordable health care, food and housing, reliable and safe transportation—and they should have these things. And as they aspire to get them, they will think that faster is better than slower, more is better than less, two is better than one, and a short wait is better than a long wait. More people, more affluence, that's what the future holds. So what does this mean for our work?

No matter how you slice it, we're going to ask more of the planet: more food, more fiber, more fuel, more fresh water. And as we occupy more of the world's ecological space, it means less will be available for the rest of what we call biodiversity. Wish it were not so, but it is that simple. Less will be available for everything else. And we need to prepare ourselves and our great institutions to make hard choices.

The byproducts of this growth in human population and affluence are familiar to all of us—habitat destruction and fragmentation, soil erosion, water pollution and scarcity, species invasion, wildlife disease, and now, a changing climate system. We don't have to look far to see the future. We can see the impact of ethanol subsidies and $8-per-bushel corn today in the crisis that is unfolding in the prairie grasslands and wetlands of the Dakotas. And to meet the growing demands of the mid-century population, agricultural experts are predicting that we need to increase production of food and fiber by 70 percent from today's levels.

We can see the future scale and pace of global trade reflected in a new generation of what they're calling "post-Panamax container vessels." These immense vessels will hold 10,000 to 12,000 shipping containers moving massive volumes of commodities, and along with them, biological contaminants like the fungi that today are threatening to decimate North American bat and amphibian populations, or hiding the contraband that is fueling a modern poaching crisis in Africa. This will be the increasing legacy of a world where fast is better than slow, where more is better than less, where two is better than one, and where short wait is better than a long wait.

So what does this mean for our work? It means we cannot expect that tomorrow's world will have all of today's wildlife, in all of today's diversity and abundance and in all of today's places. It means that we'll have to make active choices. We must decide what wildlife will come along for the ride with us, in what abundance and diversity, and in what places. And the more challenging decision, what will not.

This doesn't mean we're resigned to species extinction, but it does mean that we must realize that in many cases, we may not be able to prevent it. My intention is for the U.S. Fish and Wildlife Service to be an organization that makes choices.

We'll do this by entering discussions with partners, particularly our state fish and wildlife agency partners to select and pursue shared objectives. Most commonly, these will be expressed as species-based objectives allowing us to more strategically identify and target work to conserve habitat and ecological functions. Hopefully, you've heard us speak about strategic habitat conservation, and more recently, about surrogate species.

I don't want my remarks today to focus on how we will do this. Yes, how is important. It is technically challenging, it has weaknesses, but not making choices, not setting priorities, not focusing our work is, in my view, irresponsible. The most important thing to say about how we will do this is to say that we will do it in league with our partners, particularly, our state partners, who share with us the responsibility for wildlife management. The more important thing this morning is spending a few minutes explaining why we're doing this. And there are really three reasons.

First, it's about setting priorities, making sure that we are working on what is most important for the long term. Second, it's about success, because where we've done this in the past, and where we're doing it today, we are successful. Third, it's about relevance to a changing American society.

On setting priorities, I think we often approach conservation as an artist painting a landscape. Biodiversity and all the habitat forms it occupies are a limitless palette with which to paint, and we want to paint with all of those colors. But in his book *Steal Like an Artist*, Austin Kleon tells us, creativity is subtraction—creativity is subtraction—that nothing is more paralyzing than the idea of limitless possibilities. By choosing surrogate species, and imposing constraints upon ourselves, we will unlock creativity.

Regarding success, think of what we've accomplished with waterfowl conservation. Millions of acres conserved, billions of dollars, hundreds of partners working together. The possible palette there is about 40-odd species of hunted waterfowl. But it was one color in the palette. The hen mallard who nests in the prairie potholes of North America, who we first painted. She unlocked our creativity and put us on a path to success, not just for waterfowl, but for the thousands of other species who depend upon the same

habitat. Think of what we're doing today with the greater sage grouse. To keep this bird off the endangered species list, we are moving those figurative mountains. The Natural Resources Conservation Service has spent $140 million over the past three years. Its partners have brought $70 million to the table. The Bureau of Land Management is amending resource management plans in 68 planning units, and the U.S. Forest Service, in two dozen others. All 11 range states are engaged, and the Western Association of Fish and Wildlife Agencies, and the Western Governors' Association are leading these efforts.

Great industries are coming to us, all of us. They want to know what they can do. We need to be able to tell them. In the end, we'll drive conservation in millions of acres across the western landscape, and we will conserve this species, along with several hundred others who use the same habitat. And we will preserve ways of life that have been a part of the western culture for centuries. The same thing is happening for the lesser prairie chicken. The same has happened for the grizzly bear, the manatee, the Atlantic striped bass, and dozens of others. When we make choices, when we subtract, we free ourselves to do our most creative work. It's a bit counter intuitive, but it works. And it must work because we compete in a marketplace with people who have done their subtraction. They have unified goals. They're called acre-feet, and board-feet, and AUMs and bushels and barrels and megawatts. If we do the same, if we can choose a limited palette of surrogate species to focus our work, then we will succeed.
Why?

Well, that brings us to the issue of relevance. America is changing, as Jim Sterba reminds us—diversifying, urbanizing, gentrifying, globalizing. But there is one certainty: the America of tomorrow will be different from the one that we know today. And its people will be increasingly denatured and disconnected from the outdoors. This reality presents us with many challenges, but in this cloud of disconnection, I believe there is a silver lining. As people are more disconnected from nature, they seem more and more fascinated with wildlife, maybe because they find it increasingly mysterious. But whatever the reason, it's an opportunity for us to make conservation relevant for them.

If we choose the right targets, then I believe we'll get their support. Addition and abstraction are our enemies. Subtraction and relevance are our allies. That's why the Fish and Wildlife Service is working with great partners like the Association of Fish and Wildlife Agencies to identify species that can serve as surrogates for the ecosystems that support them and many other species. And in the process, I believe we're defining what Arizona's Larry Voyles has called a 21st century conservation system.

Change is difficult, but this effort requires not just tolerance of change, but it requires that we embrace change. Speed is essential, and that requires trust that quite frankly is lacking in our community today. We need to change that. Scientific credibility is our foundation. This community and its commitment to scientific excellence nurtured Aldo Leopold and Rachel Carson. Where are the scientific institutions that will create a next generation of great conservation philosopher? We need to build them. Where's the urgency and unity that created successes like the Pittman-Robertson Act and the Endangered Species Act? My goodness. Today, we can't even get the Congress to raise the price of the Duck Stamp in the face of a prairie crisis. We need to pass a sportsman's act. If we can see past the fog of short-term problems like sequestration. If we can form powerful and shared objectives built around solid science. If we can build trust. If we can invigorate a Land and Water Conservation Fund to help drive adaptation to climate change and other ecological stressors. If we can invest in a leadership and leaders, then we will make conservation relevant to a changing America, and we will accomplish great things. I hope so, because by 2050, the world is going to need to meet the demands of nine to 11 billion people. People who think fast beats slow, more beats less, two beats one, and a short wait is better than a long wait. And Mollie Beattie got it right: the only true conflict is between short-term and long-term thinking. So here's the play in the long game. Thank you very much.

Special Session One.
Do Public Trust Responsibilities Really Matter?

Why is Wildlife a Public Trust Resource?

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Introduction

The notion that wildlife is owned by no one was first written into law in the Roman codes of Justinian (circa AD 529). The concept itself is likely as old as humanity. The Magna Carta (AD 1215) furthered the notion by reserving certain resources as property that the King held in trust for all his subjects. In the United States, after independence from Great Britain, trustee status was recognized as being held by the states by the Supreme Court in 1842, excepting certain resources reserved for the federal government through the Constitution. This common law decree is known as the public trust doctrine. The Supreme Court definitively recognized wildlife as a public trust resource in *Geer v. Connecticut* (1896). Individual states differ in the breadth and nature of their trusteeship over wildlife, as well as in the legal mechanisms used to define it. Some states have codified the doctrine through legislative acts, while some have done so through their constitution. In other states, it is defined via case law. The effectiveness of holding wildlife in public trust depends upon public individuals' awareness of their rights in this regard, the ability to hold the trustee (i.e., government) accountable, and the adaptability of trust management to contemporary values of society. We use case studies of two states to illustrate the variability in trust management of wildlife and offer recommendations to solidify trust management to ensure public support for wildlife conservation.

The Public Trust Doctrine

The public trust doctrine stems from a U.S. Supreme Court ruling in 1842 (*Martin v. Waddell*) that denied a landowner's claim to exclude others from taking oysters from mudflats associated with his property in New Jersey (Bean 1983). Chief Justice Roger Taney, in determining that the lands under navigable waters were held as a public trust, based the decision on his interpretation of the Magna Carta. The Magna Carta, in turn, had drawn upon Roman law that was first written as the Institutes of Justinian (AD 529; Adams 1993). The written codes of Justinian were based upon the second century Institutes and Journal of Gaius, who codified the natural law of Greek philosophers (Slade et al. 1977).

The Romans had an elaborate property system that recognized different kinds of property serving different functions (Sax 1999). Certain property belonged to the gods, certain property belonged to the state, and certain property belonged to individuals. Each of these kinds of property had a special status

[1] The findings and conclusions in this article are those of the author and do not necessarily represent the views of the Florida Fish & Wildlife Conservation Commission.
[2] The findings and conclusions in this article are those of the author and do not necessarily represent the views of the U.S. Fish and Wildlife Service.

and had to be treated in a certain way. For example, the property might not be capable of being bought and sold. There were other kinds of property as well, such as common property (*res communis*). Common properties (1) could not be privately owned, and (2) were for common use by everyone. Roman law included wildlife (*ferae naturae)* within the law of things owned by no one (*res nullius*). These categories were probably for what the Romans perceived to be the nature of things that were abundant and not appropriate for private possession and sale (Horner, 2000). Ownership of a wild animal only occurred when it was physically possessed, most typically when killed for food.

Roman civil law was adopted in substance by the English after the Magna Carta (AD 1215) (Slade et al. 1977). English common law recognized that there were special kinds of property as well, but interpreted this somewhat differently than the Romans. English common law disliked "ownerless things," so the ownership of public resources was placed in the king (Horner 2000). These properties were owned by the king, but not owned by the king for his private use. The king was a trustee, owning certain properties for others as a special responsibility (Sax 1999).

English law applied in the American colonies until independence, when there was no longer a king to be the trustee. In 1842 with the Supreme Court decision in *Martin v. Waddell*, trustee status was ascribed to the states. The trustee status of states in regard to wildlife is transferred to the federal government in the United States when wildlife falls within parameters of the United States Constitution: the Supremacy Clause (federal treaty-making power), the Commerce Clause, and the Property Clause. Chief Justice Taney, articulating the public trust doctrine in *Martin v. Waddell*, acknowledged this when he wrote that the powers assumed by the states were "subject only to the rights since surrendered by the Constitution to the general government" (41 U.S. 367 1842).

Sax (1999) identifies four fundamental concepts of public trust:

1. Public trust is common law—The public trust doctrine is a judge-made law that is interpreted and evolves through court decisions. For the last century or so, most of our laws have been statutory coded laws, but for most of the development of the Anglo-American legal system, common law prevailed.
2. Public trust is state law—Each state has its own version of trust law, unified under the principle of common ownership of certain natural resources as a fundamental right of all citizens, yet each varying in its own manner.
3. Public trust is property law—Fundamental to the notion of trust law is that resources held are held as property. It is the shareholders who have rights, not the resources.
4. Public trust is a public right—Trust property is owned by the public and held in trust for the benefit of the public. You do not have to have special status to make a claim; you just have to be a member of the public.

Roles and Responsibilities

Smith (2011) discussed the role of state wildlife professionals under the public trust doctrine. In essence, state wildlife professionals are trust managers, with trustee responsibility being vested in higher authorities. In most states, the legislature has created citizen commissions that are charged with oversight of trust responsibilities. While this model was conceived to insulate trust oversight from political influence, Smith asserts that actions by citizen commissions (trustees) and state wildlife professionals (trust managers) nevertheless operate within limits and constraints established by governors and legislators, and are thereby subject to political influence.

State Variability

It is widely recognized that states have the legal authority to expand upon the floor established in federal law as to the public trust doctrine (Craig 2007).[3] States commonly apply the public trust doctrine to waters beyond those recognized as public trust waters by federal law, and they may also recognize a greater range of public uses as protected by the public trust (Craig 2007). While the federal public trust doctrine acknowledges fishing as one of the trio of protected public uses alongside navigation and commerce, and *Geer v. Connecticut* extended this to wildlife, it is through state law that wildlife gains more explicit public trust doctrine protections (Craig 2010). Craig (2010) tallies New Hampshire,[4] Louisiana,[5] Minnesota,[6] New York,[7] North Carolina,[8] Virginia,[9] Washington,[10] Alaska,[11] and California[12] among those explicitly recognizing the application of trust principles to varied wildlife concerns.

Craig's cataloguing reveals the complicated nature of public trust theory. Some jurisdictions congeal all of the elements involved in their public trust law together so as to construct a broadly applicable principle. Louisiana is one such jurisdiction, declaring within its Constitution, "The natural resources of the state, including air and water, and the healthful, scenic, historic, and esthetic quality of the environment shall be protected, conserved, and replenished insofar as possible and consistent with the health, safety, and welfare of the people" (La. Const. Art. IX, § 1 [2011]). Contrariwise, Alaska is more nuanced in tailoring its public trust jurisprudence:

> Moreover, while that court has made it clear that the navigable waters public trust doctrine per se does not extend to wildlife management, the state does have a duty under the Alaska Constitution to manage fish, wildlife, and water resources for the people's benefit, "to guarantee the common citizen participation in wildlife harvest, and to divest the [government] of exclusive entitlement to those resources." Thus, according to the Alaska Supreme Court: We have frequently compared the state's duties as set forth in Article VIII to a trust-like relationship in which the state holds natural resources such as fish, wildlife, and water in "trust" for the benefit of all Alaskans. Instead of recognizing the creation of a public trust in these clauses per se, we have noted that "the common use clause was intended to engraft in our constitution certain trust principles guaranteeing access to the fish, wildlife, and water resources of the state" (Craig 2010: 89).

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[3] *See also* Crystal S. Chase, *The* Illinois Central *Public Trust Doctrine and Federal Common Law: An Unconventional View*, 16 Hastings W.-N.W. J. Env. L. & Pol'y 113, 162 (2010) ("Interpreting the *Illinois Central* public trust doctrine as a federal common law "floor" on state public trust responsibilities provides enduring protection against private monopolies of public resources while allowing each state to flexibly apply and expand its own public trust jurisprudence.")

[4] Citing Sibson v. State, 259 A.2d 397, 399-400 (N.H. 1969).

[5] *See* LA. REV. STAT. ANN. § 56:3 (2011), wherein "the ownership and title" to wild birds, quadrupeds, fish and other aquatic life resides in the same list as that pertaining to "the beds and bottoms of rivers, streams, bayous, lagoons, lakes, bays, sounds, and inlets bordering on or connecting with the Gulf of Mexico within the territory or jurisdiction of the state"; *see also* La. Seafood Mgmt.Council v. La. Wildlife & Fisheries Comm'n, 719 So. 2d 119, 124 (La. Ct. App. 1998).

[6] *See* MINN. CONST. art. XI, § 14 (2010).

[7] *See* N.Y. ENVTL. CONSERVATION LAW § 15-0105.

[8] N.C. GEN. STAT. § 113-131 (2010) ("The marine and estuarine and wildlife resources of the State belong to the people of the State as a whole.") *See also* N.C. GEN. STAT. § 1-45.1 (2010), defining public trust rights for the state.

[9] *See In re Steuart Transp. Co.*, 495 F. Supp. at 40.

[10] Washington v. Longshore, 982 P.2d 1191, 1195–96 (Wash. App. 1999), *aff'd*, 5 P.3d 1256, 1259–63 (Wash. 2000) (en banc); *see also* Wash. State Geoduck Harvest Ass'n v. Wash. State Dept. of Natural Res., 101 P.3d 891, 895 (Wash. App. 2004).

[11] ALASKA STAT. ANN. § 38.05.965(18) (2011). *See also* Baxley v. Alaska, 958 P.2d 422, 434 (Alaska 1998).

[12] *See* Ctr. for Biological Diversity, Inc. v. FPL Group, Inc., 83 Cal. Rptr. 3d 588, 596–98 (Cal. Ct. App. 2008) (citing Golden Feather Cmty. Ass'n v. Thermalito Irrigation Dist., 257 Cal. Rptr. 836 (Cal. Ct. App. 1989)); Envtl. Prot. & Information Ctr. v. Cal. Dept. of Forestry & Fire Prot., 187 P.3d 888, 926 (Cal. 2008) (quoting and citing Nat'l Audubon Soc'y v. Superior Court, 658 P.2d 709 (Cal. 1983)); *see also* Cal. Trout, Inc. v. State Water Res. Control Bd., 255 Cal. Rptr. 184, 212 (Cal. Ct. App. 1989).

In similar fashion, the California Supreme Court has identified "two distinct public trust doctrines"—one stemming from the common law and regarding the duties at play in decision-making about water resources, and a second that pertains to wildlife emerging from statute. Despite insisting on this distinction, the court acknowledged that "[t]here is doubtless an overlap between the two public trust doctrines—the protection of water resources is intertwined with the protection of wildlife" (*Envtl. Prot. & Information Ctr. v. Cal. Dept. of Forestry & Fire Prot*).

Regardless of what high degree of care courts may exercise in separating the threads of legal history while enunciating the terms of the public trust, western states in particular (with California chief among them), Craig argues, are pioneering an "ecological public trust," incorporating wildlife as one of multiple natural resources beneath the umbrella of the public trust doctrine (Craig 2010: 84). Other legal scholars have documented this evolution (Rieser 1991), and some stridently favor the state-based extensions and advocate further advancement. Meyers, for instance, criticizes "the tendency to approach wildlife regulation and management as an isolated exercise to satisfy short-term human goals" (1989: 723-724) and posits that the public trust doctrine "offers a framework for resource management and decision making that is ecosystemic" (1989: 725).

Horner, too, has argued for a deeper embrace of wildlife as a public trust resource.

> We must stop merely "paying lip service" to the public trust doctrine in wildlife. Although the specific origins of the doctrine are sometimes difficult to discern, the idea that the government holds certain natural resources in trust for the benefit of all people cannot be, with intellectual honesty, the subject of legitimate controversy any longer. What is needed now is a conscientious and concerted effort to turn the discussion toward understanding the elements and boundaries of the doctrine with regard to wildlife (2000: 25).

In Florida law, there is a broad constitutional recognition of the common-law public trust declaring that "title to land under navigable waters, within the boundaries of the state…including the beaches below mean high water line, is held by the state, by virtue of its sovereignty, in trust for all the people" (FLA. CONST. art. X, § 11). The umbrella of the public trust extends over tidal and fresh waters that are navigable in fact, navigability similar to the test developed in federal case law (that is, a waterway is navigable if in its natural state it can potentially accommodate commercial use [Craig 2010]) but somewhat broader, notably, in accommodating the floating log in *Bucki v. Cone* [1889] and suitability for recreational uses tests in *Baker v. State ex rel. Jones* [1956]). In Florida, the public trust doctrine protects uses including "navigation, commerce, fishing, and bathing and"—significantly—"'other easements allowed by law'" (*Brannon v. Boldt*).[13] This latter phrase, alongside language from *Hayes v. Bowman* (1957) stating that public trust lands "are held in trust for navigation, fishing, bathing, and similar uses" supports the idea that the state's public trust jurisprudence allows for an evolution toward expansiveness.

Common Themes: Shared Responsibilities for Trust Resources in Florida and Alaska

Florida

By the mid 1950s, case law had set the stage so that in Florida the state Attorney General could declare, "It is an established principle that the fish and game in the state belong to the state, in trust for the use and benefit of all the people."[14] Article II, Section 7 of the Florida Constitution, in effect since 1968, declares it the policy of the state to conserve and protect its natural resources and scenic beauty and has long been considered a qualification on the powers granted to the state's constitutionally-empowered wildlife agency. In *Askew v. Game and Fresh Water Fish Commission*, 336 So 2d 556 (Fla. 76), at issue

[13] Quoting Broward v. Mabry, 50 So. 826, 830 (Fla. 1909)).
[14] Florida Attorney General's Opinion 54-357. *See also* Sylvester v. Tindall, 18 So.2d 892, 898 (Fla. 1944), acknowledging the trust relationship and stating, "The State has a sovereign right, and a consequent sovereign duty, in regard to this matter of game and fish conservation."

was statutory authority for another state agency, the Department of Natural Resources, to introduce fish species for the purpose of aquatic weed control without permit from the Game and Fresh Water Fish Commission. The court upheld the constitutionality of the law in the face of the Commission's preeminent constitutional authority over wild animal and fresh water aquatic life because of Article II, Section 7. "In construing the Constitution every section should be considered so that the Constitution will be given effect as a harmonious whole. A construction which would leave without effect any part of the Constitution should be rejected. … Were we to hold the challenged statutes unconstitutional the Legislature would be stripped of its power in many instances to carry out the policy of abatement of water pollution, as embodied in Article II, Section 7." *Id.* at 560.

Alaska

In the late 1990s, a ballot initiative was certified in Alaska, which, if passed, would prohibit the use of snare traps to capture wolves and criminalize possession, sale, or purchase of wolf pelts obtained with the use of snare traps. Two individuals and two organizations sued to remove the proposal from the ballot. The superior court of Alaska agreed, finding the initiative process prescribed by the state constitution "clearly inapplicable" to natural resource issues, and stating that the state's trusteeship means it retains exclusive legislative powers over natural resources. The state supreme court reversed this decision and the initiative was reinstated to the ballot for the November 1998 election. (Voters rejected the measure.) In the opinion of the Alaska Supreme Court in *Brooks v. Wright*, 971 P.2d 1025 (Alaska 1999), the legislature does not bear powers over natural resources to the exclusion of the power of the people despite a constitutional provision vesting the legislature with the responsibility to "provide for the utilization, development, and conservation of all natural resources belonging to the State, including land and waters, for the maximum benefit of its people." The court described this constitutional provision as conferring a "trustee-like duty."

The Alaska Supreme Court predicated its decision regarding the inexclusivity of the legislature's powers on an examination of the legislative history of the state constitution, where it found there had been a vote on whether the term "the legislature" should mean the legislature *exclusively*. The narrowing of that term was rejected. Thus, if the court "were to grant the legislature an exclusive right to propose wildlife legislation based on the language of Article VII," ("The legislature shall provide for the utilization, development, and conservation of all natural resources belonging to the State, including land and waters, for the maximum benefit of its people") it "would be relying on the very hidden meanings…that the delegates at the constitutional convention squarely rejected." The phrase "clearly inapplicable," it found, only served to restrict the use of the initiative process where the legislature serves as a check on other branches of government—a concern not existing in argument over the interpretation of the natural resource provision of the constitution. It also noted the intent of that a subject would be "clearly inapplicable" for an initiative where "even 55 idiots would agree it is inapplicable."

The appellees contended that natural resources issues "are 'sensitive and sophisticated' in Alaska, and therefore should be free from the 'impulsive enactment of laws by the general public.'" The court agreed that "such issues are sensitive and complex… But the framers of the constitution chose to include the initiative process as a law-making tool with full knowledge of the risks inherent to direct democracy." It further found that, "Even if Article VIII had not contained the words 'the legislature,' the subject of wildlife management is not so clearly inapplicable to the initiative process as to pass Delegate McLaughlin's '55 idiot' test."

Conclusion

Do public trust responsibilities matter in relation to wildlife? Regardless of the differences between how states have interpreted the demands of the public trust doctrine, and whether or not courts have recognized wildlife public trust as the same as the water public trust, the consensus in modern American law suggests that they do. As has been described here, constitutions and case law alike evince the high public interest inherent in wildlife resources.

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Getting Back to Basics: How Employing PTD Principles Can Help Garner Support for State Fish and Wildlife Agencies

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Abstract

The essence of the public trust doctrine (PTD) is that the public, including future generations, is the beneficiary of our fish and wildlife resources, and that policy makers and state fish and wildlife agencies—as the trustees and trust managers, respectively—must manage those resources in the best interest of beneficiaries. Further, trustees are responsible for weighing demands and needs regarding management and use of those resources to help ensure their long-term sustainability. For trust managers to understand those interests such that they help inform trustees and effectively build natural resource conservation support and capacity, it is important to not only seek input from beneficiaries but to foster dialogue with and among a diversity of interested beneficiaries (i.e., stakeholders).

In the context of fish and wildlife conservation, state fish and wildlife agencies (SFWAs) are the key trust managers. SFWAs generally have well-established relationships with traditional stakeholders and institutionalized methods for engaging them via informal and formal methods. Relative to traditional interest groups (i.e., hunters, anglers), SFWAs do not have established and enduring relationships with the diversity of nontraditional stakeholders and tend to interact with those stakeholders less often.

This paper discusses the benefits of a unique forum in which traditional and nontraditional stakeholders (including those interested in fish and wildlife and those interested in broader ecological and environmental issues) convene regularly to interact with SFWA leadership and among themselves, the Minnesota Department of Natural Resources Roundtable (Roundtable). The Roundtable evolved out of interest from traditional stakeholders to have formalized opportunity for more effective and direct dialogue with Department leadership. Initially focused around fisheries issues, the Roundtable quickly expanded to include wildlife and, soon thereafter, nontraditional stakeholders with a diversity of interests in wildlife and broader environmental issues such as clean water.

Ultimately, this annual gathering helped foster a diverse coalition that has served fish, wildlife and other natural resources well, including gaining political support for the passage of conservation-oriented constitutional amendments and improved fish and wildlife related policy and funding. A primary and enduring outcome of this collaborative approach is that the SFWA is accepted as a credible source of science and technical information that supports partner agency and non-governmental organization efforts; is transparent in the use and accountability of funds, and it actively and genuinely engages with broad coalitions of shared interests related to fish and wildlife. This approach helps facilitate the ability of the trust manager and ultimately the trustee to work with the conservation community to fulfill its Public Trust obligations.

We conclude that it is not only the trust managers' responsibility but obligation to seek ways to regularly convene diverse groups of stakeholders for meaningful dialogue to ensure the best conservation outcome for all beneficiaries now and in the future.

Introduction

Much has been written (Gill 2004, Jacobson et al. 2010a, Batcheller et al. 2010) about the increasing challenges (e.g., climate change, land use change, invasive species public apathy) facing conservation of fish and wildlife. These issues, compounded by declining budgets and growing demands (Martin et al. 2012), make difficult times for those entrusted to conserve our fish and wildlife resources for the benefit of current and future generations. To address these challenges effectively, the Wildlife Conservation Institution (Institution) must transform (Jacobson et al. 2010b), starting with a broadening of its conservation paradigm, the North American Model of Wildlife Conservation (Model) (Decker et al. 2009). There is little disagreement among wildlife professionals that the Model has resulted in great conservation success (Geist et al. 2001, Prukop and Regan 2002, Mahoney 2006, Williams et al 2009), but a changing conservation context requires us to reevaluate whether the Model adequately captures the breadth of wildlife-related issues, interests and concerns to maintain its relevancy with society. It has long been recognized that state wildlife agencies have responsibility for managing resident wildlife in the public trust and that wildlife in this country is the property of the people, but the primary clientele of state wildlife agencies has traditionally been hunters, trappers and anglers (Boggess 1981). Decker et al. (2009) stress that the Model, as successful as it has been, needs to be expanded in scope to encompass the diversity of contemporary stakeholders and their respective interests in fish and wildlife conservation. Boggess (1981) suggested that agencies managing wildlife should do so in the public interest for the maximum collective benefits of society and that the goals and objectives of management should be broadened to encompass a wider range of public needs. Similarly, Williams et al. (2009) suggest that one of the greatest threats to the model is unwillingness to revisit and perhaps challenge some of the pillars of the Model in light of existing challenges. As the cornerstone of the Model (Smith 2010), the PTD is a logical place to initiate discussion.

The essence of the PTD is that the public, including future generations, is the beneficiary of our fish and wildlife resources, and that policy makers and state fish and wildlife agencies (SFWAs)—as trustees and trust managers respectively—must manage those resources in the best interest of all beneficiaries (Batcheller et al. 2010). Trustees are responsible for conserving fish and wildlife in the best interest of the collective current and future citizenry, regardless of their level of interest (i.e., stake) in the resource. Decker et al. (in review) suggest that trustees should conserve fish and wildlife to ensure positive outcomes and subsequent benefits to society. Realistically, according to the authors, trustees give greater weight to those beneficiaries who have a vested interest in fish and wildlife conservation. Traditionally, the primary stakeholders considered by trustees have been consumptive users of fish and wildlife (i.e., hunters, trappers and anglers), those who pay for conservation via revenues generated through license sales, ammunition, firearms, and other sporting equipment related to those activities (Jacobson and Decker 2008). Both trustees and trust managers generally have well-established relationships with traditional stakeholders and institutionalized methods for engaging them via informal and formal methods (Gill 2004, Nie 2004, Jacobson and Decker 2008). Relative to traditional stakeholders, SFWAs do not have a long enduring relationship with the diversity of nontraditional stakeholders and tend to interact with those stakeholders less often (Jacobson et al. 2010b).

It has been suggested (Mahoney 2006, Jacobson and Decker 2008, and Humphries 2010) that wildlife professionals must embrace a broad perspective as they consider and apply the PTD or otherwise risk an erosion of the cornerstone on which the Model was built. In this paper, we discuss the PTD as a way to orient needed institutional transformation; provide a case study about how the PTD premise has been used to develop a participatory approach for engaging a diversity of stakeholders in discussion and action to achieve conservation benefit; and end with a summary of insights and implications to help assist those entrusted to steward fish and wildlife conservation. We place emphasis on SFWAs as trust managers, although we note that the Institution as a whole, as well as public beneficiaries of fish and wildlife conservation, have roles and obligations in ensuring desired conservation impacts.

Roles and Responsibilities

Because states have primary jurisdiction over fish and wildlife, with exceptions only for migratory birds, marine mammals and those species that are federally listed as threatened or endangered, state policy makers and SFWAs are primary stewards (Batcheller et al. 2010). Smith (2011) clarifies the role of elected or appointed policy makers or officials (e.g., legislators, fish and wildlife boards/commissions, commissioners, directors) as trustees and SFWAs as trust managers. According to the author, the distinction is due to the fact that elected or appointed positions are inherently subject to the political process, and therefore have more direct accountability to the public. For example, the public has formal and sometimes direct access to legislative/board/commission members through public comment opportunities at meetings or other means via the statutory or regulatory process. SFWA professional staff are civil servants and not politically appointed so are not typically subject to direct political influences. Although the responsibility of both is to conserve fish and wildlife in the best interest of beneficiaries, trust managers are directly accountable to trustees, who are directly accountable to the public. Further, trustees are responsible for weighing demands and needs regarding management and use of those resources to help ensure their long-term sustainability. Trust mangers manage trust resources per the broad guidance of trustees via laws, regulations and agency policies. Decker et al. (in review) stress that although interpretations of PTD may differ among states, a common thread is that there is a broad "obligation" to ensure benefits to public beneficiaries. Those beneficiaries are defined broadly by the PTD as current and future generations. Decker et al. (in review) contend that to understand what those public benefits are requires broad stakeholder input. For trust managers to understand those interests such that they help inform trustees and effectively build natural resource conservation support and capacity, it is important to not only seek input from beneficiaries, but to foster dialogue and partnerships with and among a diversity of interested stakeholders.

Broadening Perspective Regarding Trust Beneficiaries

The Institution has been criticized for being parochial in terms of its focus on hunted and fished species and consumptive users as its primary stakeholder base (Nie 2004, Decker et al. in review). Jacobson et al. (2010b) suggested that the ideal Institution would transform to encompass the following four components: (1) broad-based funding, (2) trustee-based governance, (3) use of multidisciplinary science (e.g., biological, social) as the basis of recommendations from professional staff, and (4) involvement of diverse stakeholders and partners. The authors note that each of these components reflects the essence of the PTD, and that to function as a trust-based Institution, trustees and trust managers should seek diverse perspective and avoid inordinate influence from a narrow constituent base (i.e., hunters, trappers and anglers), especially when those constituents are the primary funding source of the Institution upon which the Trust depends. At the 2006 Western Association of Fish and Wildlife Agency conference, Mahoney (2006) stressed that all members of society, not just traditional constituents, must be considered in fish and wildlife conservation decision making. Williams et al. (2009) contend that the Institution's conservation emphasis on species that are hunted or trapped limits its funding options and subsequent ability to do conservation. Broadening the Institution's focus to include a diversity of interests can help increase interest and support (e.g., participation in fish and wildlife-related activities, political support for conservation programs/initiatives, funding) for conservation (Jacobson et al. 2010b).

Reaching out to a more diverse group of beneficiaries does not make decisions easier, and the challenge is in balancing competing needs and interests in making decisions about management and allocation (Organ and Batcheller 2009). With any trust, according to Mahoney (2006), trustees need to seek "advice and counsel" from its beneficiaries. Smith (2011) outlines ways in which SFWAs can help support trustees in fulfilling their PTD obligations: (1) informing the public about the PTD which may result in increased demand for inclusiveness and accountability; (2) ensuring that trustees have complete and balanced social science data to inform decisions; and (3) engaging a diversity of stakeholders to discuss and debate conservation issues and offer insight or provide recommendations based on shared

priorities and common ground. The author notes that trustees can avoid gridlock and circumvention of the decision-making process by encouraging fair and open dialogue prior to making decisions. Broad-based collaboration can result in politically supported decisions and avoidance of alternatives (e.g., law suits, ballot initiatives) that often have negative consequences for conservation. Further, increasing dialogue can help trustees and trust managers encourage understanding of different values and attitudes among stakeholders, including trustees and trust managers, and find common ground that may lead to greater fish and wildlife benefits production (Decker et al. in review).

The following section chronicles the case of a trust manager (Minnesota Department of Natural Resources [DNR]) initiating dialogue with beneficiaries to understand their fishing, hunting, and later broader wildlife, natural ecological community, water, and related interests. The forum, the Minnesota Roundtable (Roundtable), started first as a process for trustees and trust managers to learn about and address the interests of specific stakeholders regarding specific topics. Over time, it expanded to include a diversity of conservation beneficiaries and to increase dialogue on a greater breadth of fish, wildlife, natural community and water issues. The Roundtable is an excellent example of a trust manager regularly engaging the state's conservation community to improve benefits production consistent with the agency's public trust responsibilities for fish and wildlife management.

Minnesota Department of Natural Resources Roundtable (Roundtable)

Minnesota is blessed with a rich natural resource base—from the boreal conifer, aspen and birch forests of the northeast to the aspen parklands of the northwest; from the southwestern prairies to the southeast and central oak savannahs and big woods; from the more than 10,000 lakes, rivers, and trout streams to the shores of Lake Superior. Also, the state is blessed with a strong cadre of fish and wildlife and natural resource stakeholders and federal, state and local agencies that play a role in natural resources management. The challenge was how DNR, a trust manager with primary trust responsibilities for Minnesota's fish and wildlife, could more effectively engage with this broader conservation community to protect and enhance this natural resource heritage.

Legal Underpinnings of DNR's Fish and Wildlife Trust Responsibilities in Minnesota

As with other states, the Minnesota DNR has a legal mandate to uphold the public trust for fish and wildlife. State law establishes the policy that, "The ownership of wild animals of the state is in the state, in its sovereign capacity for the benefit of all the people of the state." (Minn. Statutes, Sec. 97A.025). The DNR commissioner "…shall have charge and control of all the public lands, parks, timber, waters, minerals, and wild animals of the state…" (Minn. Statutes, Sec. 84.027, Subd., 2). State law also emphasizes the importance of fish and wildlife management based on science: "It is the policy of the state that fish and wildlife are renewable natural resources to be conserved and enhanced through planned scientific management, protection, and utilization." (Minn. Statutes, Sec. 84.941). Trust responsibility related to hunting and fishing is further imbued in the State's constitution: "Hunting and fishing and the taking of game and fish are a valued part of our heritage that shall be forever preserved for the people and shall be managed by law and regulation for the public good" (Minnesota State Constitution, Article XIII, Sec. 12).

History and Evolution of the Roundtable Approach

In the late 1970s and 1980s, the DNR Division of Fish and Wildlife began looking for more effective public involvement in fish and wildlife habitat and population management programs (Nelson et al. 1993). Early approaches were highly focused on achieving resolution to specific issues. In the 1990s, roundtable processes were used to resolve contentious issues as they arose, including experimental game and fish regulations, wolf management post-delisting from the Endangered Species Act, and old-growth forest management (Blann et al. 2000). These roundtable processes brought stakeholder representatives from all sides of an issue together at regular intervals for facilitated meetings to review the science of an issue, discuss policy, and develop consensus or compromise on recommendations.

In that vein, the first Fishing Roundtable, held in 1991, was conceived to help develop a strategic plan to improve the quality of fishing in Minnesota (Nelson et al. 1993). The impetus for this roundtable was a decline in the quantity and size of fish caught by state anglers, which had been well documented a few years earlier by an analysis of long-term fishing contest records from Fuller's Tackle Shop in Park Rapids, Minnesota from 1930 to 1987 (Olson and Cunningham 1989).

That first Fishing Roundtable and the following two annual fishing roundtables were focused specifically on developing a strategic plan for turning this situation around. They helped to design and focus a strategic approach to individual waters management (including lake management plans, surveys, and special or experimental regulations), aquatic habitat, and aquatic and fishing education.

The first Hunting Roundtable was held in July of 1995 and again was topic-focused on major issues of the day affecting hunting. These included trespass problems on private lands and controversies surrounding use of all-terrain vehicles for hunting. The second Hunting Roundtable focused on effective development of legislative policy and engaged stakeholders, policy makers and agency staff. The key issues explored at that Roundtable included constitutional protection of hunting and fishing, reauthorizing the environmental trust fund constitutional amendment, gaining a hunting license fee increase, and pursuing a mourning dove hunting season.

The key successes of these early roundtables were more focused and tangible than those of more recent times discussed below, yet each approach has value. The first fishing roundtables led to a system of individual lake management using special and experimental regulations that has significantly improved the quality of fishing in the state. They also led to accelerating the development of what was to become a national award-winning aquatic education program (MinnAqua) and a focus on aquatic habitat that included looking at aquatic habitat from a watershed perspective.

The first Wildlife Roundtable (1995) led to more comprehensive policies on use of all-terrain vehicles for hunting and improved trespass laws. The next Wildlife Roundtable focused on effective legislative policy development, and ultimately each of the issues highlighted in that discussion became reality in law or constitutional language (i.e., constitutional recognition of the state's fishing and hunting heritage, mourning dove season, fishing and hunting fee increase, renewal of the environment and natural resources trust fund). In the early 2000s, the focus of the wildlife roundtables was on the future of the state's large wildlife management system that led to a stakeholder process to develop an ambitious 50-year strategic plan. Soon after, a wildlife roundtable focused on declining participation in fishing and hunting and led to the establishment of hunting recruitment and retention program within the DNR division of fish and wildlife.

Many of these early roundtables were designed around achieving specific outcomes and were remarkably successful in doing so. However, over time as the issues became more complex and the need to engage the broader conservation community more urgent, the design and approach changed.

Development of the Current Model of Annual Roundtable Engagement

Beginning in 2001, a more broad-based approach to conducting the Roundtable was initiated as it was expanded to include "ecological" stakeholders (those interested in threatened and endangered species, nongame wildlife, natural plant and animal communities and other broad ecological issues) in addition to the traditional fishing and hunting interests. Concurrent Fishing, Wildlife and Ecological roundtables were held at the same time and location in 2001, but with no formal structured interaction between the three roundtables. Starting in 2002, the Roundtable took on more or less the form that it continues to use to this day, with joint plenary sessions and with breakout sessions for Fisheries, Wildlife and Ecological Resources. There was some initial pushback to the combined Roundtable, particularly from anglers who felt their traditional forum for discussion was being compromised. This was mitigated by continuing to have concurrent breakout sessions for the fisheries, wildlife and ecological interests to discuss a narrower range of topics. Also, after a few years the DNR formed a set of "species workshops" consisting of standing groups of stakeholders with specialized fishing interests such as walleye, bass, and esocids (northern pike and muskellunge) to meet separately at other times during the year.

In 2011, a Waters component was added to the Ecological portion of the roundtable, reflecting internal DNR reorganization and the importance of water to fish, wildlife, and ecological communities. At some Roundtables, including the most recent in January 2013, joint sessions were held with ecological and wildlife and ecological and fisheries stakeholders on topics of mutual interest, in addition to the plenary sessions involving everyone.

Although the format has remained relatively unchanged since 2001, participation has increased significantly over the past ten years and the range of issues addressed has broadened considerably. What started as a small, issue-focused gathering of a couple of dozen people at the first Fishing Roundtable in 1991 has grown to a comprehensive, annual two-day gathering of more than 400 traditional and non-traditional fish and wildlife stakeholders, conservation organizations, agency staff, legislative policy leaders, university professors, college students, and the media.

A constant of all of these more recent Roundtables has been the focus on the major conservation issues of the day across a broad spectrum of issues that affect fish and wildlife, while a striking difference has been the move from a focus on developing a consensus approach on specific issues to one of individual learning, exchange of ideas, and building better networks among conservation leaders in the state. The agency does not so much lead the Roundtable as it provides the forum and facilitated process for the effective exchange and discussion of information about current issues. At the most recent Roundtable held in January 2013, approximately one-third of the presenters were non-DNR. Ample open discussion and "networking" time was incorporated.

An inherent drawback of this approach is the lack of predictable or quantifiable outcomes from this process. In this time of outcome-focused, results-based, "what are we getting for our investment?" budgeting, this process would be hard-pressed to justify in terms of measureable outcomes. Yet, it is hard to deny the progress made by the state's conservation community in addressing issues of statewide importance while bucking many of the negative national trends related to hunting, fishing and fish and wildlife conservation. Further, the Roundtable facilitates interaction and identification of common conservation interests/concerns (e.g., fish and wildlife habitat, intact watersheds, clear water) among individuals who might not otherwise interact, building coalitions that can result in great conservation benefit. For example, Martin et al. (2012) suggest that the momentum built via the Roundtable process likely facilitated the passage of a ballot initiative to increase funding for conservation in Minnesota. In 2008, the outdoor heritage, clean water, parks and trails, and arts and culture "Legacy Amendment" established a new three-eighths of 1 percent sales tax and dedicated one-eighth for a fund to be used for protection and enhancement of prairies, wetlands, forests and habitat for fish and wildlife. Another eighth was dedicated to clean water and the remainder was divided between parks and trails and arts and culture. At current tax revenues, each one-eighth amounts to approximately $90-$100 million annually for the 25-year period from 2008 to 2023. While the department was not (and could not be, by law, due to the fact that it was a ballot question) in the lead on the development and passage of this initiative, the underlying concepts had been under discussion for the previous decade, including at several roundtables. More recently, in 2012 the DNR was successful in passing the first general fishing and hunting fee increases in a dozen years and did so in an economically depressed environment with an extremely conservative legislature. Without strong support for conservation, some of which is fostered by regular interaction with stakeholders, these outcomes arguably would have been unachievable.

The Roundtable has **not** taken the place of more traditional methods of public input and public involvement. Other public involvement methods such as surveys, public meetings, open houses, web surveys, social media, and topic-focused processes with engagement of potentially affected interests have been designed for specific issues. This Roundtable complements and augments these methods and promotes dialogue among trust beneficiaries. A central tenet of this section is that effectively working with and helping to build the capacity of fish and wildlife stakeholders is a key role and responsibility of trust managers in fulfillment of their trust responsibilities for fish and wildlife stewardship. Trust managers are unable to do all the things necessary for fish and wildlife conservation, no matter how well funded or managed their agencies may be. It takes a network of knowledgeable, engaged and politically

active stakeholders and citizens to achieve the broad policies and programs necessary for successful fish and wildlife conservation.

Summary and Implications

Inherent in the PTD is the role and responsibility of trustees to understand the fish and wildlife-related outcomes desired by beneficiaries. Recognizing that capacity for engaging beneficiaries is limited, trustees tend to engage more regularly with those stakeholders whose interests are established within their cultures (e.g., hunters, trappers, and anglers) or are brought to their attention via institutionalized public input opportunities (e.g., public meetings). For both, stakes are likely well defined and narrow, and stakeholders are seeking specific benefits (e.g., increased bag limits, limiting certain hunting methods). For the most part, forums for engaging with a diversity of beneficiaries regarding broad conservation topics are rare, although the potential for conservation benefit is high. Trust managers can help trustees gain broader perspective and identify areas of common ground by convening such forums. The Minnesota Roundtable offers an example of a well-established gathering that has been broadening in terms of topics and interests represented. It has brought together those who value conservation, although they may differ regarding attitudes on specific issues, to listen, learn and interact. Although increased support for conservation in Minnesota cannot be directly linked to the Roundtable, it is fair to say that in convening leaders within the hunting, angling and environmental communities, DNR has helped establish relationships, increase understanding and support for conservation generally.
The Roundtable has always loosely been a "by invitation" event, with an effort to invite a broad cross-section of potentially affected interests, including leaders and rank-and-file members of organizations and interested citizens. In recent years, college students interested in a career in natural resources have also been targeted, along with their professors. While a list of invited attendees is developed by the DNR each year, self-nominated attendees are also able to attend.

The Institution has acknowledged that to maintain relevancy and effectiveness, it must broaden its conservation Model to include a diversity of stakeholders. Without broad support for conservation, for example, public support for alternative funding is unlikely. As agencies continue to face funding challenges and capacity issues to address the range of fish and wildlife conservation issues, it will become increasingly important to effectively engage a diversity of stakeholders to provide both a broader funding base as well as enhanced capacity to deliver conservation programs. Minnesota's Legacy Amendment provides a source of funding not only for the SFWA, but for other government agencies and nongovernmental conservation organizations to seek funding for fish and wildlife habitat conservation, thus building the conservation capacity of the state. Further, a collaborative approach to conservation is important because the user-pay, user-benefit funding construct embedded within the Model is not tenable in the long run unless it is changed such that wildlife conservation is funded in large part by all beneficiaries, i.e., the general citizenry via a non-voluntary mechanism (Decker et al. 2009). As noted by Jacobson et al. (2010a) the ability of SFWAs to meet the needs of traditional hunting and angling stakeholders almost certainly will be compromised if agency programs and activities are not expanded to meet the needs of a broader suite of interests.

A primary and enduring outcome of the collaborative approach described in this paper is that the SFWA is accepted as a credible source of science and technical information that supports partner agency and non-governmental organization efforts; is transparent in the use and accountability of funds; and it actively and genuinely engages with broad coalitions of shared interests related to fish and wildlife. This approach helps ensure the ability of the trustee to work with the conservation community to fulfill its Public Trust obligations. Also, as noted by Jacobson et al. (2010a), without first expanding organizational cultures to embrace the need for diversification, SFWAs will likely be unable to effectively garner public and political capital necessary to meet their funding needs to accomplish the range of fish and wildlife conservation that will be required in the future. Regardless of the specific mechanisms employed, managers of natural resources should continue to encourage and upgrade public involvement in decision making, particularly where relative values are concerned, without compromising resource or scientific

principles (Boggess 1981). We conclude that it is not only the trust managers' responsibility but in its best interest to seek ways to regularly convene diverse groups of stakeholders for meaningful dialogue to ensure the best conservation outcome for all beneficiaries now and in the future. This ultimately will result in the SFWA and the conservation community serving the best interests of fish and wildlife resources and of those elements of society as a whole who care about and value those resources.

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Constraints to Delivering the Public Trust: A State Agency Perspective

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Abstract

The Florida Fish and Wildlife Conservation Commission (FWC), like other state conservation agencies, is faced with an increasingly complex conservation arena. The paradigm of fish and wildlife management has shifted and we are confronted by many organizational and institutional constraints to provide desired conservation benefits to a broader set of stakeholders. When revenues decline, we struggle to continue to provide high quality services and opportunities to those who have traditionally participated in and supported conservation activities. And, at the same time, we are facing new challenges and opportunities to address the needs of emerging and underserved stakeholders.

By revisiting the public trust principles we recognize they are enduring but flexible enough to accommodate changing ecological conditions and social norms. To effectively deliver the benefits of the public trust we need to ensure that our staff, elected and appointed officials, and stakeholders understand what these foundational principles for fish and wildlife trust management are and how they provide the "why" of what we do. State agencies can use them as guiding principles as we move forward to ensure that we can find common ground with all stakeholders to wisely use and conserve our public trust assets for current and future generations.

We identify constraints that FWC and many state fish and wildlife management agencies face and offer solutions to reduce those constraints. By using the public trust principles we can become more resilient and responsive to a changing society. We can build upon the traditional fish and wildlife management model, reduce constraints, and broaden the application of public trust principles to conserve all wildlife for all people, now and in the future.

Introduction

There has been a growing trend in state fish and wildlife management agencies to be more open, transparent, and accountable—the traits of good governance. Additionally, there is an increased emphasis on understanding state agencies roles and responsibilities in managing the public's fish and wildlife resources (Smith 2011). The public trust doctrine (PTD) holds that fish and wildlife are held in trust as public resources by the government for the benefit of people (Batcheller et al. 2010). The principles of the PTD and the practices of good governance both call for increased citizen input and engagement in decision-making. Effective public trust management requires an understanding of roles and responsibilities of the participants in the trust administration framework as well as a commitment to responsibly manage the trust assets to provide the most benefits to current and future citizens—the beneficiaries of the trust. The public trust administration of fish and wildlife falls largely to the states. In Florida, the primary trustees of the public trust—the seven Commissioners of the FWC—are identified in the Constitution (FLA Const. Art IV, Section 9). The Commissioners are appointed by the Governor and confirmed by the Florida Senate. Smith (2011) asserts that state fish and wildlife agency (SFWA) professionals are the trust managers and are tasked with monitoring the trust resources, fulfilling the goals set by the trustees, and distributing the benefits of the trust to the beneficiaries or stakeholders.

Stakeholders are "any person who is significantly affected by or significantly affects wildlife or wildlife management decisions or actions" (Decker et al. 2012:5).

Decades ago, the tasks of a SFWA were less complex and more directed. SFWA's attention was focused on a few generally homogeneous stakeholder groups. We knew what these groups wanted relative to fish and wildlife management and how to interact with them because our staff represented this same demographic. Societal shifts over the past six or seven decades have changed the demographic patterns in the U.S. (U.S. Census, 2011) and are impacting traditional fish and wildlife management practices. We have cursory knowledge of these social changes, but we are just beginning to understand their impacts on our work. Our staff increasingly represent these changes—a shift from rural to urban or suburban living, two income families, increasing opportunities for organized after school activities, improved access to information, reduction of unstructured leisure time or time outdoors, increases in minority and ethnic populations that have different cultural attitudes and behaviors towards fish and wildlife, and a desire for smaller, more efficient, more transparent and accountable government agencies. These changes represent constraints that impact SFWAs ability to fulfill the responsibility of managing our public trust assets. Additionally, we have created organizational structures, procedures and norms that may have worked well for us in the past, but may be constraining us in this new paradigm.

Principles of the Public Trust

Staff, elected and appointed officials (including trustees), and our stakeholders should understand the foundational principles for management of public fish and wildlife resources and how they provide the "why" of what we do. Briefly, the principles of the public trust are (Decker, this volume):

1. Wildlife resources are owned by no one and are managed by the government (through the decisions of the trustees and the work of the trust managers) on behalf of current and future beneficiaries.
2. Wildlife resources should be managed without privileging one set of beneficiaries over another.
3. Trustees work for all citizens (current and future) and work at "arms-length" from the beneficiaries.
4. Trustees are accountable to citizens (stakeholders), who should have a reasonable expectation of being beneficiaries of public fish and wildlife management and should be aware of their right to demand transparency and fair treatment in the administration of the trust.

These principles provide the reason SFWAs exist and they are echoed in most state fish and wildlife mission statements. At first glance it seems to be a fairly simple directive to fulfill. But SFWAs face a number of constraints to fully implement the practices of good governance and principles of the public trust.

What Does it Mean to Deliver the Public Trust?

Fully delivering the benefits of the public trust means conserving *all* fish and wildlife for *all* people, now and in the future. This broad inclusive definition emphasizes that wildlife resources are for the use and enjoyment of all citizens—not just those who choose to directly interact with or attempt to harvest wildlife. This also means that we are managing wildlife for those who value the aesthetic existence of wildlife and for those that have different cultural interests or behaviors towards wildlife than our traditional stakeholders. It's a simple concept to understand but not a simple concept to fully put into practice. A simple answer as to why SFWAs struggle with fully delivering the benefits of the public trust is we don't have the capacity—knowledge and understanding, people, skills, time, money. Upon further examination, however, the answer is more complex but we believe these challenges can be reduced or eliminated.

Some Solutions to Reduce Constraints of Providing Public Trust Benefits

Staff as Trust Managers

Many FWC staff have a casual knowledge of the public trust doctrine but most do not have a deep understanding of the principles, responsibilities and the implications of fulfilling the public trust. They may not understand that these principles provide for the existence of our wildlife management agencies or how these principles are applied in the broader context of fish and wildlife management. Staff may also not be aware of the legal intent and case law that support these principles. As noted in Smith's (2011) commentary, it is important for staff to understand the distinctions of the roles and responsibilities the various parties (trustees, trust managers, beneficiaries) in the trust arrangement. It is important for staff to understand the role of the commissioners and their decision-making authority and not misrepresent themselves to the stakeholder beneficiaries as decision makers. This misrepresentation can undermine the objectivity of the trust managers and credibility of the public trust governance framework (Decker et al. 1991).

Agency staff generally enter this profession because of their personal interests, values, and beliefs about fish and wildlife. These appear to align directly with the principles of wildlife conservation—sustainability now and into the future. Historically and continuing today, SFWAs attract and reward staff who are species or habitat experts and are often more comfortable in the woods or on the water than interacting with people about fish and wildlife. Many of our staff, particularly those in the regional offices and younger staff, have species-focused programmatic goals (protect, maintain, restore, etc.). This focus can result in staff thinking and acting as if they are working solely for the resource – to study and conserve their species of interest. Additionally, as we acculturate entry-level employees we tend to focus on their responsibilities to manage fish and wildlife for their long-term well being, wise-use and sustainability but often don't include information or have discussions about public trust roles and responsibilities in that process. Agency leaders need to take the time to discuss and communicate with staff about the *why* of fish and wildlife conservation and how the public trust doctrine provides the legal guidance and principles for how we conduct our work.

The passion of our staff is a critical driving force in our institution and we need to take great care to not diminish that passion. However, management of these public trust resources requires a deeper and broader responsibility that is beyond conserving the resource for the sake of the resource. Using public trust principles provides a grounding to staff that as wildlife professionals in a SFWA they are trust managers working for the trustees (commissioners) to conserve the trust assets (fish and wildlife and the habitats they depend on) for the trust beneficiaries (the stakeholders). This may be a paradigm shift in thinking and behaving for staff. This shift—conserving wildlife for the trust beneficiaries—requires an additional set of skills for a traditionally trained wildlife professional. This new set of skills is to understand who the beneficiaries of the trust are (stakeholders), how they value wildlife, what their behaviors towards wildlife are and how they want wildlife managed. For some staff, this shift has been gradual and relatively easy. For others, it is a profound philosophical change in how they view and value their work. Leaders in SFWAs would be well served to create opportunities to have open discussions with staff about this topic to manage and support this transition effectively.

Staff sometimes struggle with decisions made by the board of commissioners without fully recognizing that the trustees must make decisions weighing ecological and social science information as well as public input to provide the best benefits for current and future stakeholders. Increased communication about trustee decisions with staff in the context of public trust principles would help reduce this concern among staff.

Stakeholders as Trust Beneficiaries

Lack of understanding stakeholder interests is a serious constraint for SFWAs. We need to better understand who and where the stakeholders are, what their values, attitudes, beliefs and behaviors towards wildlife are, and what they desire from fish and wildlife and our management of them. Some stakeholders may not recognize or care they are stakeholders; we may create new stakeholders through

our management activities. FWC and other SFWAs have significantly increased and improved efforts to seek out, better understand and engage with stakeholders. It is unlikely, however, that this shift in activities was communicated in the context of the public trust principles. A deeper understanding of the public trust principles and of staffs' roles and responsibilities under the public trust governance approach would better explain the *why* and *need* for increased stakeholder involvement and engagement.

Our "traditional" stakeholders are consumptive users of fish and wildlife (i.e., anglers and hunters), those who directly pay for conservation through revenues from license sales, ammunition, firearms, and other sporting equipment related to those activities (Jacobson and Decker 2008). They are generally organized with identified representatives, often attend Commission meetings and public workshops, and tend to be more predictable in their needs, behaviors, opinions and interactions with the agency. We need to ensure that we are continually improving our awareness of and responsiveness to their needs and concerns. We can't assume that their needs and concerns are not changing as the ecological and social landscape is changing.

It has been suggested (Jacobson and Decker 2008) that wildlife professionals must embrace a broad perspective as they consider and apply the public trust. One of the biggest constraints to delivering public trust benefits in Florida is we don't have a good understanding of emerging or unorganized stakeholder interests. Florida has and is experiencing large scale demographic changes. These demographic changes—significant population increases, increases in ethnic populations, concentration of residents in urban areas as well as increases of residents in the suburban-rural fringe (FL EDR 2013)—are having direct impacts on how we manage fish and wildlife and how we are able to deliver the benefits of the public trust. Staff are recognizing different cultural values towards and uses of fish and wildlife by ethnic populations. Modifications of equipment and new technologies targeted at outdoor recreational activities are creating new users of public lands and waters, and the blurring of rural and suburban lifestyles is causing us to reexamine how, when and where we work. These emerging stakeholders may not recognize themselves as stakeholders. They may not have a network of individuals that share their interests or may not have the capacity or organizational structure to engage with FWC on a regular basis or understand the most effective way to engage with FWC about their needs or concerns. They may not even know FWC exists and what our responsibilities are or that FWC is interested in their values, beliefs and behaviors towards fish and wildlife. We have to make a special effort to reach out to these new interests and invite them into the fish and wildlife management community.

All of the public is a beneficiary of our fish and wildlife resources, but we are constrained by lack of staff capacity (knowledge, skill, interest, and time) to actively and continually scan for potential new or changing stakeholder interests. Building staff capacity to address the new or different interests of an increasingly diverse set of beneficiaries will create broader understanding and support for conservation. We know we should reach out to new and emerging stakeholders, but it is easy to fall back into our comfort zone of engaging with people who are familiar to us and share the prevalent values, beliefs and attitudes of staff. We must to take care that our familiarity with these stakeholder groups' interests doesn't create an undue perception of a privileged focus on them. Even our language in describing stakeholder interests can become a self-imposed constraint if we are not careful—we often refer to traditional and nontraditional or emerging stakeholders. Just this simple labeling mechanism creates an instant difference between stakeholder interests and may set an artificial boundary that we do not intend to build. How we behave and discuss stakeholder concerns or needs internally creates a cultural norm that sends a strong message to our staff. If done with an attitude or words that convey stakeholders themselves are constraints to managing fish and wildlife to our personal ecologically based ideals, we are setting ourselves up for loss of agency credibility and irrelevance. If, however, we communicate internally about stakeholders in terms of beneficiaries of our work products and services, it sends a clear message to staff as to our roles and responsibilities, and that people are a critical and integral part of fish and wildlife management.

Commissioners as Trustees

The commissioners for SFWAs are responsible for weighing a wide variety of competing demands and interests regarding fish and wildlife management and for determining the appropriate use and allocation of those resources to ensure their long-term sustainability and use for current and future generations. Many trustees come into their roles with a deep appreciation of and commitment to fish and wildlife and are keenly aware of their responsibilities, but they may not be aware of them in the context and language of the public trust. Some may not be fully aware of or understand the history and guidance that the public trust provides and the breadth and scope of their responsibilities of fulfilling the public trust. As staff to the Commissioners, SFWA professionals should make certain that commissioners are fully aware of the public trust governance framework so they can ensure that staff provide them with the best available scientific data, information, and insight from the ecological and social science disciplines to inform their decisions in directing the management and allocation of the benefits of the trust assets to the beneficiaries. Emphasizing public trust roles and responsibilities more explicitly and frequently in discussions with and presentations to the trustees and the beneficiaries as well as staff will help clarify and continue anchoring these into our cultural norms.

Self-Imposed Constraints

We constrain ourselves by our cultural norm of focusing primarily on fish and wildlife management rather focusing on delivering fish and wildlife benefits to all citizens. As we adapt to this new norm we need to adapt our skill sets, management approaches and decision-making processes to include the time to seek out, engage with and understand all of our stakeholders. Understanding beneficiary attitudes, opinions, beliefs, behaviors and concerns about fish and wildlife usually comes from two sources – stakeholder engagement and social science inquiry. We need to assess current stakeholder interests and proactively seek out and understand emerging and underserved stakeholder interests. FWC, along with many other SFWAs, has significantly increased its stakeholder engagement efforts over the past 15 years. The old model was for selected staff, usually at headquarters, to interact with representatives from organized stakeholder groups. The new model is a growing expectation of staff at all levels and areas of the state have a role in and responsibility for some level of stakeholder engagement. However, many of our staff lack the training or skills to seek out, interact with and understand stakeholders. There are multiple components to this particular constraint—awareness and acceptance of the need, learning the technical skills of stakeholder engagement, mastery of applying those skills and the interest in doing so. Many of these can be reduced with training and experience. We have learned, mostly by trial and error, along with our stakeholders, about the most appropriate methods of engagement. We, as agency leaders, can reset our expectations of staff regarding stakeholder engagement. Staff understanding and believing that stakeholder engagement is a critical component of fish and wildlife conservation is a hallmark of a progressive SFWA.

In addition to engaging stakeholders on specific issues and in our decision-making processes we need to better understand the attitudes, beliefs and behaviors of stakeholders towards wildlife. Sociologists and social psychologists can provide comprehensive and specific information and insight about stakeholders. Environmental economists can help put values on fish and wildlife and their habitats to help communicate the importance of these public trust assets to a broader audience. As the keynote speaker at the 2012 North American conference, Paul Hansen, noted, money is the new language of conservation. Communications experts can help translate technical fish and wildlife information and our decisions about them so all of the diverse segments of the public can understand them. SFWAs often lack expertise in population demographic analysis to help identify demographic trends and their implications for wildlife management. We often rely on national scale information that doesn't provide detailed insight on a state or local scale that would allow us to tailor products and services on a finer scale. We sometimes lack the understanding of how to reach out to and communicate with different ethnic groups. We should examine the diversity of our staff in terms of how can we relate to and engage with people who speak different languages, have different cultural values about and different needs and uses of fish and wildlife.

This may mean more multi-lingual staff, staff training on the impacts of changing demographics, and cultural differences towards fish and wildlife.

We cannot continue to constrain ourselves by recruiting only biological expertise; we should understand, embrace, and apply new social science skills to fish and wildlife management. We need to find the right balance of species experts and people experts to effectively manage fish and wildlife and people. Increasingly we are expecting new hires to have the knowledge, skills and abilities to understand and engage stakeholders as well as ecological expertise. We can strategically examine each position vacancy as an opportunity to acquire new skills, but we will have to acquire some of this capacity through our partnerships.

Our educational institutions are increasingly incorporating human dimensions and social sciences into their fish and wildlife management curricula and there are increasing resources to help staff gain knowledge and confidence in understanding stakeholder values, attitudes and behaviors (i.e., the journals *Human Dimensions of Wildlife* and *Society and Natural Resources*). We can strengthen our partnerships with academia and help them understand the skill sets we are seeking in future hires as well as providing social science expertise.

Public trust management includes the best available ecological *and* social science information and consideration of current *and* future use and enjoyment of public trust resources. Television, the internet, and social media have made it easier and faster for the public to access information about fish and wildlife and the processes and activities by which we manage them, but the collection and analysis of ecological and social information and insight often takes more time and resources than desired by the beneficiaries and the trustees. We often lack the resources to conduct good social science information. We are lured by the enticement that improved communication technologies will translate into faster and less expensive social science information acquisition and analysis. We often don't apply the same standards for understanding stakeholders as we do understanding fish and wildlife ecology and sometimes take shortcuts—talk to just a few stakeholders that we already know, post a short survey on our website, and host a few public workshops. As a result, we risk providing the trustees incomplete or inaccurate information for their decision-making. We need to better balance when we need comprehensive social science information in addition to stakeholder input. Staff, trustees and our stakeholders should expect that the social science information we use is as equally rigorously designed, executed and analyzed as our ecological sciences.

Technological advances have made information about natural resources more accessible and created more venues for people to discuss and debate our management of them. Another constraint of delivering the benefits of the public trust is the ability to effectively communicate with all stakeholders in venues that are appropriate for them. Not all interested stakeholders can attend every meeting, so we hold Commission meetings in different locations around the state to enable more people to attend and engage. We post Commission meeting agendas and materials on the Internet, are holding more frequent public workshops, webinars and adding videoconferencing capabilities to seek input from stakeholders and promote new initiatives. We need to create and maintain dialogues with and among stakeholder interests. We're forming more Technical Assistance Groups to further engage on specific topics stakeholders are interested in and expanding our use of social media to create a dialogue about fish and wildlife with younger generations.

Our staff no longer reflect the demographics of our state. Despite a rapidly growing Hispanic population, we sometimes struggle to communicate to Spanish-speaking callers to our offices because we lack bilingual staff in every office. Growing ethnic populations may have different cultural values and behaviors towards wildlife and are interested in species that we are not currently monitoring or managing. Increasing numbers of people are using our public lands and waters for activities other than hunting and fishing. The majority of Florida's population, many of them from other states or countries, is concentrated in urban or suburban landscapes. Additionally, our growing population is encroaching on historical wildlife habitat and residents are having interactions with wildlife they've never experienced before. People are increasingly turning to SFWAs to address increasing numbers of negative human-wildlife interactions. Understanding these new stakeholders and their interests is critical to fulfilling the public

trust. This investment in understanding the public trust beneficiaries will likely require a reallocation of resources from in the woods/on the water conservation activities. This will require the understanding and support of the trustees, trust mangers and the beneficiaries to support this shift in resource allocation.

We need to implement more broad-based conservation programs as well as fund activities to seek out, better understand and engage with all stakeholders to deliver the benefits of the public trust. Agency budgets are flat-lined or shrinking so reallocation of existing resources or new resources is required. We are constrained by use of certain types of funding—such as those from grant programs or revenue from sales of an endangered species license plate. It is critical to retain the integrity and focus of these funding programs, some of which have promoted and supported fish and wildlife conservation for over 75 years. If we dilute the focus of these targeted and highly successful programs they may become a target of broad-based funding reductions. We, as an institution, need to find new and creative funding to promote and support management of species that are not harvested and those species that stakeholders enjoy for their aesthetic or other values. New revenues should be flexible and adaptable to the changing interests of our public trust beneficiaries. We can reconsider or modify proposals for funding mechanisms that were unsuccessful in the past as well as put forth new ideas. Our stakeholders are no longer a few homogeneous groups with similar needs and concerns. We need to create targeted as well as general funding that address the common needs of all our stakeholders.

Some of our funding constraints may be of our own creation and present an opportunity for change. We should look critically at all of our funding streams, identify those that can be modified, and evaluate if the original purpose still supports our public trust responsibilities. Further, we need to be transparent about our funding sources and dispel any misperceptions about how fish and wildlife management is funded to garner additional support for those species or habitats that don't have dedicated funding streams.

In Florida, there are some important exemptions to the public trust that have evolved over the decades that should be recognized. Commercial fisheries and some marine recreational fishing programs don't appear to align with public trust principles. Catch-share allocation of some species remove the common property nature of a fishery and dedicate a secure privilege to harvest a specific area or percentage of a fishery's total allowable catch to individuals, communities or associations (NOAA Catch Share Policy 2010). Some may also view special licenses for the harvest of certain species as allocation of a public trust asset to a privileged stakeholder interest. There are valid management reasons for these exemptions—such as reducing the probability of depleting a fishery and improving the economics of a fishery—and they support the notion that public trust principles are enduring and flexible. As additional management approaches are developed, they should be tested against the public trust principles to ensure they are in the best short and long-term interest of all beneficiaries.

Summary

Delivering the benefits of the public trust—conserving all fish and wildlife for all people, now and in the future—seems simple and uncomplicated. Unfortunately, it's not. An increasingly diverse human population is resulting in new and different values toward and uses of fish and wildlife resources. Understanding stakeholder interests directly impacts and guides where, when, and how we manage these public trust resources. State fish and wildlife agencies need to be objective, transparent and accountable organizations to fully deliver the benefits of the public trust. To remain effective and relevant as a public agency we need to:

- understand and be responsive to our stakeholder beneficiaries,
- reach out and engage all stakeholders to understand their values, beliefs, behaviors towards, and uses of fish and wildlife,
- seek out stakeholders who may not recognize themselves as stakeholders and those who are unorganized or without a voice in our decision-making processes,

- improve our ability to understand and prepare for the implications of forecasted demographic changes,
- continue to strengthen current stakeholder-supported wildlife management programs,
- acquire new skill sets and resources to implement more broad-based conservation programs,
- work with stakeholders to build their capacity to be knowledgeable and supportive of broad-based conservation programs,
- create more opportunities for stakeholder involvement and engagement,
- design and conduct stakeholder engagements to ensure that we don't create a privileged status for any stakeholder group over another,
- increase our use and application of social science information,
- ensure that the best available ecological and social science information is available for the decision making by the trustees, and
- help stakeholders understand their responsibility under the public trust governance framework and help them engage with us.

We can strategize about training staff or hiring new staff with the desired skills and interest to seek out, engage and understand stakeholders to be able to fully deliver the public trust. We've talked about it for years. If we are to deliver the public trust, we have no choice but to act. We have to have the will to shift our approach to managing fish and wildlife with stakeholders in mind. It cannot be just the will of a charismatic leader, a few individuals, or a "coordinator." It has to be the collective will of the senior and mid-level leadership core of the agency. These are the agency opinion leaders who are well respected and have a wide circle of influence—the people that staff watch to learn the agency's culture and norms. It's an organization-wide philosophical shift in thinking styles, attitudes, and agency cultural norms. This requires many agency leaders to model the desired behaviors, to effectively communicate the shift in management and decision-making approaches processes in the context of the public trust, to evaluate and learn from our actions, and to make improvements. It's a cultural shift from managing fish and wildlife to managing fish and wildlife for people. This transformation adds complexity, new demands and new skill sets to our responsibilities.

As our agencies transform into more relevant and adaptable organizations, we need to continually use the public trust principles as a touchtone to ensure that we are delivering on the intent of the people's will—now and in the future. We need to recognize that the principles are enduring but flexible. We need to create opportunities to talk to staff, stakeholders, and commissioners to remind them of these principles and how they guide our work. We need to leverage staff and stakeholder passions towards fish and wildlife and apply that to the agency's broader purpose—all wildlife for all people.

But it's really not all about the technical aspects of delivering the benefits of the public trust. It's not about just increasing the amount of money or personnel to better deliver the public trust; it's more about a philosophical change in how we accomplish our work. We as trust managers each have a responsibility to address these constraints at multiple levels. We need to identify and examine our constraints to delivering the public trust. Many of the constraints are of our own making. We should critically evaluate whether they are real or perceived. We need to understand the history that created the constraints and explore whether those conditions still exist and the constraints still serve their purpose. We need to be self-reflective and honest, but courageous and bold in evaluating our constraints. We need to recognize that this adaptive process will take work, time, new skills and behaviors. We need to think creatively and strategically to reduce the institutional and organizational constraints we have created to fulfilling the public trust. We have to keep and strengthen what's working—specifically the products and services we deliver to our traditional stakeholders. But to remain a relevant state fish and wildlife management agency we have to fulfill our public trust mandate, and that means we have to understand and adapt to a changing ecological and social landscape.

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Meeting Public Trust Responsibilities for All Species: The Idaho Wildlife Summit

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Introduction

In 1899, the Idaho Legislature created the Idaho Department of Fish and Game (IDFG). Thirty-nine years later, a 1938 citizen initiative created the Fish and Game Commission (Commission) to set policy for the department. That initiative embedded public trust responsibilities in law for all wildlife for the citizens of Idaho (*Idaho Code* 36:103), proclaiming *"All wildlife…is hereby declared to be the property of the state of Idaho. It shall be preserved, protected, perpetuated, and managed…and provide for the citizens of this state…continued supplies of such wildlife for hunting, fishing and trapping."*

The Idaho of today is vastly different from that of 1938. More of Idaho's population now lives in urban areas, and the overall population has increased from 525,000 in 1940 to nearly 1.6 million in 2010. Challenges to Idaho's wildlife and its management have grown and changed as well. These challenges now include competition for available water; poorly planned development; increasing habitat loss; and decline of some of Idaho's iconic species such as sage grouse, salmon, and mule deer. Changes in our social fabric have rendered changes to how Idahoans relate to wildlife. A lower proportion of residents engage in hunting and fishing while more are participating in wildlife watching activities. Idaho's children are spending less time outdoors, thus missing opportunities to make critical connections with wildlife and wild places.

One thing that has not changed is the value Idahoans place in their wildlife. The 1938 citizen initiative was spearheaded by hunters and anglers. They were joined by garden clubs, landowners, bird watchers and many others interested in wildlife. This support from the broader citizenry allowed for the passage of the initiative by the second-largest margin in state history. Broad citizen participation again provided valuable feedback when IDFG's strategic plan, *The Compass*, was developed in 2005. *The Compass* lays out strategic goals and objectives for the full spectrum of its public trust responsibilities.

A 2012 survey of Idahoans (Responsive Management 2012) found that an overwhelming 90% of residents are personally interested in wildlife, with 61% of those being *very* interested. Furthermore, 91% of Idahoans consider wildlife to be an important reason to live in the state, with the majority considering it to be a *very* important reason for residency in Idaho. Survey results show that the top wildlife values include: that fish and wildlife exist in Idaho (90%); that fish and wildlife populations are properly managed (83%); that people have the opportunity to fish (83%); that people have the opportunity to view wildlife (77%); and that people have the opportunity to hunt (74%).

This large-scale interest in wildlife-related recreation translates into an important economic force in Idaho. Hunters, anglers and wildlife viewers generate an economic output of almost $1.4 billion annually. This generates over $105 million in state and local tax revenue (in 2006 dollars) along with nearly 18,000 jobs (Southwick Associates 2007a, 2007b; U.S. Fish and Wildlife Service 2008).

It would seem that the support for wildlife along with the economic benefit derived from wildlife-related recreation would create a sufficient financial underpinning to allow the IDFG to fully meet its mission for all wildlife for its citizens. Like many similar agencies, IDFG faces an odd juxtaposition between overt support and funding. While many Idaho residents support and value their wildlife, it has fallen largely to hunters and anglers to fund wildlife management in the state through the purchase of licenses and tags. Participation rates of hunters and anglers in Idaho have remained fairly static with slight increases in both hunting and fishing participation since 2006 (U.S. Fish and Wildlife Service 2012); however, because the funding derived from licenses and tags is largely directed toward management of species that are hunted and fished, the remaining 80% of Idaho's wildlife is managed using only 2% of the budget. Thus, although *The Compass* lays out IDFG's goals related to all wildlife, priorities and budgets are more aligned with revenue streams and expectations that are based in game management.

With nine out of ten adult Idahoans saying that they care about wildlife, but only about 40% paying for most wildlife management, IDFG faces the important challenge of fulfilling the agency's public trust for all wildlife as laid out in the mission created in 1938. This challenge is both financial and social. Idaho's license-buying hunters and anglers were 42% of the adult citizenry in 2010 and continue to provide the bulk (98%) of state funding support for wildlife management. As a result, some hunters and anglers feel they deserve a larger say in how Idaho's wildlife is managed than those citizens who do not currently pay. Furthermore, current Commission policy is to "…use revenue generated by hunters, anglers, and trappers for programs that benefit hunting, fishing, and trapping" (*The Compass*, page 17). The question becomes how do we inspire a renewed enthusiasm and commitment to support the Public Trust responsibilities, embodied in the 1938 mission, for all of Idaho's wildlife by diverse wildlife interests? Additionally, how do we help these diverse wildlife interests explore their common ground to work toward the greater good of an abundant, vibrant wildlife resource for future generations?

The beginnings of answers to these questions were generated at the Idaho Wildlife Summit (Summit), held in Boise in August 2012. The Summit was not an endpoint. It was, instead, the beginning of a conversation amongst Idahoans who care about their wildlife. It was a reminder that the wildlife of the state is a public trust, and that our wildlife is the common ground that all wildlife enthusiasts share. Of equal import is our shared responsibility in protecting and managing Idaho's wildlife.

The Idaho Wildlife Summit

Purpose and Desired Outcomes

The purpose of the Summit was to convene and facilitate a conversation among Idaho hunters, anglers, trappers, and other wildlife conservationists about the current status and direction of wildlife management in Idaho and the need to keep it relevant to the changing values, needs, and interests of Idahoans. Our desire was to hear and understand what Idahoans expect from their state wildlife management agency so that Idaho Fish and Game can serve them better.

There were four desired outcomes of the Summit:

1. Create a renewed understanding, commitment, and enthusiasm for wildlife conservation in Idaho.
2. More Idahoans are motivated to support wildlife conservation efforts and to engage in wildlife management.
3. Idaho Fish and Game has a clear sense of what hunters, anglers, trappers, and other wildlife conservationists want from their wildlife management agency.
4. Idahoans better understand what Idaho Fish and Game does and how those efforts benefit wildlife.

Great care was taken to clearly articulate the public mission, in a manner that would embrace hunters, anglers, and trappers; yet, the outreach aspect of the Summit demonstrated a broader reach to all Idahoans relative to their public trust. The tagline of the Summit was "Idaho's Wildlife Belongs to *You*!" Although clearly grounded in *Idaho Code* and the public trust doctrine (PTD), this was a powerful and overt demonstration. It is worth noting that some sportsmen and sportsmen's groups felt that IDFG had notified and "invited" environmental groups prior to notifying sportsmen and were very upset. This fueled a campaign against the Summit that got traction among a few sportsmen's groups (e.g., Lobowatch, Save Western Wildlife) and blogs (e.g., Skinnymoose and Black Bear Blog) that had to be addressed.

A "sounding board" was put together to receive advice and feedback on designing the Summit from the spectrum of wildlife enthusiasts we were trying to engage. Representatives from 16 organizations (Table 1) participated. Helpful feedback was received from eight of the members and the sounding board was very useful on those aspects. However, it was initiated too late in the planning to fully realize its potential because of where we were in the process. We thus ended up using it as much an outreach tool as an advisory board.

Table 1. Sixteen organizations that were represented on the Sounding Board to advise and give feedback as IDFG designed the Idaho Wildlife Summit.

Idaho Wildlife Federation	Rocky Mountain Elk Foundation	Sportsmen for Fish and Wildlife – Idaho
Idaho State Bowhunters	The Nature Conservancy	Idaho Conservation League
Idaho Rivers United	Federation of Fly Fishers	Idaho Trappers Association
Golden Eagle Audubon	Idaho for Wildlife	Idaho Farm Bureau
Idaho Falconers Association	Walleye Unlimited	
Idaho Rangeland Resource Commission	Idaho Outfitters and Guides Association	

Structure and Design

Staff had about 14 months to plan the Summit. A project leader, a project manager, and six committees (Outreach, Design, Technology and Logistics, Stakeholders, Research, Executive) did the majority of the work. We contracted a public participation specialist to help design the participatory elements as well as facilitate them during the actual event, and we contracted an emcee/moderator.

The Summit was designed as a statewide event based out of Boise (both the population center of the state and where IDFG Headquarters is located) with six concurrent, satellite events in each of the administrative regions. Additionally, we created an online experience knowing that many people either could not attend the event in person or that many—especially the younger generations—would prefer online participation. The Summit began on a Friday afternoon, ran all day Saturday, and continued Sunday morning until noon. Seven main elements of the design were used to achieve the four desired outcomes (Table 2).

Idaho Citizen Survey

A telephone survey was conducted by Responsive Management (Harrisonburg, VA) on behalf of the IDFG. The survey targeted completed interviews with 800 randomly selected Idaho residents with an oversample of 200 Idahoans between 18 and 34 years of age, and an additional 400 license holders. Although the survey was conducted in conjunction with the Summit, it built on our history of using

surveys of not just license buyers but also a representative sample of the Idaho public to assess opinions related to wildlife management, recreation, and decision-making.

Trading Posts

Trading Posts were intended to inform the participants about the breadth of activities IDFG does in order to manage their wildlife. The format was informal, with posters and hands-on materials provided by IDFG staff to foster one-on-one conversations with participants and put a real face on IDFG. Posters were organized by the goals and objectives laid out in *The Compass*. Comment forms at each of the Trading Posts solicited feedback about strategic issues.

Keynote Speakers

Five keynote speakers were chosen to present a diversity of perspectives and stimulate thinking about the history of the conservation movement in the United States, the current status of wildlife management in Idaho, the changing values of the West, and the importance of working together for conservation.

Idaho Café

We adapted The World Café technique (World Café Community Foundation, www.theworldcafe.com) to get participants in small conversations among themselves. We developed five compelling questions for these small groups to discuss:

1. What did you want to talk about when you decided to attend this Summit?
2. What wildlife legacy do you want to leave for future generations?
3. In order to leave the wildlife legacy that you think is appropriate for the future, who needs to be included in the conversation?
4. How can we engage that diversity of perspectives in conversations that matter?
5. What can all of us do, individually and collectively, to benefit wildlife conservation in Idaho?

Participants recorded agreed-upon perspectives on butcher paper. We also handed out a "personal reflections" form so that individual perspectives were not eliminated from the record of conversations.

Fishing Polls

We hired Option Technologies Interactive (Orlando, FL) to run an audience response system. We asked a total of 70 questions to collect data on all participants, both in person and online, to cross-reference with the citizen survey as well as to generate enthusiasm among participants.

Panel Discussion

Questions from participants were collected throughout the event from all venues, and the emcee moderated a panel discussion with four of the five keynote speakers.

Closing

The closing was intended to articulate the commitment of IDFG to review and analyze information collected, report back to the participants, and continue the dialogue that was started at the Summit.

IDFG officially requested technical advice and assistance from The Nature Conservancy (TNC) in connection with the effort to address new and emerging wildlife conservation issues while retaining core hunting and fishing programs. IDFG and TNC collectively agreed to use this opportunity to gain greater understanding of the younger generations including what about nature they find compelling and what might motivate them to participate and/or financially support wildlife conservation. TNC received a grant to conduct two focus groups of 18- to 40-year-old Idahoans.

Table 2. Matrix of techniques used to achieve the four desired outcomes for the Idaho Wildlife Summit.

Desired Outcome	Survey	Trading Posts	Keynote Speakers	Idaho Café	Clicker Poll	Panel Discussion	Closing
Create a renewed sense of understanding, commitment, and enthusiasm for wildlife conservation in Idaho		**X**	**X**	**X**	**X**	**X**	**X**
More Idahoans are motivated to support wildlife conservation efforts and to engage in wildlife management		**X**	**X**	**X**	**X**	**X**	**X**
Idaho Fish & Game has a clear sense of what hunters, anglers, trappers, and other wildlife conservationists want from their wildlife management agency	**X**			**X**	**X**	**X**	
Idahoans better understand what Idaho Fish & Game does and how those efforts benefit wildlife		**X**					**X**

Idaho's Wildlife Belongs to You!

About 600 individuals participated in person at one of the seven locations. In addition, approximately 3,000 people from 33 other states and six foreign countries watched the live-stream online. We broke new ground for not only IDFG but also for public participation in Idaho by enabling online participation throughout the three-day event, during which they could watch the live-stream from Boise, participate in the Fishing Polls, submit questions for the panel discussion, and participate in online chats among themselves.

Results from the Fishing Polls compared to the Idaho Citizen Survey (Responsive Management 2012) indicated that the Summit drew in very avid wildlife enthusiasts (Table 3). Because we also were interested in people's values towards wildlife and not just their participation in wildlife-based recreation, we asked Summit participants to self-identify their wildlife value orientation (Teel et al. 2005) after Dr. Tara Teel's presentation. Results indicated that the Summit drew in more Pluralists and fewer Utilitarians, Mutualists, and Distanced than in Idaho's general population (Table 4).

Table 3. Characteristics of Idaho Wildlife Summit participants compared to the general Idaho population (Responsive Management 2012).

Characteristic	**% Idaho Citizens** (Responsive Management 2012)	**% Summit Participants** August 2012
% who have hunted in the last two years	35	61
% who have fished in the last two years	53	75
% who have trapped in the last two years	NA	7
% who have viewed in the last two years	78	90
% who purchased a hunting, fishing, or trapping license in Idaho in the last two years	NA	82
% who, in the past two years, have been a member of or donated to any conservation or sportsmen's organizations	28	88
% who contributed, in 2011, to the Nongame Wildlife Check-off on state income tax form	10	40
% who contributed by purchasing a bluebird, elk, of trout vehicle license plate in 2011	11	46
% who contributed by a direct donation to the Nongame Trust Fund in 2011	4	3

Table 4. Percent of people among the four wildlife value orientations (Teel et al. 2005) in the Idaho general public and those who attended the Idaho Wildlife Summit (August 2012).

Wildlife Value Orientation	**Ideal World View**	**% Idaho Citizens** Teel et al. 2005	**% Summit Participants, self** August 2012
Utilitarian	Wildlife should be managed for human use	49	35
Mutualist	Humans and wildlife are meant to live in harmony	18	13
Pluralist	Have both Utilitarian and Mutualist and which one becomes salient depends on the situation and context	26	48
Distanced	Generally less interested in wildlife; more concerned about safety around wildlife	7	0
Not Sure		Not applicable	4

The Summit was a huge endeavor. About fifteen staff dedicated most of their time over a 12 month period to planning the event, with an additional twenty-five individuals assisting when needed. During the event, we estimate about 300 staff were involved over the weekend. An accounting system showed 13,865 hours were coded to the Summit, worth about $437,000 in personnel. Total direct expenditures for the Summit were about $239,000. Almost 50 organizations and individuals gave about $119,000 in sponsorships and donations to help cover the costs of the Summit. The Idaho Fish and Wildlife Foundation was the title sponsor by giving a very generous donation. Also notable was a large donation from the U.S. Fish and Wildlife Service. In-kind donations were received from P2 Solutions (who was our contracted public participation specialist) and The Nature Conservancy – Idaho for the focus group research.

Summit Report, Take-Homes, and Next Steps

The *Wildlife Summit Report* was mailed to all participants and pre-registrants in December 2012 (Idaho Department of Fish and Game 2012). Reporting on an experiential, conversational event was challenging. With every single voice at the Summit as valuable as the next, we visually displayed "what the conversation sounded like" by using Wordle™ and other graphical representations (Figure 1). Some recurring themes did stand out and were written in the cover letter accompanying the *Wildlife Summit Report*:

- You and your fellow participants all care deeply about wildlife.
- Hunting, fishing, and wildlife-based recreation is overwhelmingly important to you.
- You are eager to help IDFG improve wildlife conservation through direct participation and volunteering.
- Conservation education is important to you as is connecting youth to the outdoors and wildlife-related activities.
- You recognize the costs of conserving and managing wildlife, and most of you are supportive of exploring more diverse funding sources.
- You believe that wildlife cannot be taken for granted and want conservation issues to be solved by working together with a diversity of perspectives.

The Summit showed Idahoans feel that the strategic goals in *The Compass* remain relevant and on track. A series of questions were asked about strategic issues in both the Citizen Survey (Responsive Management 2012) and the Summit Fishing Polls as a measure of whether or the direction and goals laid out in *The Compass* remain relevant. Both Idahoans and Summit participants strongly indicated that 16 of the 17 strategic issues were quite important—about 78% to 99% said very or moderately important. The one issue that stood out was providing diverse trapping experiences for which 42% of Summit participants and 59% of Idahoans said was either very or somewhat important.

Given the breadth of IDFG's mission and the support the Summit participants indicated for more robust wildlife conservation activities, the Commission directed IDFG to seek broad-based funding to better address the full breadth of responsibilities under Idaho's Wildlife Policy (Idaho Code 36:103). To address these responsibilities, three efforts are being pursued: 1) establish new state revenue (approximately $1 million annually) to compensate for recent and continued funding declines in the Wildlife Diversity Program; 2) review hunting and fishing license sales to determine if a fee increase is prudent or if other measures can be taken to sell more licenses and tags; and 3) "go big" by pursuing options and opportunities for dedicated permanent, stable funding for all conservation in Idaho. Regional working groups of citizens are currently established to tap citizens' ideas on possible mechanisms for stopgap funding for the Diversity Program (#1 above). A License revenue committee is working on reviewing license sales (#2 above), building upon work by the existing License Restructure Committee and, at the appropriate time, will coordinate a public involvement process.

As previously mentioned, current Commission policy is to "Continue to use revenue generated by hunters, anglers, and trappers for programs that benefit hunting, fishing, and trapping." (Page 17 *The Compass).* We were interested in hunters', anglers', and trappers' opinions on using a portion of license revenues towards programs addressing species that are not hunted, fished or trapped. That notion is supported by the majority of the Idaho hunters (66%), anglers (75%), adult Idaho public (72%), and Summit participants (68%). Hunters tend to oppose this idea more than the other subgroups, with 8% moderately opposing and 15% strongly opposing.

Challenges: Threading the Needle for Public Trust

By calling for and carrying out the Summit, the Commission and IDFG have made a commitment to enhancing fish and wildlife management in Idaho by more fully preserving, protecting, perpetuating and managing all wildlife in trust for the citizens of Idaho. However, as trust managers, we face political, cultural, organizational and fiscal challenges that will require us to thread some narrow needles of opportunity to realize what the Summit began. Idaho, like many states, requires that the legislature assess fees for the execution of the state's wildlife policy. That policy, and the entire public trust, while focused for the most part on IDFG, is realistically a shared responsibility. For example, IDFG is given authority over all fish and wildlife population management, but that does not extend to authority related to the management of their habitats. To fulfill the public trust responsibilities and perpetuate fish and wildlife

habitats, other agencies whose responsibilities and funding overlap the fish and wildlife public trust, must collaborate. In Idaho, this would include such agencies as The Office of Species Conservation (coordination), Agriculture (noxious weeds, and disease), Water Resources (stream protection), Lands (forest and range management), and Highways (connectivity) and the federal land management agencies.

On November 6th, 2012, Idahoans voted on a legislative proposition to amend their constitution by adding language that says, "the rights to hunt, fish, and trap…shall forever be preserved." This amendment, endorsed by the Commission, was one of four such "right to hunt" amendments passed by several states in 2012 (Kentucky, Nebraska, and Wyoming). In Idaho, the vote was 73% in favor and 27% opposed, which was similar to the support shown for the 1938 Initiative that created IDFG and the Commission. Such an affirmative vote at the state constitutional level assures hunters, anglers, and trappers that their legacy cannot be lost short of a constitutional revision. The amendment protects hunting, fishing, and trapping as part of Idaho's heritage and "…as the preferred means of managing wildlife…" The amendment can also be viewed as affirming IDFG's traditional role in providing these hunting, fishing, and trapping rights. The question is, would Summit-related activities be viewed as in conflict with the recently affirmed constitutional right to hunt and fish and trap, especially by those paying users who are concerned that IDFG is proposing to become broader? Or would such activities be viewed as necessary to meet the full intent of the public trust responsibilities and constitutional amendment while maintaining IDFG's traditional activities pertaining to hunting, fishing and trapping?

A recent political action in Idaho may help illustrate this complexity. The Governor's recent nominee for Fish and Game Commissioner was not confirmed by a narrow vote of the full Senate. The reasons are politically complex, but they do touch upon perceptions of the Commission in terms of its mission and public trust. First, concern was expressed that she was not qualified because she was not an avid enough hunter or angler, and because she had not regularly bought Idaho licenses. Second, she was opposed by a sportsmen's group that felt its own nominee should have been the Commissioner instead of the person chosen by the Governor, in spite of support by over two dozen other sportsmen's groups. Third, questions were raised because the nominee was a woman in a traditionally male-dominated arena (she would have been only the Commission's second female member had she been confirmed). The resulting public disagreement and political debate made it clear that what the agency does and why it does it is still a matter of discussion and disagreement despite our 75-year-old mission and code.

The concerns about the agency broadening its funding and its relevance to match its public trust responsibilities come from a minority. At this time we are unsure whether or not their underlying values align with small government in general, whether it is a fundamental disagreement of what Idaho Code 36:103 and/or the PTD means, an ongoing mistrust of IDFG, or a combination of these reasons. Although the results of the Summit and the Citizen Survey (Responsive Management 2012) suggest that most hunters and anglers are supportive of the agency broadening its activities for all wildlife, we need to better understand the reasons for this opposition as well as better communicate with the public about the PTD and the breadth of our mission.

Providing a coherent strategic vision for new fiscal and conservation capacities will take a commitment of IDFG and all our professional staff. It will also require an objective process by which the agency can evaluate and implement these new capacities. Our strategic plan, *The Compass,* offers a structure through which we can best undertake a process to evaluate the organization, justify funding, identify conservation outcomes, and improve our business model.

Wildlife Diversity Program

The Diversity Program is a microcosm of the larger issues affecting IDFG. This program receives about $1.8 million annually in funding from state wildlife grants (30%), partner grants (22%), automobile license plate monies (45%), and other donations (3%) including a state income tax check off. Within the organization, a Diversity Program biologist is in each of seven administrative regions. The former Natural Heritage program and nongame programs combine to form our Diversity Program staff within the Wildlife Bureau of IDFG.

Our near-term post-Summit strategy is to find additional dedicated funding to replace the shortfall and continued loss of USFWS state wildlife grant funding that provides 30% of the Diversity Program budget and helps develop and implement the state wildlife action plan (SWAP). The initial proposal is to find a mechanism(s) that will generate approximately $1 million with new monies from Idahoans. Such a change in funding would signal to our legislative trustees and existing constituents that the agency would fulfill its Idaho public trust responsibilities by relying mostly on state revenue versus declining federal funds.

This strategy would ask for more state revenue from our citizens with little or no change in IDFG services, outcomes, or activities. We do not know if agreement to use new Idaho funding sources to support the declining federal funds for the Diversity Program is possible with little in terms of new conservation outcomes being provided. However, discussion at the Summit gives us a strong foundation for moving ahead the idea of the broad public trust.

Current Commission and Executive branch policy is to ask for no annually appropriated general funds for funding any IDFG activities. The Idaho Legislature established the Non-Game Trust Fund in 1993 that is supported by fees from wildlife specialty plates and an income tax check-off donation that are used for Idaho's Wildlife Diversity Program. These revenues are inadequate for Idaho to realize an ability to stabilize existing funding and provide for the long term needs for conservation, as was clearly heard at the Summit. It will require legislative action, Commission policy change, citizen initiative or all of these to address Idaho conservation needs. This is the reality of the political and social landscape that Idaho efforts must navigate through.

The next step is to take up a larger 3- to 5-year campaign and funding effort that would not come to term soon enough to address cuts in federal budgets that are impacting the IDFG. Given our near term concerns, we believe it is important to move ahead on both the short and long term strategies.

Idaho's Diversity Program has, to date, largely been focused on the survey and inventory of Idaho's nongame species, development of species plans and the SWAP. This program is the means by which Idaho and its citizens "preserve, protect, perpetuate and manage" our state's species, as well as help forestall management under the federal Endangered Species Act (ESA). Preserving, protecting, perpetuating and managing all Idaho's wildlife is the goal of the states Diversity Program, rather than just safeguarding against listing under the ESA. This important difference will need to be addressed as we communicate and propose funding options and conservation outcomes in Idaho.

Conclusion

Our vision for the near-term and for generations into the future will be judged and measured through the implementation of public, Commission and legislative actions. To fulfill the public trust responsibilities given us by our legislative trustees, we must seek funding and collaboration upon which we can act to ensure we address both the immediate needs and long term future of Idaho's fish and wildlife. Whether it is through education, wildlife habitats, public access, survey and inventory, fish and wildlife information systems, administration, or enforcement; we must strive to put forth a need that is, first and foremost, measured in terms of Idaho wildlife public trust and its conservation. While the immediate answer lies in funding, the long-term outcome is fundamentally about the difference we hope to make in the conservation and management of Idaho's public trust resources for future generations.

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Figure 1. A Wordle™ representation of conversations during the Idaho Café when presented the question, "What can all of us do, individually and collectively, to benefit wildlife conservation in Idaho?" Wordle™ is based on a word count, so words of larger size were those mentioned more frequently than words of smaller size.

What Does it Mean to Manage Wildlife as if Public Trust Really Matters?

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Abstract

The idea that wildlife belongs to everyone as beneficiaries of a public trust resource to be administered by government, articulated in law as the public trust doctrine, is the heart of the wildlife management institution in the United States. Our state wildlife agencies carry primary responsibility for managing the public wildlife trust. Legal doctrine aside, development of the wildlife management institution (especially with respect to funding and policy processes) over the last 100 years has created some challenges for agencies seeking to fulfill public trust responsibilities, especially regarding the need for inclusivity and consideration of all public interests in wildlife. Faced with these challenges, agencies have developed various strategies to fulfill their trust management responsibilities. Examples of these are summarized because they are instructive in identifying some constraints and opportunities, and they reveal principles (legal obligations, philosophical positions and practice norms) that public wildlife trust agencies have adopted. Several implications are indicated with respect to managing wildlife as a public trust resource.

Introduction

Does public trust doctrine matter for wildlife management in the United States? Legal scholars such as Sax (1970) were advocating for the value of the public trust doctrine to address environmental issues around the time of the first Earth Day. Others, largely proponents of expanding public trust doctrine to include more components of nature, have added to the legal discourse (Meyers 1989, Nie 2004, Wood 2009). As Samek et al. (2013) note, the trend in legal thinking has been an "evolution toward expansiveness" in public trust application. But how has the public trust doctrine fared in wildlife management? Has it mattered? Will it matter more in the future?

Samek et al. (2013) make clear that the idea of public trust resources is a longstanding philosophical and legal concept, deeply rooted in Western culture as well as jurisprudence for over a millennium. Of particular interest to us, the status of wildlife as public trust resources has been institutionalized as a legal doctrine in our North American paradigm for wildlife conservation since its inception more than a century ago, although the idea itself is far older. It is the basis for the authority and responsibility that state and federal government wildlife agencies in the U.S. exercise on behalf of all citizens to ensure that wildlife resources and the benefits society receives from them can be enjoyed by current and future generations. This observation has been articulated many times during the last decade, embedded in what is referred to as the North American Model of Wildlife Conservation (Geist and Organ 2004). The public trust doctrine is typically described as the cornerstone of this model—the foundation upon which the wildlife conservation institution in North America (at least the U.S.) has been built (Organ et al. 2012).

The long history of the public trust doctrine notwithstanding, attention to the doctrine *per se* in professional wildlife circles was not really front and center until recently (e.g., Batcheller et al. 2010, Smith 2011). For example, Horner (2000) published a paper in a law journal titled "Embryo, not fossil: Breathing life into the public trust in wildlife," indicating that the application of public trust principles in the wildlife context was in need of resuscitation. More recently, Mahoney (2006) questioned whether the North American wildlife management institution truly reflects the necessary structure of a "trust" and Organ and Batcheller (2009) intimated that the public trust doctrine may be floundering in a paper titled "Reviving the public trust doctrine as a foundation for wildlife management in North America." The message continues to this day with Samek et al. (2013) observing that the public trust doctrine has not been given adequate attention by either public wildlife trust administrators or most beneficiaries. Forstchen and Wiley (2013) tell us many agency staff "…have a casual knowledge of the public trust doctrine but most do not have a deep understanding of the principles, responsibilities and the implications of fulfilling the public trust." This echoes the concerns of Smith (2011) that officials responsible for various aspects of public trust administration are unsure of their specific obligations and limitations.

Public Trust Applied in Wildlife Management Today

When selecting state agency examples and agency directors to comment for this special session devoted to exploring the question "What Does it Mean to Manage Wildlife as if Public Trust Matters?", we wanted to demonstrate contemporary challenges and efforts in application of public trust thinking in wildlife management. Forstchen and Wiley (2013) make an assertion that serves nicely as an overall purpose statement for the special session:

> By revisiting the public trust principles we can recognize they are enduring but flexible to accommodate changing ecological conditions and social norms. We must use them as guiding principles as we move forward to ensure that we can find common ground with all our stakeholders and conserve our trust assets for current and future generations.

But what are the "guiding principles" for public trust administration that Forstchen and Wiley refer to? Essentially, our speakers present two kinds of principles for managing wildlife as public trust resources. The first stems from the public trust *doctrine*, the legal tenets and obligations that Samek et al. (2013) describe and that we summarize below. The second set of principles is gleaned from applications of public trust concepts in the cases our speakers described—they are philosophical guides and *practice norms*. In this paper, we hope to capture a starter list of such principles based on the papers prepared by speakers and their co-authors in this session. It is a starter list because we do not presume that what we have identified from this set of papers is exhaustive, but it may be a useful beginning of such a list. We share it with you to kindle thinking and discussion.

Public Trust Practice Principles for Wildlife Management: Why are They Important?

The public trust doctrine is a body of case law or judge-made law that lays out high-level policy guidance for public trust resource management (including wildlife) in the U.S. (Samek et al. 2013). Further public trust guidance also is manifest in statutory code law and state constitutional law, depending on the state. Public trust has legal underpinnings from several areas of law, as indicated by Samek et al. (2013) who summarize four fundamental concepts of public trust identified by Sax (1999): public trust is a public right, is state law, is property law, and is common law.

The legal status of public trust in wildlife is essential, but perhaps equally important functionally are the implications of public trust concepts on conservation philosophy, management principles, and practice norms that public wildlife agency staff adopt and operationalize in their work on behalf of all citizens. It is therefore somewhat surprising that the philosophical and practical principles arising from public trust concepts have only recently been articulated as such (Geist 1995, Geist and Organ 2004, Organ and Batcheller 2009, Batcheller et al. 2010), and a call has been made for professional attention to public trust to be "revived" (Organ and Batcheller 2009, Smith 2011).

Clarifying requirements of public trust administration as explicit, operative professional principles is important if the concept of wildlife as a public trust resource is relied upon to continue to serve as the cornerstone of the North American Model of Wildlife Conservation now and into the future (Organ and Batcheller 2009). Thus, given the public trust doctrine is the core reason for the existence of wildlife conservation and management agencies in the U.S., if first principles for wildlife conservation and management arising from the public trust doctrine can be articulated, then wildlife conservation and management practices occurring or being considered under the rubric of public trust can be evaluated with respect to consistency with those core principles. Articulation of public trust management principles is necessary not only for management guidance, but also to enable accountability to the public (beneficiaries of wildlife conservation and management). Spelling out the principles in black-and-white will help identify when and how intentions and proposed actions vis-à-vis a wildlife conservation and management issue are consistent or inconsistent with public trust principles.

This is not to imply that public trust principles impose context-blind rigidity that constrains management flexibility as norms and trust resources change over time. Smith (1980) argued that for the public trust doctrine to be effective it has to be applicable to contemporary concerns. Thus, for principles applied to public wildlife trust administration to endure, they should allow for reinterpretation appropriate to the social and ecological conditions of the time (Forstchen and Wiley 2013). The merits of such flexibility accepted, with principles clarified and openly available for evaluation of wildlife management proposals, citizens can more confidently request that deviations be justified or terminated, thereby contributing to accountability essential in public trust administration and for good governance in general.

Principles Arising from the Public Trust Doctrine

The key administration principles arising from the public trust doctrine identified in the papers presented in this session are few and their lineage to the doctrine easily traced. Given that wildlife in the U.S. belongs to all citizens, inclusive of current and future generations, and is managed by state (primarily) and federal governments as public trust resources for their benefit, then:

1. Wildlife resources should be *managed without privileging* one set of beneficiaries at the expense of another (trustees do not "work for" any particular set of beneficiaries, they work for all citizens, current and future generations);
2. Some *distance between trustees and beneficiaries* should be maintained (i.e., maintain an arm's length relationship between trustees and beneficiaries);
3. Trustees should be *accountable* to citizens, all of whom should have reasonable expectations of being beneficiaries of public wildlife management, and

4. Beneficiaries in turn should *be aware of and exercise their right* to demand transparency and fair treatment in trust administration.

The case examples described in papers for this special session indicate that these trust administration principles are not easily adhered to in the practice of wildlife management.

Public Trust in Action—Practice Principles for Wildlife Conservation and Management Reflected in Case Examples

Our speakers, all experienced fish and wildlife agency administrators hailing from across the continent, recognize the basic public trust principles identified above. Consistent with such principles, they acknowledge that the public or citizens, including future generations, are the beneficiaries of the public wildlife trust, and that the government, as trustee and trust manager, is expected to manage wildlife in the best interest of the entire complement of trust beneficiaries. Speakers also illustrate trustee responsibility for weighing demands and needs regarding management and use of wildlife resources to help ensure their long-term sustainability; therefore responsiveness of trustees to current interests should not foreclose options for future generations to benefit from wildlife. Thus, they reiterate the importance of looking forward, taking a long-term perspective when evaluating the effects of current-day wildlife conservation actions on options that should be kept available for future generations.

Hopefully, by revisiting the public trust principles we can become confident that they can "accommodate changing ecological conditions and social norms" and be used "as guiding principles as we move forward to ensure that we can find common ground with all our stakeholders and conserve our trust assets for current and future generations" (Forstchen and Wiley 2013). At least three practice principles can be gleaned from the examples described by our speakers. These are summarized here:

1. Ensure Inclusivity of Wildlife Management to Interests of Broad Stakeholder Population

Our speakers all articulated the need to broaden the population of recognized beneficiaries for fish and wildlife programs, using terms like "reach out to" or "listen to" a larger and more diverse set of stakeholders—"meet the expectations of all citizens." This sentiment echoes that voiced last year at the North American Wildlife and Natural Resources Conference by retired Director Gary Myers of Tennessee, during a workshop on state fish and wildlife agency transformation (Meyers 2012). Director Myers challenged the fish and wildlife conservation profession to think more inclusively, and charged agencies and NGOs to focus on "conservation of *all* species for *all* citizens." This principle of inclusivity is one way of operationalizing the public trust concept that wildlife belongs to all citizens in equal measure.

While our speakers have a broad concept of what the benefits (and therefore beneficiaries) of the wildlife trust might be, which goes beyond traditional consumptive recreation opportunities, they do not reference reducing negative impacts from human-wildlife interactions as an important aspect of wildlife trust management. Their emphasis is providing opportunities for enjoyable wildlife viewing, hunting, and biodiversity. Keeping economic, health and safety impacts associated with wildlife within the tolerance bounds of most stakeholders (not exceeding their collective threshold of wildlife acceptance capacity) also is necessary to sustain an overall positive attitude about wildlife among many stakeholders. Thus, part and parcel to the principle "ensure inclusivity of management attention to interests of broad stakeholder population" is an imperative that management of human-wildlife interactions sustains a net positive outcome for society with a margin wide enough to ensure wildlife remains and is widely recognized as a valued resource for Americans.

2. Maintain Fidelity to Traditional Stakeholders

Our speakers in this special session reiterate a principle expressed repeatedly in the transformation workshops held at the three previous North American conferences. Basically, speakers then and now expressed the principle of maintaining fidelity to those who historically have been staunch

advocates for wildlife conservation and management with respect to their primary interest in the resource; these are people falling into what is referred to as "traditional" stakeholders (e.g., hunters and anglers). While not going so far as calling for privileging interests of these stakeholders at the expense of others, the directors nevertheless argue for avoiding alienating "traditional" constituencies and retaining "core" hunting and fishing programs. The line between serving the interests of these people so as to retain them as supportive beneficiaries of the public wildlife trust versus privileging them such they receive a disproportionate share of the benefits (especially if other citizens experience a disproportionate share of the negative impacts) of wildlife is a very thin one. The directors recognize this. Satisfactorily serving traditional stakeholders' interests while genuinely embracing and addressing interests of a much larger population of "non-traditional" stakeholders is a logistically and politically challenging endeavor. The extraordinary efforts described in Minnesota and Idaho are examples of attempts to give voice to the full breadth of interests in wildlife in those states.

3. Build Capacity for Public Trust to Work in Wildlife Conservation and Management

Effectively working with and helping build the capacity of fish and wildlife stakeholders is a key role and responsibility of trust managers. It takes a network of knowledgeable, engaged, and politically active stakeholders and supportive citizens to achieve the broad policies and field programs necessary for successful fish and wildlife conservation. Idaho's wildlife summit and associated efforts are examples of capacity building across many wildlife interests held by the state's residents. This principle is apparent, too, in Minnesota's Roundtables, which are concerned with building conservation capacity of the state, not just the agency. In other words, public trust principles are not exclusively for state fish and wildlife agencies to attend to; for the public wildlife trust to be viable, trustees, trust managers and trust beneficiaries have to be engaged.

Public Trust Management Conundrums and Challenges

In this session's presentations, some conundrums and challenges associated with applying public trust ideas to wildlife management emerge. Just as the list of principles presented above is not exhaustive, neither is the set of conundrums and challenges that we briefly outline below. Certainly others exist. All need further elaboration and discussion as the profession moves forward with a 21st century approach to public trust-based management of wildlife resources.

Building and Maintaining the Public's Trust

A pervasive principle we heard—and if we had held this session 20 or even 10 years ago it is unlikely it would have been emphasized to the same degree—was a conviction that stakeholder input and involvement in decision making is needed. Experiences described by our speakers illustrate the importance not only of *seeking input from beneficiaries* but also of *fostering dialogue with and among a diversity of interested stakeholders and providing for their interests*. The cases emphasize that it is essential for trustees to understand stakeholder interests to inform decision-making and effectively build natural resource conservation support and capacity. As one speaker explains, it is critical to engage stakeholders to help agencies identify conservation challenges and become involved in developing and operationalizing management solutions by contributing to financial and human resource capacity.

While stakeholder involvement has been embraced as a vital aspect and an increasingly common practice in wildlife conservation and management over the last 20 years, it presents a conundrum in public trust resource administration with respect to two principles presented earlier: "some distance between trustees and beneficiaries should be maintained" and "ensuring certain interests are not privileged over others." It seems generally accepted that public trust management should be well informed by beneficiaries (not just the best organized stakeholders), but trust administration expectations indicate trust management decisions cannot be abrogated to stakeholders and particular interests should not have disproportionate influence on decisions. That leaves the question, "What is the appropriate nature and role of public engagement in trustee decision-making?"

As Boggess and Jacobson (2013) indicate, perhaps the role of broad, *inclusive* stakeholder engagement is most valuable for *building and maintaining the public's trust in their wildlife agencies*, as a prerequisite for effective public trust administration. Certainly understanding stakeholder interests in wildlife is vital to competent trust administration, and having the trust of (credibility among) stakeholders is always important to effective management implementation. However, the relationship between stakeholders as trust beneficiaries and wildlife managers as trust administrators has limits, necessary to the existence of a trust relationship per public trust doctrine. Thus, executing the public trust responsibilities of an agency and sustaining the public's trust in the agency are interdependent, but are not one and the same.

Resource Dependency, Policy Influence, Beneficiary Expectations, and the Reality of Funding

Although all our speakers may not use these terms, details of their examples and their analyses of the situations they experience indicate the pervasive influence of two inter-related phenomena that exist among state wildlife agencies today: resource dependency and policy influence. That is, implementation of the North American Model of Wildlife Conservation in the U.S. is largely dependent on the financial contributions of consumptive users, who have essentially cornered the wildlife management policy process to advance their interests in the public wildlife trust. The example given by Moore et al. (2013) where traditional stakeholders revolted against the nomination to the Fish and Game Commission of a person who does not hunt is a manifestation of this phenomenon. Depending on the state, the model to some extent embraces a "users-pay and payers-privileged" relationship. This relationship served management of the public wildlife trust reasonably well for many decades, until more interests sought voice and influence in how their public wildlife trust was managed. Clearly, all citizens have the right to expect the trustees to manage the public wildlife trust in the best interests of all beneficiaries (that is, the public interest overall). One problem, as the directors point out in their papers, is that such management requires adequate resources, which have not been forthcoming in most states, and there are legal and pragmatic issues with using fees collected from some beneficiaries for particular privileges for broader purposes benefiting those who do not provide financial support. Diverting funds raised from some users to benefit others would be certain to erode the trust of those paying. Yet, the public wildlife trust exists for everyone's benefit, making this a difficult and potentially volatile conundrum to resolve. One would think that greater interest in a public trust resource by the broader public that collectively "owns" the resource would be a good situation, but in reality it creates lots of stress because public wildlife management is implemented largely with funding from narrow interests. The broader "public" and even many types of wildlife resource users have not created or contributed to mechanisms to pay for wildlife conservation or made clear to elected officials that wildlife needs a greater allocation of public funds.

Clarity, Consistency, and Accountability

The idea of having "principles" in a professional endeavor is to lend clarity and consistency to practice, and to allow for broader accountability to users of professional services or to society. Therefore, we should be asking ourselves about the extent to which the operating principles of public wildlife trust managers, whether those principles originate in the public trust doctrine directly or in the evolved practice norms of the wildlife profession, need to be examined with respect to the requirements of public trust resource administration. We can collectively strive to ensure discipline in public wildlife trust management by asking questions such as: Are proposals and actions evaluated with consistency based on accepted public trust principles? And whose responsibility is it to ensure such evaluation occurs and that consistency is maintained or deviations are justified?

These and related questions may be difficult at multiple levels. Nevertheless, first principles arising from public trust doctrine, the cornerstone of wildlife conservation in the U.S., can be used to evaluate wildlife management with respect to consistency with those core principles. Ideally, this explication would facilitate consistency and transparency in wildlife management, which in turn would foster accountability of trust managers to beneficiaries. Accountability is important, because if government does not administer the trust fairly for the benefit of all citizens (i.e., if government privileges

some citizens over others with respect to benefits provided when carrying out wildlife trust management), and the trustees cannot be held accountable, then public trust stewardship does not exist (Mahoney 2006, Samek et al. 2013). And, the public's trust in their wildlife management agencies is likely to suffer; after all, a "trust" is a relationship! Thus, insofar as principles derived from public trust doctrine guide trustees and their agents (trust administrators—wildlife agency leaders and managers), such principles can serve as norms of professional conduct and rules for ethical behavior in public trust administration.

Managing Wildlife as if Public Trust Responsibilities Really Matter

Reiterating our title for this paper, what *does* it mean to manage wildlife as if public trust responsibilities really matter? Based on what our speakers tell us, at minimum meeting public trust administration and management responsibilities consistent with the tenets of trust administration obligations:

- applying the broadest practicable concept of who beneficiaries of management are;
- soliciting, really listening to, and incorporating broader perspectives in conservation decisions;
- ensuring that meeting interests of current citizens does not foreclose opportunities for experiencing a broad set of benefits from the wildlife resource by future generations;
- ensuring certain interests are not privileged over others, because wildlife and the benefits therefrom are owned by and should be shared by all citizens;
- having in place effective mechanisms and processes for holding wildlife trustees and managers accountable to beneficiaries when they believe trust obligations are abrogated or preferentially focused.

Adopting public trust-based principles for wildlife management such as those outlined in this paper (and undoubtedly many more yet to be captured) would be some insurance that these requirements are met.

As evidenced by our speakers, stakeholder input and engagement has become common and in most agencies is considered essential to effective wildlife management, but as identified earlier, execution of public engagement processes by public wildlife trust managers is not free of concern. Forstchen and Wiley (2013) advise that "…trust managers need to design and conduct stakeholder engagements to ensure that we don't create a privileged status for any stakeholder group over another." We leave you with some questions to ponder about stakeholder engagement: What kind of engagement is appropriate or inappropriate and how much is too much? Why might that be a concern? And, where do you draw the line between stakeholder input and trust management decision making, which is the responsibility of trustees, in public wildlife trust management?

The evolution of wildlife conservation and management within a public trust paradigm is ongoing in the U.S. Several questions still need to be addressed and several conundrums need to be resolved before we can claim fidelity to common requirements for trust administration in public wildlife management. But that leads to another question—should administration of wildlife as a public trust resource follow precisely the rules common to other forms of trust administration or is a variant needed because of the uniqueness of wildlife as a public trust resource and the history of the institution that has evolved for its management? We will leave exploration of that question to another time.

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Special Session Two.
Talking to Sportsmen and Women About Hunting and Fishing in a Changing Climate

Communicating Climate Change to Hunters and Anglers: Sportsmen's Attitudes Toward Global Warming 2006–2013

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Abstract

Being aware of and actively involved in solving conservation problems is necessary not just for the health of our natural and aquatic resources but also for the health and safety of people worldwide. For the most effective conservation efforts to occur, conservation and natural resource agencies and organizations must build strong partnerships among themselves and, perhaps more importantly, with the public. As a result, the human element of conservation is becoming more important as it becomes clear that an understanding of the public often means the difference between the success or failure of conservation efforts.

To this end, Responsive Management has conducted several major studies to better understand sportsmen's attitudes toward global warming/climate change (Duda et al. 2010). (The researchers recognize that global warming is not synonymous with climate change. However, initial attitudinal/opinion research focused on global warming as this was the accepted term at the time. More recent attitudinal/opinion studies have focused on broader implications, using the term climate change. To maintain consistency with the previous study, the researchers asked about global warming.)

Research has shown that global warming is an important concern among the nation's sportsmen and women (hereinafter referred to as sportsmen; note that the term, "sportsmen," is meant in a gender neutral sense) (Duda et al. 2010). For the most part, sportsmen agree that global warming is occurring and that it is caused by human action. Further, many believe that global warming is affecting hunting and fishing conditions and will continue to do so in the future. Still, while the majority of sportsmen are willing to take action to minimize the impacts of global warming, some sportsmen believe that concerns regarding global warming are overblown or exaggerated by environmentalists. This article presents the findings of research to better understand sportsmen's opinions on and attitudes toward conservation issues, and specifically, global warming. This overview includes recent data regarding sportsmen's opinions on global warming and charts trends in sportsmen's attitudes and behaviors regarding global warming.

Methods

This article discusses the results of two studies conducted to assess sportsmen's attitudes toward global warming. The first survey was conducted in 2006 for the National Wildlife Federation (Responsive Management 2006). This study assessed hunters' and anglers' knowledge of, attitudes toward, and opinions on global warming issues, particularly as they relate to more specific policy issues. For this study, Responsive Management conducted a telephone survey of 1,031 sportsmen nationwide, with oversamples and state-specific questions administered in Arkansas (n=308), Florida (n=304), Michigan

(n=301), Minnesota (n=302), Pennsylvania (n=306), and South Carolina (n=305) (Responsive Management 2006).

In March 2013, Responsive Management repeated this survey, focusing on state-level results for Florida and Minnesota. Responsive Management conducted this scientific telephone survey of sportsmen (i.e., hunters and anglers) in these two states to provide comparisons with findings obtained in the 2006 oversamples of Florida and Minnesota sportsmen. The findings were used in trends analysis to chart changes in hunters' and anglers' attitudes and opinions regarding global warming since 2006.

Responsive Management conducted the telephone survey of hunters and anglers in Florida and Minnesota using both landline and cellular telephones. The survey was conducted using screeners to determine eligibility for participation in the survey. The requirements for survey participation included (1) that the respondent possessed a current hunting or fishing license and (2) that they had hunted or fished in the past 12 months. The data were weighted to represent the actual statewide population of anglers only, hunters only, and those who participated in both activities (USFWS/US Census 2011).

Responsive Management obtained 309 completed surveys of Florida sportsmen. Among those surveyed in Florida, 57.9% fished only, 5.9% hunted only, and 36.2% hunted and fished. Also, 308 completed surveys of Minnesota sportsmen were obtained. Among those surveyed in Minnesota, 31.5% fished only, 9.6% hunted only, and 58.9% hunted and fished. Results are reported at a 95% confidence interval.

Research Results

The survey resulted in some interesting, and perhaps surprising, findings. Most importantly, the findings suggest that while the majority of hunters and anglers do believe that global warming is happening, there appears to be an increase in skepticism among sportsmen since 2006.

When asked if they agree or disagree that global warming is currently occurring, 80% of Florida sportsmen agreed in 2006 compared with 59% in 2013 (Figure 1). Similarly, 72% of Minnesota sportsmen agreed in 2006, while only 56% agreed in 2013 (Figure 2). Conversely, the percentage of Florida sportsmen who disagreed rose from 10% in 2006 to 28% in 2013, and the percentage of Minnesota sportsmen who disagreed increased from 18% in 2006 to 31% in 2013.

Figure 1. The Percent of Florida Sportsmen and Women Who Agree or Disagree that Global Warming is Currently Occurring.

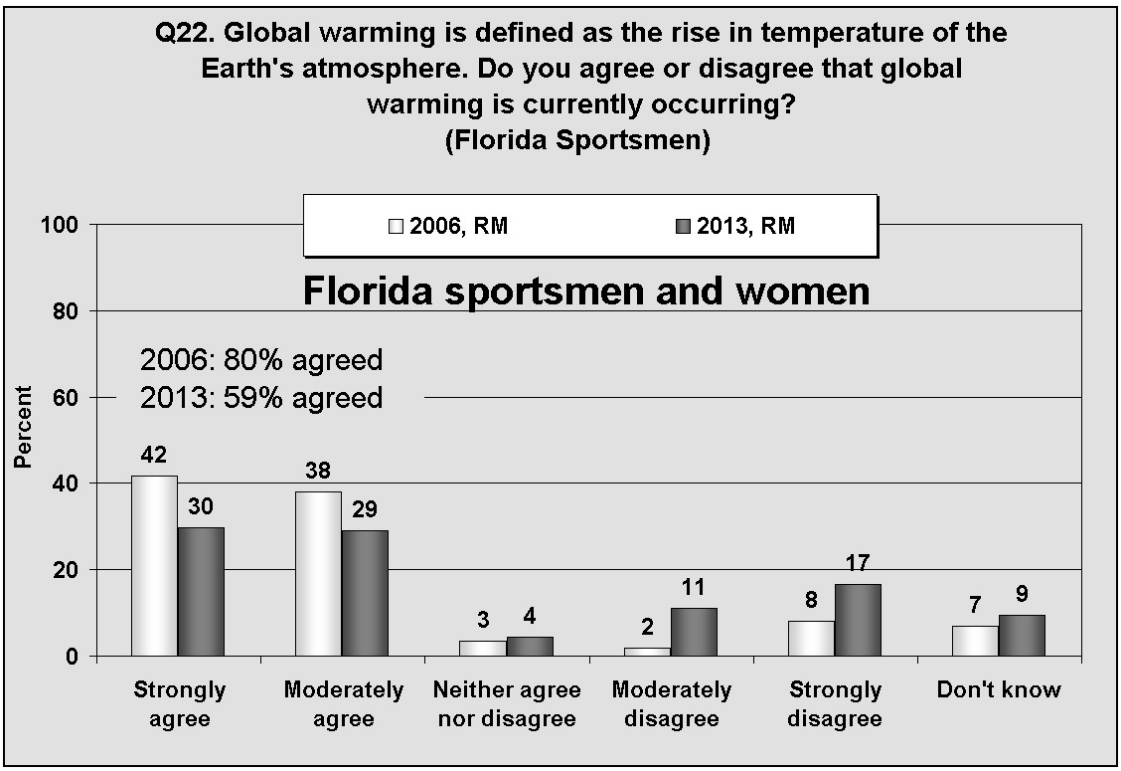
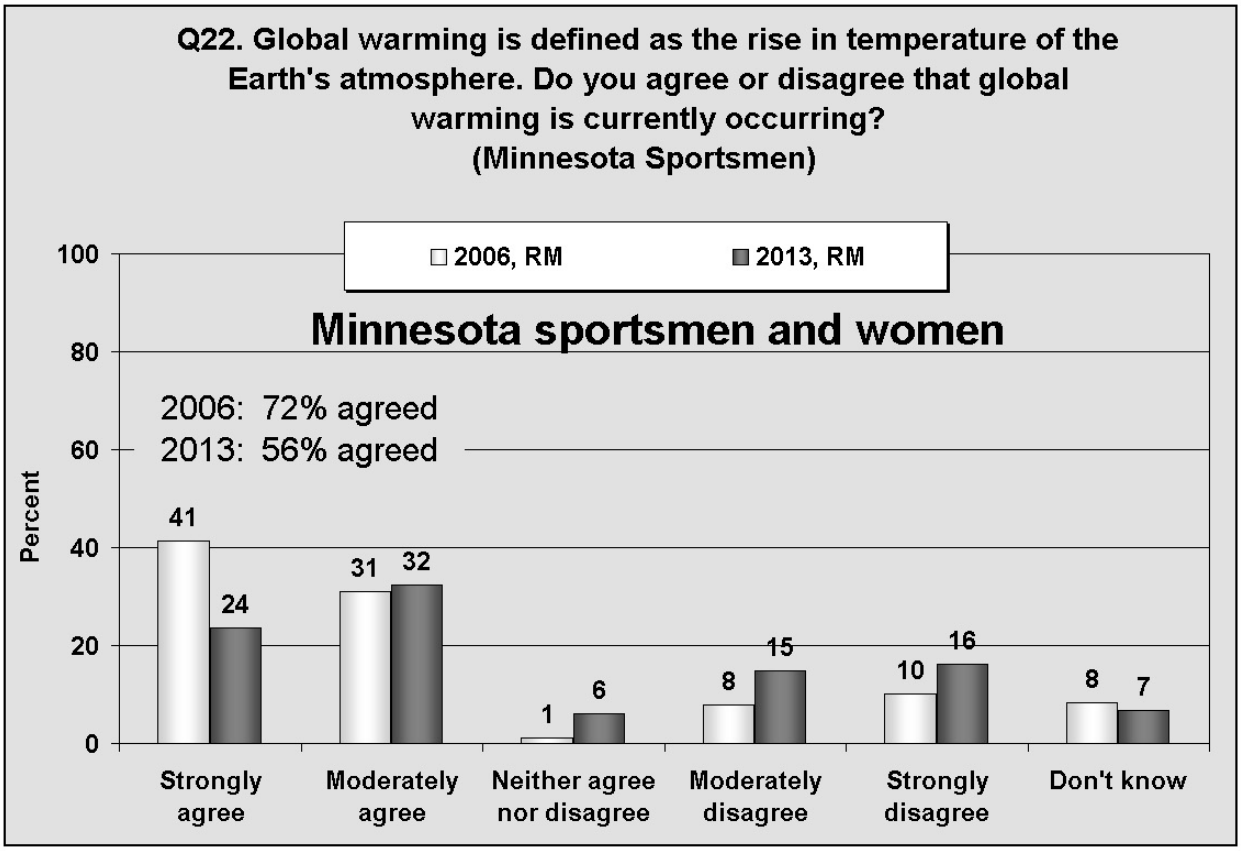
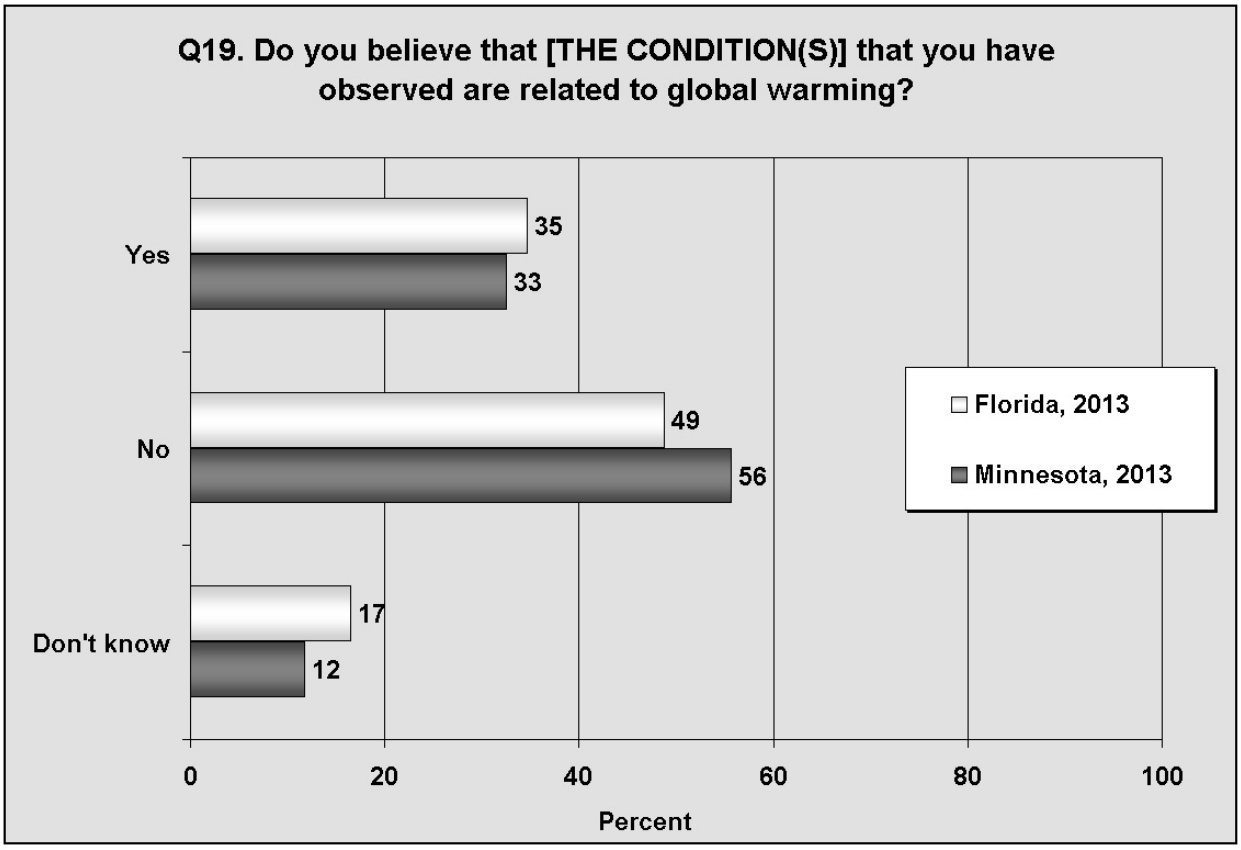


Figure 2. The Percent of Minnesota Sportsmen and Women Who Agree or Disagree that Global Warming is Currently Occurring.



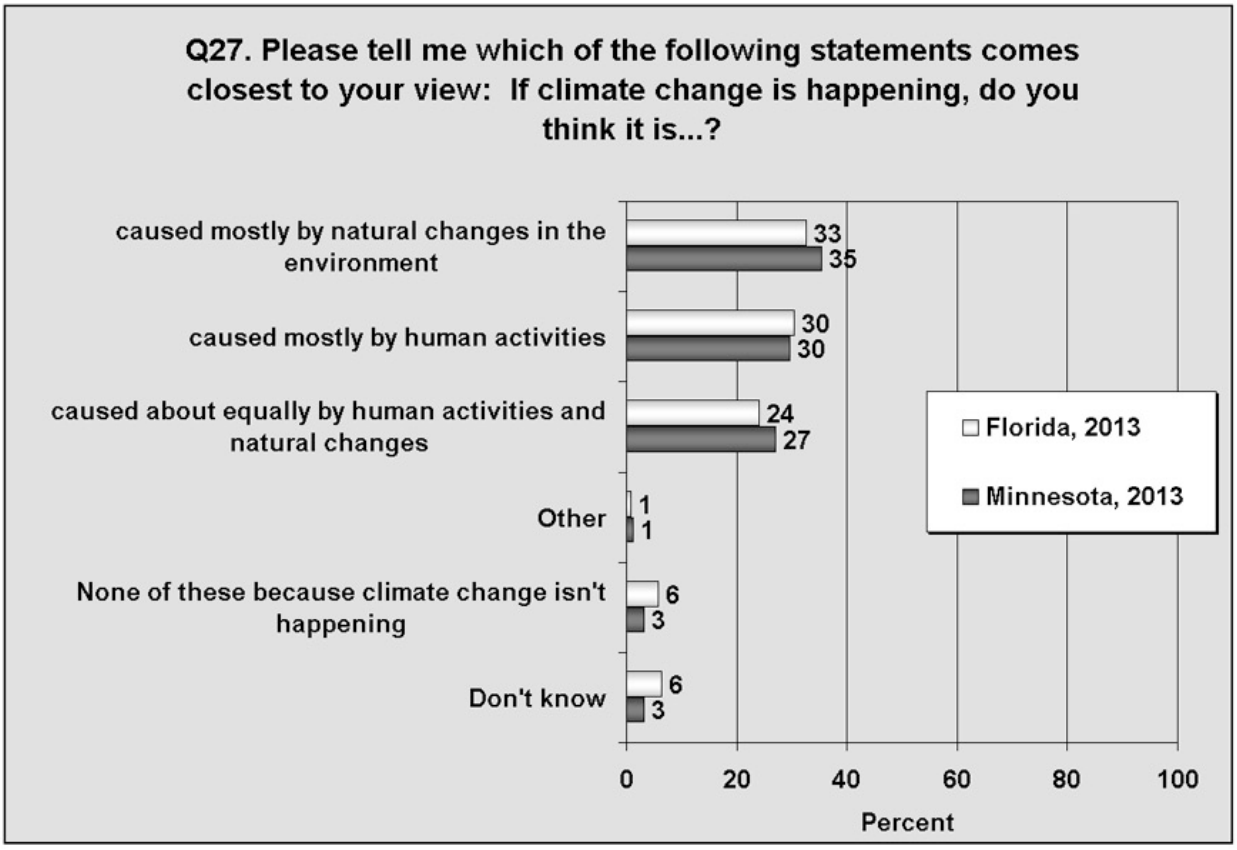
Sportsmen appeared to notice some changes in seasonal/weather and natural disaster/wildlife conditions where they live between 2006 and 2013. Most notably, Minnesota sportsmen reported hotter summers, drying wetlands, earlier bloom times, and unusual drought conditions (which saw a 36% increase in those reporting unusual drought conditions from 2006 to 2013). Similarly, Minnesota sportsmen indicated they had seen a greater decrease in bird, fish, or wildlife populations; an increase in new pests or invasive species; more intense storms; unusual flooding; and more wildfires, forest fires, or brush fires since 2006. Approximately a third of sportsmen in Florida (35%) and Minnesota (33%) attribute these changing conditions to global warming; still, approximately half (49% of Florida sportsmen and 56% of Minnesota sportsmen) do not believe these observations are related to global warming (Figure 3).

Figure 3. The Percent of Florida and Minnesota Sportsmen and Women Who Believe that Changing Conditions are Related to Global Warming.



Sportsmen have mixed opinions when asked whether climate change is caused mostly by natural changes in the environment or by human activities. More often, sportsmen indicate that they believe climate change is caused mostly by natural changes in the environment; 33% of Florida and 35% of Minnesota sportsmen gave this response. Still, nearly a third in both states believe that climate change is caused mostly by human activity; 30% of both Florida and Minnesota sportsmen gave this response. Most of the remaining respondents, 24% in Florida and 27% in Minnesota, say that climate change is caused about equally by human activities and natural changes (Figure 4).

Figure 4. The Percent of Florida and Minnesota Sportsmen and Women Who Believe that Global Warming Is Caused by the Following Factors.



Still, the percentage of sportsmen that attribute global warming to pollution caused from burning fossil fuels has dropped dramatically in both states since 2006. As shown in Figure 5, while 62% of Florida sportsmen agreed that global warming is primarily caused by pollution from burning fossil fuels in 2006, only 38% agreed in 2013. Similarly, 56% of Minnesota sportsmen agreed in 2006 compared with 40% in 2013 (Figure 6).

Figure 5. The Percent of Florida Sportsmen and Women Who Agree or Disagree That Global Warming Is Primarily Caused by Pollution From Burning Fossil Fuels.

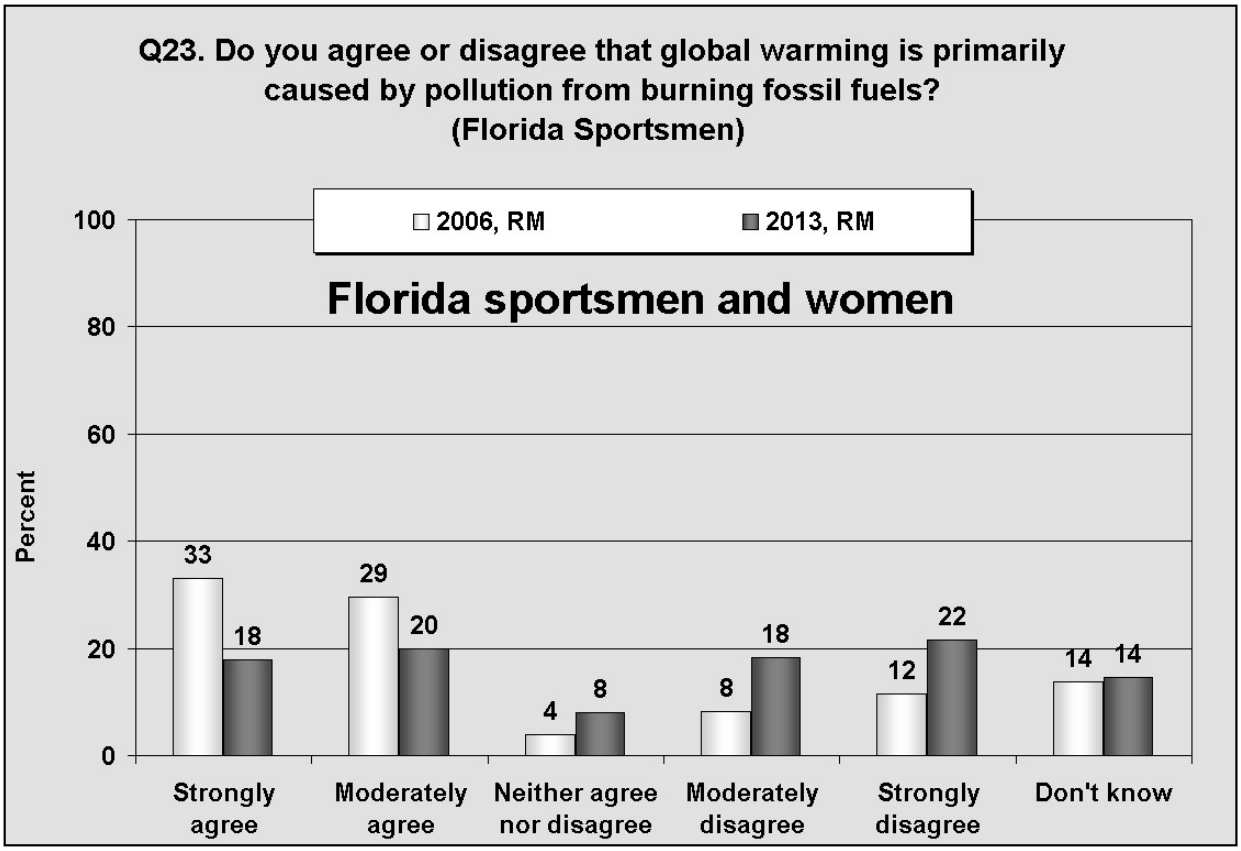
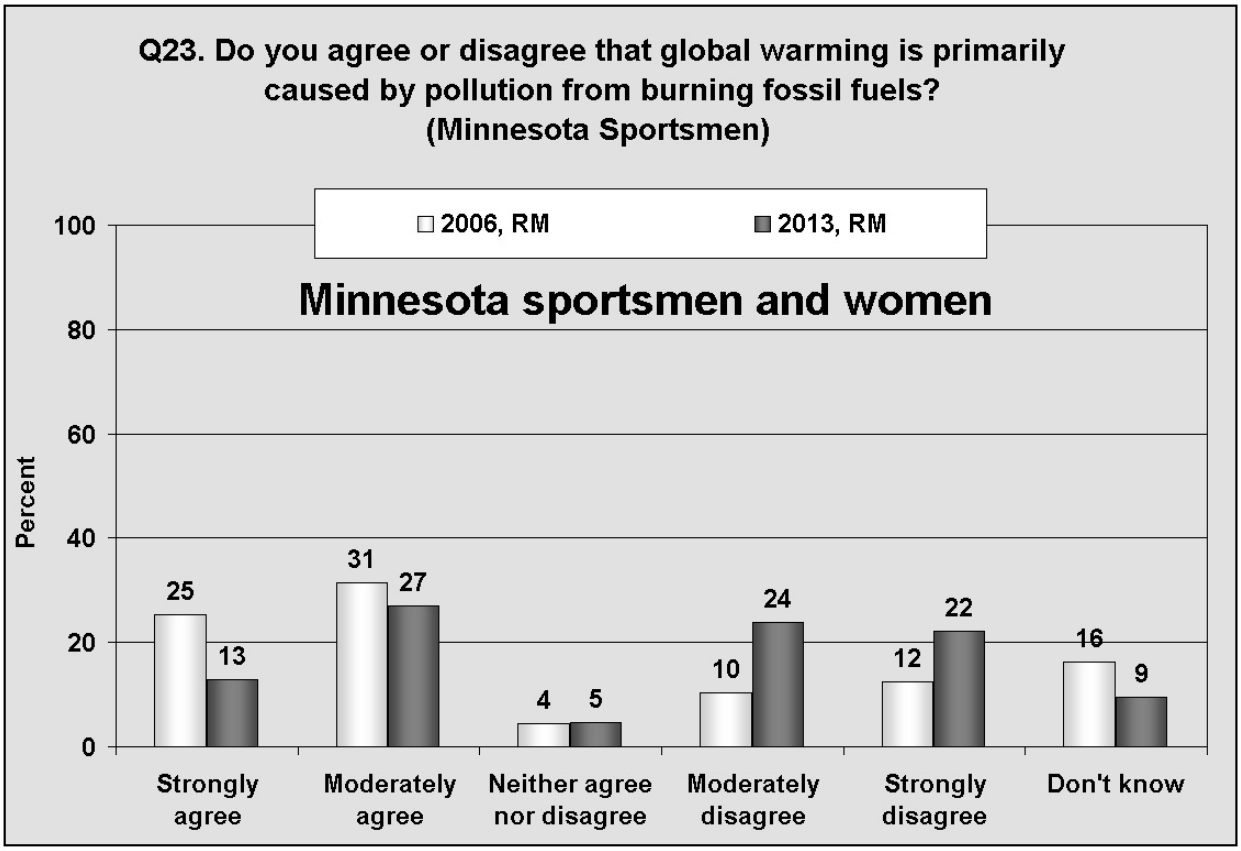


Figure 6. The Percent of Minnesota Sportsmen and Women Who Agree or Disagree That Global Warming Is Primarily Caused by Pollution From Burning Fossil Fuels.



Finally, sportsmen's opinions on the severity of the threats of global warming also declined between 2006 and 2013. Figures 7 and 8 below show a substantial decline in opinions regarding the severity of the threats of global warming to humans, fish and wildlife, and the national economy.

Figure 7. The Percent of Florida Sportsmen and Women Who Strongly or Moderately Agree With the Following Statements.

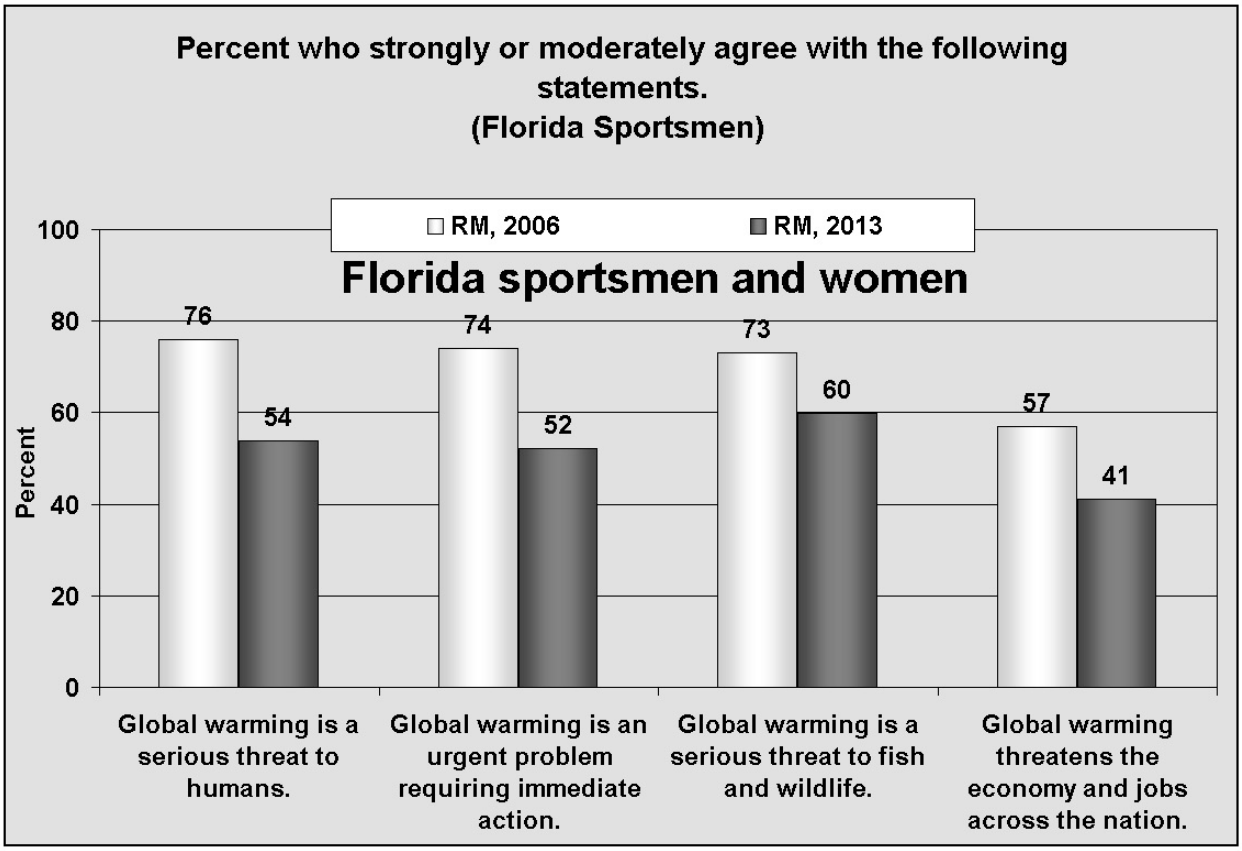
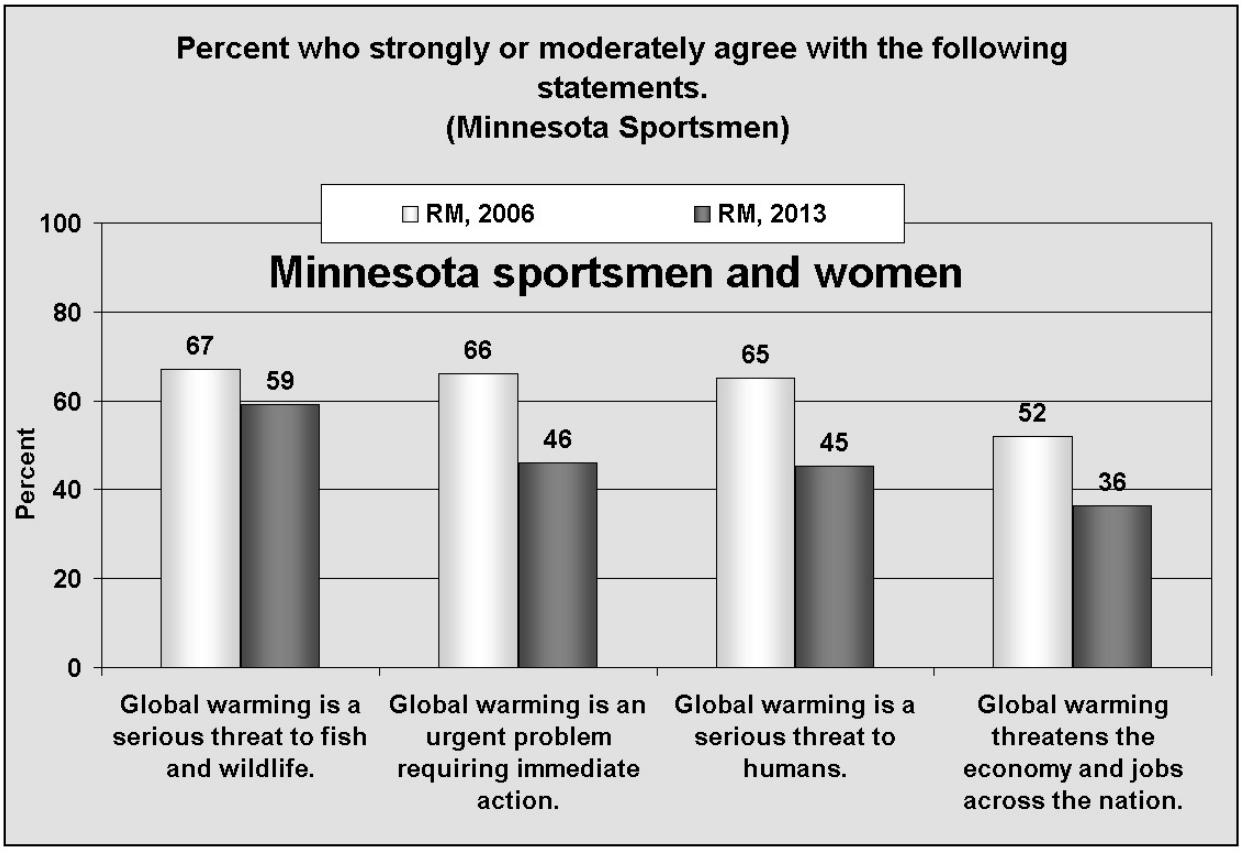


Figure 8. The Percent of Minnesota Sportsmen and Women Who Strongly or Moderately Agree With the Following Statements.



Furthermore, in Florida, the percentage of sportsmen who indicated that the statement "global warming will have little or no impact on hunting and fishing conditions, and concerns about it is overblown" comes closest to their viewpoint increased from 13% in 2006 to 33% in 2013; in Minnesota, this percentage increased from 24% in 2006 to 35% in 2013.

While these results may be surprising at first glance, the research shows sportsmen's opinions are aligned with changing national perceptions of global warming and climate change. An abundance of research on Americans' attitudes toward global warming has been conducted. Perhaps one of the most reliable ongoing studies is conducted by the Yale Project on Climate Change Communication. This study has charted changes in public opinion since 2010.

Most recently, the study was conducted in April 2013 and showed a decrease of seven points in the percentage of Americans (63%) who believe global warming is happening from the previous study conducted in the fall of 2012. Although a majority of Americans believe global warming is happening, a full 16% of Americans believe it is not happening, and this percentage has increased from 12% in the fall of 2012 (Leiserowitz et al. 2013). Similarly, a poll conducted by Gallup in 2010 shows a gradual increase in the percentage of Americans who believe that global warming is not occurring, from 3% in 2006 to 10% in 2010 (Newport 2010). Further, while Gallup's most recent poll (2013) shows that 58% of Americans worry about global warming (up from 51% in 2011), this percentage is still well below the percentage in 2000, which was 72% of Americans (Saad 2010).

Conclusions

There are many possible interpretations for this considerable decline in public opinion on global warming issues. The combination of alarmists' predictions regarding global warming falling short, and the success of skeptics' long-term campaign to cast doubt on the reality and significance of global warming have both likely played a part in changing public opinion. Similarly, news stories accusing scientists of manipulating or suppressing data have called into question the credibility of climate change research (even if these accusations were not true); consider 2009's "Climategate," which has resulted in increased skepticism, leading some to believe that global warming is a "scientific conspiracy."

Additionally, it is possible that Americans fail to see how this gradual process is connected to their daily lives, and with growing concerns over shorter term economic and jobs issues, climate change issues likely take a back seat to issues having a more immediate impact on daily life. Finally, there have been cooler short-term global and seasonal temperatures in recent years that may challenge American beliefs regarding global warming. Whether they are true or not, all of these factors combine to cast doubts and challenge American's and sportsmen's opinions on global warming.

An understanding of these changes in public behaviors, attitudes, and opinions provides the foundation for developing effective outreach and communications strategies, programs, and policies designed to increase overall awareness of conservation problems, encourage public support for conservation efforts, and ultimately, to improve the overall health of our natural and aquatic resources. Considering the changes in attitudes over the past few years, what is the best way to support conservation efforts through outreach and communications? There are several ways that conservation managers can improve their communications and outreach:

- Allocate appropriate and adequate financial and personnel resources.
- Involve biologists, other agency scientists, and even administrators in setting outreach priorities and goals.
- Identify target audiences.
- Adequately research target audience knowledge levels, opinions, and attitudes toward the specific outreach topic.
- Carefully identify and craft messages.
- Don't have too many messages or messages that tend to be too complex.
- Select the appropriate media with the specific target audience in mind.
- Emphasize program outcomes as opposed to program outputs.
- Implement long-term efforts and initiatives.
- Quantitatively evaluate efforts.

Given that the success of conservation efforts often hinges on public support or opposition to those efforts, it is important to highlight the best outreach and communications strategies for increasing public awareness and support regarding conservation issues such as climate change and global warming. With these outreach and communications strategies in mind and armed with scientific surveys of public opinion and attitudes, conservation managers can take broad strides forward to engage the public and increase action for global warming and climate change policies.

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Sportsmen and Women are Key to Addressing Climate Change

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What many tend to forget is that climate change will affect every aspect of our traditions, day-to-day lives, and future. The enormous ground we have gained over the last 150 years in the conservation field will all be for naught if we can't address the root causes of climate change. What good is our hunting and fishing heritage if there are no prairie potholes for waterfowl breeding grounds, or cool, clear headwaters for healthy fisheries?

There is no doubt that climate change is affecting us. In 2012, the contiguous United States experienced the warmest year on record, a full degree Fahrenheit warmer than the previous record in 1998 (NOAA 2013). Between record droughts, raging wildfires and Superstorm Sandy, the United States experienced the full gamut of extreme weather conditions associated with climate change. Wildfires ravaged much of the West, resulting in more than 9.2 million acres burned by the end of the 2012 fire season. Many of the fires were aided by severe drought in the Southwest, burning unnaturally fast and hot. The Waldo Canyon fire in Colorado was the most destructive fire on state record, killing all surface vegetation and roots down to four inches below the soil surface (Associated Press 2012).

Due to drought, more than half of the nation's counties were declared natural disaster areas in 2012, affecting crops, transportation along the Mississippi River, and prolonging an already unusually long fire season (Suhr 2012). Drought is forecasted to be persistent through the first quarter of 2013, providing little respite from a challenging 2012. Severe weather patterns were witnessed across the nation. Hurricane Isaac affected Louisiana, Mississippi, Alabama, and Florida, while Superstorm Sandy ravaged 14 states along the eastern seaboard and revealed weaknesses many of our coastal cities will face because of climate change.

Climate change will have irreparable effects on wildlife and habitat (Beyond Seasons End 2013). Atypical weather patterns, shifting habitats and changing food availability are all factors affecting wildlife populations (Rohwer et. al 2012). Sportsmen and women are witnessing these effects firsthand, whether on the ground, in the blind, or on the river. The dedication and passion sportsmen share for conservation gives them a unique and valuable political position to fight climate change. After a year like 2012, it is no surprise that 69 percent of sportsmen agree that the U.S. must reduce carbon emissions that contribute to global warming to protect fish and wildlife habitat (Grant 2012).

Throughout NWF's history, our organization has worked tirelessly on conservation legislation that directly affects hunters and anglers. NWF has fought hard to uphold and promote forward-looking laws for clean air, clean water and wildlife. Much of this success is due to virtual armies of sportsmen and women across the country fighting for these and other laws. In this vein, NWF organized over 800 local, state, and national organizations in support of comprehensive climate change legislation in the first session of the 112th United States Congress in 2011.

We continue to address the concerns of sportsmen and women about climate change and its effects on wildlife they care so much about. For example, NWF is engaged with several recently formed advisory councils to tap into the vast knowledge of professional outdoorsmen, outdoor industry business owners, and conservation specialists. These advisory councils will help individual campaigns focus and further refine our project goals. Advisory councils give NWF an opportunity to collaborate with other established conservation organizations and provide on-the-ground professionals the chance to participate in issues that are important to both their lives and businesses.

NWF is also engaged in regional partner campaigns such as Vanishing Paradise and Sportsmen for Responsible Energy Development, both of which have been successful tools to unite sportsmen on a regional and national scale. To date, Vanishing Paradise has created a 13-member advisory council and established one of the first conservation promotional staffs consisting of 30 individuals from across the country. The Vanishing Paradise campaign also played an instrumental role in the passage of the

RESTORE Act by creating a bipartisan, national sportsmen voice in support of the act. Restoring the Mississippi River Delta will help address the impacts to the Louisiana coast from climate change.

In addition to on-the-ground grassroots/grasstop campaigns, NWF regularly publishes reports detailing specific actions that must be taken to reduce climate change, which include "The Waterfowler's Guide to Climate Change," "On Thin Ice," and "Ruined Summer." NWF has most recently released "Wildlife in a Warming World, Confronting the Climate Crisis," a report detailing the problems and solutions to the climate crisis, that will help wildlife.

With the help of sportsmen and women, the U.S. must take a leadership role in reducing carbon pollution, investing in clean energy, and safeguarding wildlife and habitats from climate change. We need quick and aggressive action to counter the effects of climate change. Recent reports have found that a global temperature increase of at least 7 degrees Fahrenheit by the year 2100 is likely without significant carbon reductions. The U.S. must take immediate action to create a clear plan for reducing carbon emissions 50 percent by 2030. We must prioritize energy policies that advance a clean energy economy by promoting renewable energy sources, place a price on carbon pollution that will ensure polluters pay the full cost of their impacts, and put laws in place that limit future carbon pollution. In addition, conservation and management of grasslands, forests, and agricultural lands are a vital component to increase carbon sequestration and improve wildlife habitat. By investing in renewable energy technologies, we can improve the environment and strengthen the economy, while helping wildlife, too. Two out of three sportsmen believe we have a moral responsibility to confront global warming for our children's future (Grant 2012). That is why National Wildlife Federation has been on the forefront of mobilizing sportsmen groups to combat climate change.

It is vital to safeguard wildlife and their habitats by promoting climate smart approaches to conservation. Key components include bolstering ecosystem resilience by engaging local, state and federal governments to manage for climate adaptation. Land and wildlife management plans must accommodate for shifting ranges of plants and animals caused by climate change. A recent study found nearly 200 bird species in North America have expanded their range northward by an average of 35 miles over the last 40 years (Staudt et. al, 2013). Strategic planning to expand parks and reserves, as well as improving connectivity among protected lands, will be an important component to improve ecosystem health and manage shifting ranges.

NWF opposes further development of the carbon-based energy reserves such as the tar sands oil fields in Canada, which have destroyed thousands of acres and caused irreparable damage to the fragile tundra and forest ecosystems. The U.S. must stop federal fossil fuel subsidies and reduce its reliance on dirty fuels for decades to come. A rapid transition to responsibly developed renewable energy sources must be implemented, ensuring at least half our electricity is from clean energy sources. When asked to choose between protecting America's public lands and prioritizing production of oil and gas, 49 percent of sportsmen and women chose public lands, while just 35 percent chose oil and gas production (Grant 2012). By promoting clean energy sources such as wind, solar, geothermal, and sustainable bioenergy, we can protect people and wildlife while working to continue economic growth.

There is a unique opportunity to engage and expand sportsmen and women's role in climate change. Over the last five years, the nation has experienced a 9 percent increase in licensed hunters and 11 percent increase in licensed anglers, contributing over $70 billion annually to the economy (Grant 2012). Sportsmen and women must unite and fight to protect our outdoor heritage against a warming world. They bring to the table a unique, on-the-ground perspective of the harsh effects and impacts of climate change. We must protect the wild things and wild places we love for the next generation. Hunters and anglers are not ones to sit idly by and do nothing, especially when our outdoor heritage is threatened by a changing climate. Climate change must be addressed quickly and aggressively; the time to act is now.

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Working with Sportsmen's Organizations and Other Conservation Partners in the Revision of Nevada's Wildlife Action Plan for Climate Change

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Congress passed the State Wildlife Grants program (SWG) in 2001 in recognition of the need for funding of wildlife diversity programs. Congress mandated each state and territory to develop a Comprehensive Wildlife Conservation Strategy (now named Wildlife Action Plans) by 2005 in order to continue to receive federal funds through the SWG program. Nevada's Wildlife Action Plan (WAP) was completed and approved by the U.S. Fish and Wildlife Service (USFWS) in 2005. Nevada's WAP has served as a plan of action for state wildlife conservation and funding by targeting the species of greatest conservation need and the key habitats on which they depend. To date, the Nevada Department of Wildlife (NDOW) has received over $12 million in federal dollars through the SWG program.

NDOW has been coordinating and leading a conservation partner planning team to revise Nevada's Wildlife Action Plan to incorporate the potential impacts of emerging and expanding stressors including: climate change; accelerated energy development; invasive species; and disease on Nevada's fish, wildlife, and habitats. NDOW partnered with the original Wildlife Action Plan team: The Nevada Natural Heritage Program (NNHP), The Lahontan Audubon Society (LAS), The Nature Conservancy (TNC), and also The Great Basin Bird Observatory (GBBO) to develop this revision to the plan.

This partnership team was awarded a Division of State Lands Question 1 Bond Habitat Conversation planning grant in order to help fund these efforts. NDOW also received SWG funds to support agency staff in the revision of the plan. In addition, the Nevada Team reached out to key representatives from the major federal resource management agencies: Bureau of Land Management, Forest Service, USFWS, and Bureau of Reclamation, for membership on the team. All four agencies responded with designees for the team.

Among the 50 states Nevada ranks eleventh in overall biological diversity, but is unfortunately ranked fifth in the number of species extinctions. Nevada's diversity of life is derived from its geography; the many mountain ranges are effectively isolated from one another by arid and treeless basins. Nevada's borders encompass about 71 million acres, making it the seventh largest state. The federal government administers 86% of the land base.

Nevada is uniquely challenged in approaching effective wildlife conservation in part because of its arid climate, geography, and limited water resources, which has created a unique endemic biota easily subject to threats and stressors. We anticipate many conservation challenges in the years ahead including the complex issue of climate change and its effect on Nevada's wildlife and key habitats. Also at stake is our ability to conserve wildlife communities in the face of more frequent and widespread wildfires, conversion of native plant communities by invasive species, habitat fragmentation, human population growth, and alteration of hydrologic processes.

NDOW and the Revision Team coordinated with state, federal, and local agencies, and conservation organizations to gather pertinent information for the plan revision. The Revision Team coordinated with multiple stakeholders to assess key habitats and species most likely to be affected by these stressors and developed effective strategies for managing and mitigating impacts. A major project theme was "keeping common species common" through the constant assessment of the status and needs of wildlife and their habitat and the initiation of responsive action before critical thresholds are crossed.

Major elements of the revision process that the Team developed are included below.

Habitat Analysis

TNC took on the task of predictive modeling of climate change effects on Nevada's vegetative communities. TNC measured ecological condition using two landscape-scale metrics for each ecological

system: ecological departure from the reference condition and the percentage of high-risk vegetation classes. Additionally, TNC provided results of each vegetation class, which was essential to relate changes in vegetation structure and food availability to the needs of wildlife species. The results of Landscape Conservation Forecasting™ applied to each of Nevada's 13 regions were provided to NDOW in the report, "Climate Change Revisions to Nevada's Wildlife Action Plan: Vegetation Mapping and Modeling" (Provencher and Anderson 2011).

Species Vulnerability Analysis

Concurrent with habitat modeling, the NNHP conducted a wildlife species vulnerability analysis using the NatureServe Climate Change Vulnerability Index (CCVI) evaluation program to determine which wildlife species exhibited characteristics that might uniquely hinder their adaptation to climate change, including but not limited to general mobility, physiological challenges, dependence on certain vegetation types or plant species, etc.

Avian Climate Change Response Modeling

The GBBO was contracted to provide specific data-supported climate change predictions for Nevada's breeding birds using point-count data from the Nevada Bird Count (NBC), a statistically-rigorous 10-year database with georeferencing and coarse-scale habitat association capability. The results of the GBBO analysis are presented in the report "Bird Population Responses to Projected Effects of Climate Change in Nevada: An Analysis for Revision of the Nevada Wildlife Action Plan" (GBBO 2012).

With the help of experts from all taxonomic fields, the WAP Team identified a total of 256 Species of Conservation Priority. The various ecological systems of the state were organized into 22 key habitat types. Each of the 22 key habitat conservation strategies provides the key habitat's particular importance to wildlife; each key habitat's associated Species of Conservation Priority organized by the important features of the habitat type that most influence the presence of the species. Included in this section are the predicted effects of climate change and wildlife responses to those effects, each key habitat's current condition, current land uses, and current problems in meeting its full contribution to statewide comprehensive wildlife conservation. A Conservation Strategy was designed for each key habitat with objectives and actions are derived from existing conservation plans (where available) and feedback from multiple meetings with species experts and conservation partners during the revision of the WAP. Each strategy includes a list of key conservation partners, programs, and projects likely to fulfill the objectives for each key habitat.

The Eight Required Elements Addressed in the Nevada Wildlife Action Plan

This WAP sets a strategic vision for wildlife conservation in Nevada. To further clarify the vision, WAP revisions must continue to address the required eight elements as mandated by Congress:

1. Information about wildlife species numbers and distribution.
2. Descriptions of key habitats and locations.
3. Descriptions of problems that may affect identified species and research needed to improve the situations.
4. Descriptions of proposed actions for conservation of the identified wildlife and their habitats.
5. Descriptions of how the species and results of the actions will be monitored.
6. Descriptions of how the strategy will be reviewed and updated on a periodic basis.
7. Coordination with federal, state, local agencies, and Indian tribes if the plan impacts land managed by these groups.
8. Public participation to identify their priorities.

In 2009, the Association of Fish & Wildlife Agencies (AFWA) and the USFWS produced a guideline for the states and territories with recommendations on how to incorporate climate change during a major revision of the Wildlife Action Plan entitled, "Voluntary Guidance for States to Incorporate Climate Change into State Wildlife Action Plans & Other Management Plans." The recommendations on how to incorporate climate change under each required element in this document provided important guidance to the revision of Nevada's Wildlife Action Plan. The Wildlife Action Plan Team also reviewed the "Best practices for State Wildlife Action Plans: Voluntary Guidance to states for revision and implementation" document developed by the AFWA Wildlife Committee State Wildlife Action Plan Best Practices Working Group, and have incorporated many of the proposed best practices into this plan revision.

Scoping Workshops for Conservation Partners

NDOW and the Revision Team coordinated with state, federal, local agencies, and sportsmen's and other conservation organizations during the plan revision. To initiate the planning process, NDOW and the Revision Team held a workshop in April 2009 for NDOW staff and our conservation partners. Participants were asked to provide input on the challenges to managing wildlife and fish resources and which information the plan should include to assist in prioritizing wildlife management and conservation actions. An overview of the revision process was provided to the Board of Wildlife Commissioners in December 2011.

A draft of the revised Wildlife Action Plan was posted on NDOW's website in January 2012 for public review. Public scoping meetings regarding the draft revised plan were held during the winter of 2012 in Elko, Las Vegas, and Reno. The workshops were advertised in the media and over 100 invitations were sent to agencies, industry, and hunting, fishing and environmental groups. Each of the Native American tribes in Nevada was sent a letter inviting them to the workshops. At each meeting location, an afternoon workshop was held for professional natural resources managers and an evening workshop was held for conservation partners, industry, and the general public. Attendees at the meetings included federal and state resources agencies, county governments, tribes, sportsman's groups, recreation groups, university personnel, and others. Attendees viewed a presentation providing an overview of the draft revised plan and the revision process and an overview of the species and habitat analysis for the plan revision. A facilitated question/answer and input session followed at each workshop. The Revision Team worked with sportsmen's organizations and other conservation partners to discuss the importance of maintaining ecosystems capable of supporting healthy fish and wildlife populations and reducing present threats to wildlife to increase their ability to withstand the effects of changing climate. Discussions included the need for conservations actions to address habitat fragmentation, the importance of habitat corridors for maintaining habitat connectivity, and maintaining adequate water for fish and aquatic habitats for the sustainability of quality hunting and fishing.

The Revision Team held meetings following the workshops and public input period to review all written and verbal comments, and made adjustments to the draft plan accordingly. The Revision Team stayed in close contact with agency personnel throughout development of the draft plan. Coordination was maintained with the USFWS office in Reno and Las Vegas, the BLM State Office, and the Humboldt Toiyabe National Forest Supervisors Office. One of the primary strategies of the WAP is to integrate its objectives and actions with other agency planning processes to foster synergistic achievement of wildlife management objectives at a statewide scale.

Wildlife Action Plan Implementation

The Nevada WAP is designed to be a 10-year plan (through 2022), so complete evaluation and revision is scheduled to occur on a 10-year rotation. Because issues and conditions can change so quickly

in natural resources management, the Wildlife Action Plan Team will work with the greater Nevada wildlife conservation partnership to keep the plan current and on-track.

As in the 2005 plan, it will be the task of Nevada's wildlife conservation partnership to evaluate the 22 strategies, set priorities, design implementation plans, monitor progress and evaluate the results. During implementation of Nevada's WAP, it is critical to recognize the importance of monitoring success and adjusting priorities and actions (adaptive management).

The Nevada WAP was submitted to the USFWS for approval in late 2012. Through innovative partnerships with conservation organizations and implementation of Nevada's revised Wildlife Action Plan, NDOW is working to maximize natural resource protection and ensure ecosystem resiliency across the changing landscape for all wildlife.

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Talking to the Public, Through the Media, About Climate Change

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The video starts with me looking off camera and talking, but with no audio. This continues for approximately ten seconds. Then I stop, turn and look directly into the camera, at which point I ask:

"Can the people you're trying to reach hear what you're saying?"

Intro
This is a primer on how to talk about climate change. It doesn't matter if you're speaking to an individual or a group, or if we're in front of a microphone or a video camera. My advice also holds true if you're writing a letter to the editor, or an op/ed, or a blog post, or something for Facebook or Twitter. Follow these guidelines and you will be become a more effective, more persuasive communicator.

1) Know Why You're Talking About Climate Change
So why do we need to talk about climate change? It's simple. If we don't reach a political solution here in the U.S., we will not reach an international agreement to reduce our planet-wide greenhouse gas emissions. And if we don't reach an international agreement, we will burn down a century's worth of American conservation work.

Let's run through that one more time. If we don't reduce our greenhouse gas emissions in the near future, we will squander a century's worth of vital conservation work. We will also lose most, and possibly all, of our hunting and fishing.

It doesn't matter if your individual focus is on fish or wildlife, hunters or anglers, trout or elk or pheasants or bass or turkeys. If we don't get a handle on climate change, everything we care about will eventually go away.

Which brings us to our second point.

2) Know What You're Talking About
Few hunters and anglers are up-to-date on the latest climate science. The same is true of many wildlife professionals. So educate yourself. Not only so you can project an air of competence and expertise, but so the information you share is both accurate and current. Bottom line - if you're talking about climate, you need to understand the latest science.

So where do you go to learn more about climate change? ConservationHawks.org

Can you get the necessary info from other sources? Absolutely. But if you visit our website and click through "Issues" and "Climate Change" to "The Latest Science," we will provide you with working links to the National Academy of Sciences, NOAA, NASA, the Met Office in Britain, the Union of Concerned Scientists and the U.S. Fish and Wildlife Service. You'll have access to facts, figures, charts, videos ... pretty much everything you need to share the latest and most accurate climate science with the public.

3) Know Your Target Audience
The most effective communicators really understand their target audience. Make sure you know exactly who you're trying to reach and keep them in mind while you're sharing your message.

4) Keep It Simple
If you're reaching out to the general public, or to hunters and anglers, stay away from big words. Try not to sound like a professor, or a librarian or, God forbid, a lawyer. Keep it simple, use short words, and be clear and concise.

5) Tell A Story
People love stories. They're a great way to get your message across, and they help people relate to you on a deeper, more emotional level. If you have a story or an anecdote that helps illustrate your point, you need to use it. Stories are a key to breaking through people's subconscious defenses and allowing them to hear what you're saying.

6) Repeat Yourself Frequently
Repetition drives your point home. Repeat yourself frequently. You'll notice that I've made a point of repeating myself on a regular basis during this video. There's a reason for that. Repetition is vital. So repeat yourself frequently.

7) Create A Connection With Your Audience
Try to use the same words, phrases, terms and inflection as your target audience. If you're hoping to reach hunters or anglers, then do your best to sound like a sportsman. You want to make it as easy as possible for your audience to follow, and agree with, your message. If you come across as an outsider, or as "different" from your target demographic, you'll be shooting yourself in the foot.

8) Do Not Equivocate
Science rarely expresses certitude. That's one of the reasons why so many scientists have a hard time getting their message across to non-scientists. Help your audience, along with the media professionals who are sharing your message, by using short, declarative statements of fact. At the same time, stay away from expressions of doubt or uncertainty. Don't dilute or destroy your message by waffling, or by following up a strong statement with two or three minor qualifiers.

Does that mean we should fudge the truth? No. Always be as accurate as possible. But share the facts you know, not the facts you don't. Let's repeat that one more time, for emphasis. Share what you know, not what you don't.

9) Visuals
Visual aids are important. They help people understand the message you're trying to share. If you're making a presentation, or if you're providing materials to the public or the media, use simple diagrams and charts. The more complicated your visual aids are, the less effective they'll be. And whenever possible, use appropriate photographs (insert inappropriate photo here) to illustrate the point you're trying to make.

10) Be Positive, Not Negative
Science teaches us that the word "No" tends to disappear from our memories over time. Therefore, if you tell the public "There is no major scientific disagreement on climate change," a fair percentage of your audience will eventually remember the exact opposite—"There is major scientific disagreement on climate change." Stay away from "No" and other negatives, and use positive frames instead. For example, use "The vast majority of climate scientists agree that the earth is warming, that people are responsible, and that natural systems are at risk." Be positive, not negative.

11) Make It Easy
Make it easy for the media to get your message out. Talk slowly enough that folks can understand you. Use short words and stay away from unnecessary scientific jargon. Be clear. Repeat yourself. Oh, and repeat yourself. And use short words.

12) Climate Change Is A Moral Issue
When we talk about climate change, we are talking about our future. Climate change will have a huge impact on the great outdoors, and on the kind of world we leave our kids and our grandkids. Climate change is the single most important issue of this new century, and that's doubly true for sportsmen and others who love to spend time outdoors. You don't need to preach, but don't ignore the moral aspects of climate change.

13) Know The Points You're Trying to Make
Don't go into an interview or a presentation until you know the message you're trying to share and the outcome you're trying to create. Every word you say, every metaphor you use, every picture or diagram or chart should help enforce your message.

14) Know When To Quit
When you're done, wrap things up and ask if you can clarify your statements or answer any questions. Then—and this is really important—stop talking.

Final Thought
Keep it short and sweet; remember to repeat.

Special Session Three.
Landscape Conservation in North America: Collaborating Within and Among Partnerships

The Northeast Regional Conservation Framework

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Abstract

Conservation partners in the northeastern United States, including state fish and wildlife agencies and Landscape Conservation Cooperatives (LCCs), are working together to implement landscape conservation practices, projects, and organizational structures supporting the development and application of scientific conservation planning and management. In 2006, the Northeast states developed an innovative Regional Conservation Needs (RCN) granting program (www.rcngrants.org) supported by a 4 percent contribution of State Wildlife Grant funds from each state that from 2007-2012 has resulted in the implementation of twenty-seven projects that transcend geopolitical boundaries. Landscape Conservation Cooperatives in the Northeast including the North Atlantic, Appalachian, South Atlantic and Upper Midwest Great Lakes were formed in 2010 as regional conservation science-management partnerships. They consist of federal agencies, states, tribes, universities and private organizations, and are focused on collaboratively developing science-based recommendations, decision-support tools and shared science capacity to guide effective conservation of species and other natural resources at landscape scales. The states and LCCs hosted a workshop of Northeast partners in June 2011 to review progress and prioritize next steps for multi-species conservation. They developed the Northeast Regional Conservation Framework (Northeast Framework) to articulate what they are collectively trying to achieve, the steps necessary to get there, who will do what, and how they will know when they get there. As one key outcome, the North Atlantic LCC and state partners are developing a synthesis of regional conservation information for State Wildlife Action Plan (SWAP) revisions. Compiled information on species and habitats will provide a regional context for SWAP elements and will be available for voluntary inclusion into each state's Plan via a dynamic, web-based information management system. A complementary effort involves the development of a SWAP database and common lexicon to promote consistency in the next generation of SWAPs, allowing regional rollup, revisions, and accessibility of information on species, threats, and needed management actions.

Introduction

The northeast United States is recognized for collaborative landscape conservation practices, projects, and organizational structures supporting the development and application of scientific conservation planning and management. The most visible aspect of the collaborative effort is the delivery of major tools and science products, such as regional habitat classifications and maps. The collaborative approach in the Northeast is collectively referred to as the Northeast Regional Conservation Framework (Northeast Framework). The purposes of this paper are, first, to document the Northeast Framework key operational lessons and successes that make multi-jurisdictional collaboration possible, and second, to describe projects and results that serve as foundational elements in establishing landscape scale scientific planning and management for the Northeast. Last, we summarize key next steps and adaptations for delivering collaborative scientific planning and management at the regional scale.

Regional Conservation Planning in the United States

State, federal and non-governmental organizations participate in regional conservation planning in a variety of ways. In the federal realm, two Bureaus in the Department of the Interior, the U.S. Fish and Wildlife Service (Service) and U.S. Geological Survey, have adopted adaptive management guidance and an approach referred to as Strategic Habitat Conservation (SHC) (U.S. Fish and Wildlife Service and U.S. Geological Survey 2006; U.S. Fish and Wildlife Service 2008). SHC recognizes self-sustaining populations of fish and wildlife, in the context of landscape and system sustainability, as an overarching target of conservation. SHC relies on an adaptive management framework to inform decisions about where and how to deliver conservation efficiently to achieve predicted biological outcomes. The SHC approach is built on five main components of adaptive management: Biological Planning; Conservation

Design; Conservation Delivery; Outcome-based Monitoring; and Assumption-driven Research, and allows the organization of different capacities and capabilities towards common biological outcomes.

From a state perspective, State Wildlife Action Plans (SWAPs) provide a framework and an opportunity to advance regional-scale scientific planning and management. Funds for planning and management of Species of Greatest Conservation Need identified in SWAPS are administered through the State Wildlife Grants (SWG) program and can be applied to regional priorities. Guidance from Congress required each state to prepare a comprehensive Wildlife Action Plan addressing eight elements (U.S. Fish and Wildlife Service and Association of Fish and Wildlife Agencies, 2007) that represent a similar version of a conservation planning and adaptive management framework to SHC. This guidance, though extensive, was directed solely towards conservation within state borders and did not address planning across jurisdictions.

Much has been written about adaptive management at the scale of local sites, for single species management systems, or for certain ecological systems. However, there are few examples of comprehensive adaptive management of resources across a range of ecosystems at the landscape scale. In the face of great uncertainty, more comprehensive systems of conservation planning and adaptive management are needed to address driving landscape stresses, such as urban growth and climate change, which require large-scale coordination and planning. New information technologies have significantly improved our capacity for integration and implementation of conservation planning and adaptive management at regional, continental and global scales. Specifically, foundational spatial data such as land use and land cover, geology and hydrography along with location and extent of species and suitable habitats can be mapped at true extents of their distributions using current Geographic Information Systems (GIS) technologies. Advances in information management and computation speed have made large landscape analysis widely accessible, stimulating burgeoning growth of landscape-analysis tools to support conservation planning and decision-making. The availability of such powerful tools necessitates a corresponding development of planning and operational structures in the organizations that stand to benefit from their application. These new tools must be integrated into existing organizational capacity and workflow to realize their full potential for improving effectiveness of conservation actions.

Conservation in the Northeast Region

The Northeast has a long legacy of inspired landscape conservation and natural resource management. In 1864, George Perkins Marsh, resident of Woodstock, Vermont, published *Man and Nature*, which framed the early conservation ethic. Later, notable conservation icons such as Bernhard Fernow, Theodore Roosevelt, and Gifford Pinchot, each residents of the Northeast, held state and federal offices from which they influenced the establishment of the National Park System, the Forest Service, the Adirondack Park, and the first National Wildlife Refuge. Through both state and federal institutions, they advocated for and integrated the foundations of scientific management and planning (James 1999). In the Northeast, our leadership is now acting upon the availability of new technologies to advance a new revolution in conservation.

The Northeast Region includes 13 states, the District of Columbia, 17 federally recognized tribes and a shared border with five Canadian provinces. Home to 25 percent of the nation's population and made up of primarily private lands, the region's complex environment is heavily influenced by human disturbances. Forestry, industrialization, resource extraction and urbanization have placed severe demands on the native fauna and flora, making the protection of remaining habitats and populations critical to maintaining the region's biodiversity. Now the multiple effects of development, energy extraction, and accelerated climate change add growing threats to already imperiled habitats and species, with potentially vast environmental and economic consequences.

The Northeast Region encompasses a wide diversity of coastal and inland ecosystems and habitat types as shown in the Northeast Terrestrial Habitat Map (Figure 1). Diverse ecosystems and habitat types support an equally diverse set of fish and wildlife resources, but many of these natural resources are vulnerable to urbanization, energy development and forest management practices. In the report

commissioned by the Northeast Association of Fish and Wildlife Agencies entitled, "Conservation Status of Fish, Wildlife, and Natural Habitats," Anderson et al. (2011) documented the condition of fish and wildlife and their habitats. These include:

- The majority of the region's watersheds still retain 95 to 100 of their native fish species, but are also home to up to 37 non-indigenous species.
- The range of native brook trout, a species that prefers cold high-quality streams, has been reduced by 60 percent.
- Twenty-seven percent of riparian areas have been converted and only 14 percent are secured.
- On average, 43 percent of the forest occurs in blocks less than 5,000 acres in size that are completely encircled by major roads, resulting in an almost 60 percent loss of local connectivity.

Few landscapes, species populations, or habitats are contained within, or managed by, a single state; therefore, the Northeast agencies have a long history of collaborating across boundaries and jurisdictions to facilitate cohesive resource management policies for species and habitats. Examples of existing regional partnerships that represent a broad range of agencies and organizations include the Northeast Association of Fish and Wildlife Agencies, Landscape Conservation Cooperatives, Joint Ventures, Fish Habitat Partnerships, Atlantic States Marine Fisheries Commission, and the New England Governors Commission on Land Conservation.

In response to resource management needs, the Northeast has initiated, and completed, steps toward building a regional conservation network as part of a national network. Through the Regional Conservation Needs (RCN) program and Landscape Conservation Cooperatives (LCCs), they have already taken several steps toward a state-based national network for effective wildlife conservation suggested by Meretsky et al. (2012):

- established common habitat classifications and maps across the entire northeast;
- identified regional SGCN (RSGCN) and surrogate species;
- coordinated and leveraged capacity for research and monitoring;
- facilitated and enhanced information dissemination; and
- developed a process for synthesis of regional data for SWAP revisions.

The RCN program and the North Atlantic LCC have collaborated to make major advances toward overcoming obstacles to regional conservation, including multi-jurisdictional governance, stability and consistency of funding, project prioritization, and a common framework for conservation.

Overview of NEAFWA, RCNs, and LCCs

Northeast Association of Fish and Wildlife Agencies (NEAFWA)

The Northeast Association of Fish and Wildlife Agencies is composed of the thirteen Northeast states and the District of Columbia, represented by the Directors of the respective state fish and wildlife agencies. Multi-state resource concerns and limited funding provide compelling justification for the states to collaborate in landscape and conservation initiatives. The Northeast Fisheries Administrators Association (NEFAA) and Northeast Wildlife Administrators Association (NEWAA) work with standing and *ad hoc* species and habitat technical committees to provide recommendations to the Directors on vital resource concerns. The development of guidance and recommendations on the regional application of State Wildlife Action Plans originates primarily from the Northeast Fish and Wildlife Diversity Technical Committee (NEFWDTC), which is composed of Wildlife Diversity Program Managers and State Wildlife Action Plan coordinators. State biologists are often directly responsible for on-the-ground resource management decisions and recommendations. Consequently, they are able to use their resource

management observations as a foundation to identify regional needs and develop recommendations for NEAFWA.

Working across state lines with a mix of state and federal dollars is complex and extremely difficult, requiring adequate organizational and personnel resources to motivate, coordinate, monitor and report on project outputs and outcomes. The long history of cooperative management approaches in northeastern states and the strong organizational structure of NEAFWA provide the basis to address the challenge. For example, the Eastern Canada Cooperative Banding Project has been operating for over 40 years bringing together NEAFWA, the U.S. Fish and Wildlife Service, and the Wildlife Management Institute (WMI) in a conservation strategy that could not be achieved by an individual entity.

Regional Conservation Needs

In 2006, the National Fish and Wildlife Foundation and Doris Duke Charitable Foundation provided support for regional meetings following the completion of the State Wildlife Action Plans. In the Northeast regional meeting, participants recognized that while each state had developed a Wildlife Action Plan that addressed the species and habitats of conservation concern within their boundaries, a portion of each Plan also contained common elements. These included species and habitats that span state boundaries and where much of the required tools and techniques were too costly or redundant if developed state-by-state. Further, it was recognized that natural resource conservation on a regional scale could yield more durable outcomes and leverage regional partners. The workshop resulted in the development of the Regional Conservation Needs (RCN) program.

In 2006, NEAFWA, WMI, and the Service drafted a proposal to create the RCN program. The Northeast state Directors approved the proposal and states agreed to contribute and pool 4 percent of their State Wildlife Grant (SWG) apportionments to fund cooperative work of regional importance. Proposals were first requested in 2007 and subsequent requests have resulted in the implementation of twenty-seven projects. On behalf of NEAFWA, WMI serves an essential role in program success by administering the entire process including requests for proposals, review of proposals, selection of projects, managing contracts, payments and reporting.

The purpose of the RCN program is to develop and coordinate projects that are regional/sub-regional in scope, to build upon the many regional initiatives that already exist and to complement ongoing work in individual states. Regional Conservation Needs are designed to be focused, necessary projects that have broad applicability to bring greater understanding to regional issues and landscape-scale conservation. They are developed by various taxonomic and habitat technical committees of the NEAFWA, refined by the NEFWDTC, the NEWAA, the NEFAA, and ultimately reviewed and approved by the NEAFWA Directors. Proposals are solicited through a request for proposals to the conservation community. These are reviewed and ranked by small technical review teams, refined, and submitted to the NEAFWA Directors with a recommendation for funding. The Service participates in the technical review of proposals and works closely with the WMI to screen proposals to ensure they are eligible, substantial in character and design, and comply with federal law and regulations. Additionally, the Service works with each of the Northeast States and the District of Columbia on grant documentation to obligate SWG funds, add approved projects, and document performance.

Landscape Conservation Cooperatives

Landscape Conservation Cooperatives were formally recognized as regional, self-directed, science-management partnerships by a Department of the Interior Secretarial Order in 2010 (U.S. Fish and Wildlife Service 2009; U.S. Department of the Interior 2010). The Secretarial Order stated that: "because of the unprecedented scope of affected landscapes, Interior bureaus and agencies must work together, and with other federal, state, tribal and local governments, and private landowner partners, to develop landscape-level strategies for understanding and responding to climate change impacts."

The North Atlantic LCC (NALCC) was among the first LCCs to be established, bringing together federal agencies, states, tribes, universities and private organizations to develop scientific information and tools for conservation actions addressing species and habitats from Southeast Virginia north to Atlantic

Canada. Critical issues facing this region include land use pressures and widespread resource threats (e.g., energy development) and uncertainties amplified by a rapidly changing climate. The LCC provides the structure, staff capacity, and processes to coordinate landscape conservation action among partners and across partnerships. LCCs serve as a forum to develop consensus on common goals and landscape designs for sustaining natural resources, develop applications for new science and technology, link science to conservation decisions and evaluate collaborative progress toward shared goals. The NALCC has a formal governance structure and is guided by a Steering Committee with 33 formal member agencies (including all state fish and wildlife agencies), organizations and technical teams that provide recommendations to the Steering Committee. The Service provides financial and staffing support to facilitate the partnership and annual project funding to help address priority science and science delivery needs. Additional staffing support is made available through the U.S. Geological Survey, National Park Service, U.S. Environmental Protection Agency and National Oceanic and Atmospheric Administration.

The NALCC recognized and built upon the many existing partnerships, and the processes and priorities put in place by those partnerships, particularly the work of NEAFWA through the RCN program, including the administrative role of WMI. In its first three fiscal years, the NALCC supported 19 science projects and three science delivery demonstration projects. Several of these projects were complementary to, and built upon, RCN-funded projects. The NALCC as well as the Appalachian LCC have worked closely with NEAFWA to help ensure efficient and effective use of resources.

The Northeast Framework

The Northeast Regional Conservation Framework (Figure 2) was proposed and adopted at a workshop of Northeast Conservation partners in June 2011 in Albany, New York. The Framework articulates what partners are collectively trying to achieve and the steps necessary to get there. The Framework then helps organize and prioritize work to best contribute to the common outcome, and creates a conservation blueprint for landscape-scale ecosystems and habitats which will support the multiple species and natural resources that agencies are collectively responsible for in the Northeast region. It helps us organize our individual capacities, responsibilities, and expertise, and identifies where each partner can best contribute. It illustrates the relationship among activities, identifies the information gaps, and shows the logical next steps in the process. Northeast states, federal agencies, and other conservation organizations recognized the value in the Framework because it shows the relationship of the projects and products developed through RCN, LCC, and other conservation efforts towards the outcome of landscapes supporting the species and resources that all partners are working towards.

The Northeast Regional Conservation Framework includes the essential components of the SWAP required elements, as well as the planning and adaptive management concepts of Strategic Habitat Conservation (SHC). The NALCC has adopted the Northeast Conservation Framework as the foundation of the LCC's science strategic plan and has provided funding and capacity to develop the framework and work with partners for its implementation. The Northeast Conservation Framework represents a direction for the partnership and a willingness of the partners to collectively and intentionally work in an organized fashion towards a larger landscape conservation vision that no one jurisdiction or organization could achieve on its own. The Northeast Conservation Framework and the collaborative work that it represents through the Regional Conservation Needs Program and the North Atlantic and Appalachian LCCs represent the Northeast conservation communities' response to the huge conservation challenges that face us, and the intent to make significant and collaborative contributions to the future of natural resources in this region.

Compared to previous frameworks, the Northeast Conservation Framework places a higher priority on managing the flow of information among these elements (i.e., information management) and translating information to the scale and formats needed by decision makers. It also emphasizes the importance of working with partners to adopt the tools (conservation adoption). These elements are implemented through the LCC's content-management website and data portal, and Science Delivery team.

Governance Structures for Multi-Jurisdictional Decisions

The North Atlantic LCC and NEAFWA coordinate governance in several ways. The LCC hosts its Steering Committee meetings in tandem at the annual spring NEAFWA conference and at the annual fall NEAFWA Director's meeting. The two meetings correspond with review and approval of priority science needs and selection of projects. Opportunities for coordinated projects and complementary funding awards are identified and communicated among between NEAFWA and the LCCs though the Northeast Directors who are part of both partnerships. Examples include the LCC extending and developing climate change vulnerability assessments that complement the vulnerability assessments originally developed through the RCN process, and supporting marine and coastal habitat mapping to complement the RCN terrestrial habitat map. Both the North Atlantic LCC and NEAFWA have developed partnerships with the Wildlife Management Institute to provide administrative capacity to jointly fund priority needs, assess progress and communicate results.

Results and Products of Collaborative Conservation in the Northeast Region

The results of the collaborations developed by the states, LCCs and other partners and partnerships in the northeast region include the tools to make informed conservation decisions in the face of multiple threats and uncertainty including impacts of changing land use and climate and the development of governance structures to make decisions toward common goals. Following the Northeast Conservation Framework, the states and LCCs have developed or are developing consistent terrestrial, aquatic, coastal and marine habitat classifications and maps, regional species and habitat vulnerability assessments, specific assessments of regional species of concern, assessments of ecological functions, and modeling frameworks and tools that provide support to evaluate alternatives and make decisions about conservation actions in the face of change. These tools collectively help articulate a landscape conservation blueprint for the Northeast and provide regional context for state and local actions. Although there is not room here to provide details on these projects, that information is available for RCNs and LCCs on their respective websites (rcngrants.org, www.northatlanticlcc.org, and applcc.org).

Synthesis of Regional Information for State Wildlife Action Updates

An essential outcome of the Northeast collaborative effort is a synthesis of regional conservation information, which will provide a regional landscape designs and context for elements in individual State Wildlife Action Plans (SWAP). The synthesis is envisioned as set of components for voluntary incorporation into each state's SWAP update. Products will be available in a dynamic web-based information management system. A complementary effort involves the development of SWAP database and a common lexicon to promote consistency in the next generation of SWAPs, improve accessibility, and allow comparison of SWAP elements among states. The collective effort will provide many foundational scientific planning and management tools.

This synthesis is a great example of the collaboration of states, LCCs and partners around the Northeast Conservation Framework. The LCC is contributing: a common regional SGCN screening process; multi-jurisdictional SGCN data sharing and compilation; an assessment of species distributions and habitats; regional landscape conservation designs; and data and scenario planning. The RCN program will deliver: habitat maps and assessments of habitat condition; standardized summaries of regional plans, threats, and actions; regional summaries for each SWAP chapter; a common planning lexicon; and a regional SWAP database.

Discussion and Summary

Lessons Learned

Define Beneficial Outcomes and Efficiencies of Regional Collaboration First

In the context of working across jurisdictions, there is a natural tension between collaboration and autonomy. We recommend cultivating a common understanding at all levels of organization and management about how regional collaboration yields efficiencies. Articulate how priorities and effort might shift favorably when these are realized. Identify missions, practices, processes, and authorities that are necessarily jurisdictional or autonomous in order to differentiate these from commonalities and potential synergisms that will benefit from regional collaboration. Collaborative regional tools and practices need to be motivated by mutual benefit, integration of mutually desirable innovations, and efficiencies or technologies of scale.

Use a Logical Order of Operations

Projects must be organized in a deliberate and stepwise order, so that foundational common needs are addressed before dependent processes are initiated. High priority end points may require significant investment in building science foundations (such as consistent classifications) that appear lower priority at the outset. Build a common framework (e.g., Northeast Conservation Framework) and stepwise strategy first, in which order of operations may trump perceived priority.

Define the Terminology of Common Practices

While many organizations have adopted models of adaptive management and planning, the broader discipline of landscape conservation has not yet adopted comprehensive common terminology to describe scientific management and planning. To facilitate communications and synthesis of information, it is essential to establish a common terminology for: kinds or classes of resources managed; threats or factors that impact resources; and actions prescribed to manage resources.

Support for Governance and Project Coordination is Essential

Partners may have the desire but not the resources to coordinate effectively without dedicated funding and staff to do so. The LCCs build this governance and support into their structure.

Utilize a Third Party to Overcome Funding and Administrative Barriers

The challenge of pooling resources and funding projects with different annual budget cycles and diverse agency processes can be overcome by a third party that provides the structure and capacity to obligate funds and track projects as is done by WMI for both the RCN and LCC partnerships.

Equalize Technological Awareness and Access

Essential technologies have evolved rapidly; at all levels, it is critical to share access to new technology through websites and training.

Granting and Project Oversight Requires Significant Capacity

Funding regional scale science and planning projects requires major capacity to steer, adopt and implement. Agency decision makers and program leaders that stand to benefit from their outcomes need a commitment of time to ensure regional outcomes truly benefit contributing jurisdictions, yet the requisite engagement competes with otherwise unrelenting jurisdictional duties. Each project funded would benefit from a corresponding allocation of project funding to support ongoing integration and coordination to ensure meaningful delivery of results.

Good Projects Have "Vertical" Support

Projects that are developed with input by technical staff lower in the organizational hierarchy and approved by Agency Directors at the top are more likely to be useful and fit into a larger vision.

Good Projects Have "Horizontal" Involvement

Projects need to include involvement across programs, agencies and organizations through oversight teams and demonstration projects in various jurisdictions to help ensure integration and implementation.

Summary

Conservation partners in the Northeast region of the United States have made significant progress in developing and implementing a conservation business model that utilizes a common adaptive management framework to achieve a shared vision for sustaining natural resources. The development and implementation of State Wildlife Action Plans that share a common regional context will be a critical next step in linking regional priorities to state-level implementation. Other important next steps include the development of a fully functional information management system; greater capacity for science translation, conservation adoption and science delivery; and increased capacity with agencies and organizations for participation in landscape scale conservation.

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Figure 1. Northeast Terrestrial Habitat map (Gawler et al. 2008; Ferree and Anderson, 2011).

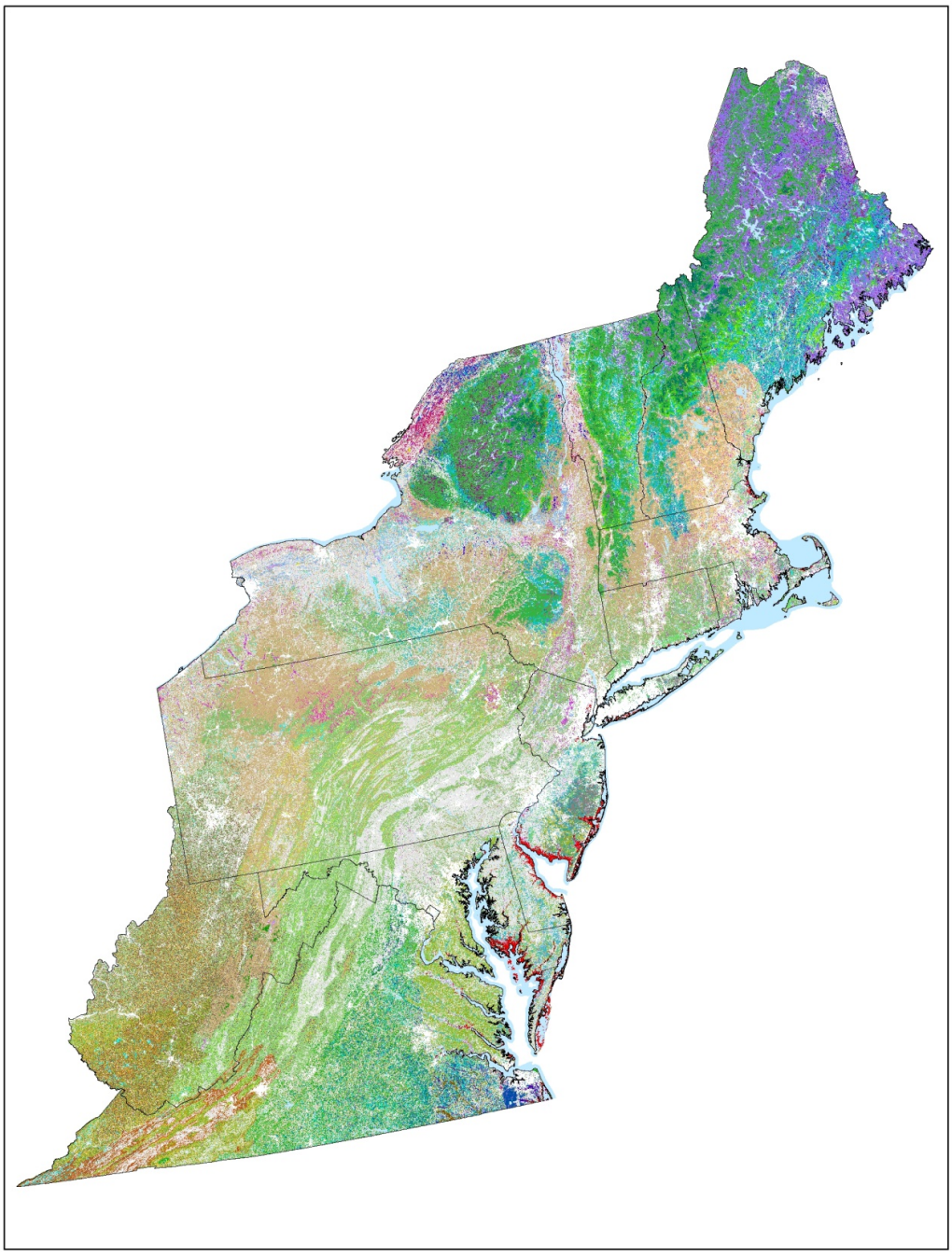
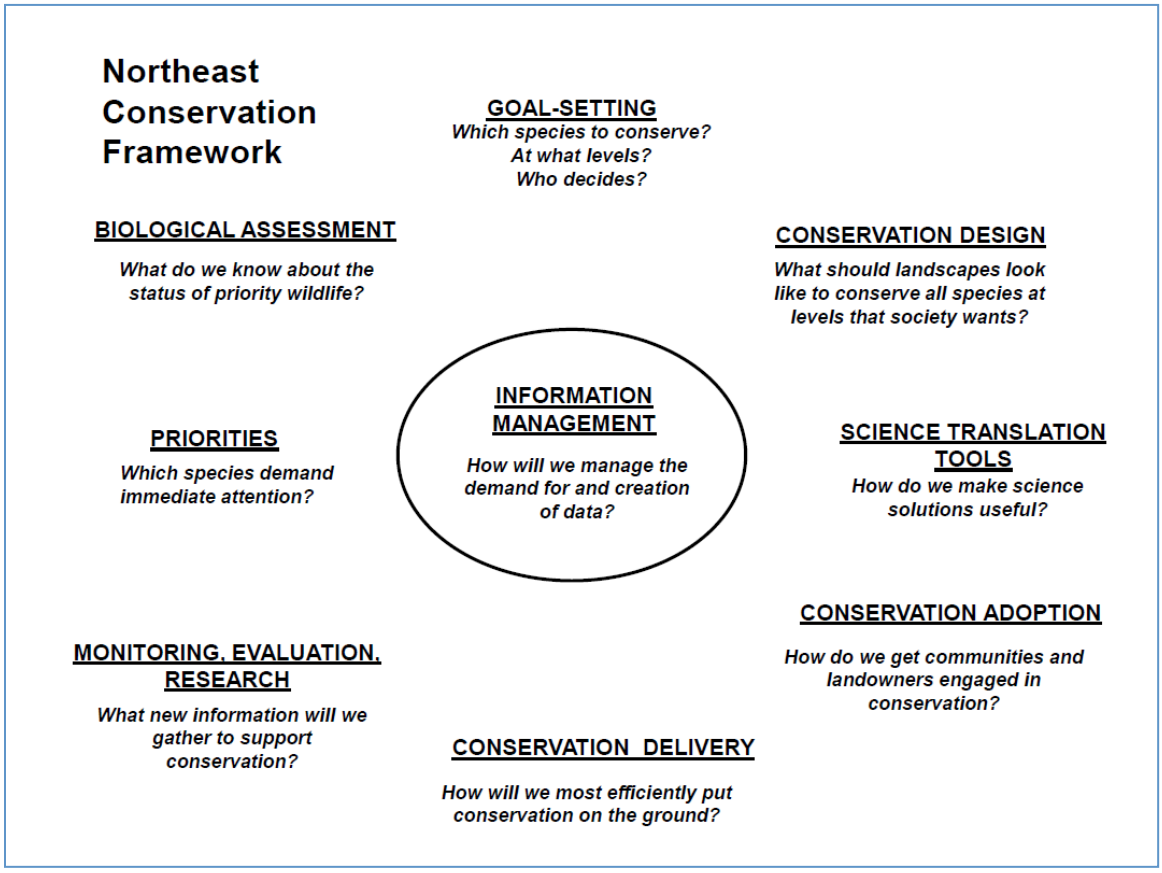


Figure 2. Northeast Conservation Framework. The Northeast Conservation Framework was adopted jointly by NAFWA and NALCC in June, 2011 as a means to organize and evaluate regional conservation projects. The figure incorporates principles of scientific planning and management.



Special Session Four.
What Does Green Really Mean? Renewable Energy Implications for Wildlife

Implications of Energy and Agriculture Development for Wildlife on Private Lands: Opening Remarks

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We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.
Aldo Leopold

Conservation means development as much as it does protection. I recognize the right and duty of this generation to develop and use the natural resources of our land but I do not recognize the right to waste them, or to rob, by wasteful use, the generations that come after us.
Theodore Roosevelt

Private lands comprise approximately 66 percent of the land base of the U.S. (Benson 2001) and provide critically important habitats for many species of wildlife. Private lands occupy an overwhelming portion of land area under the three major land use practices in the United States, accounting for 57 percent of grassland and rangeland (National Academy of Sciences 1994), 60 percent of forest land (Stein et al. 2005), and virtually all cropland. Although wildlife belongs to society in general and the custodianship is entrusted with state and federal governments (Benson et al. 1999, Organ et al. 2012), private landowners have a major influence on habitat management, conservation and, ultimately, the fate of fish and wildlife populations.

With the emergence of renewable energy sources such as wind, solar and biofuels, coupled with expanding development of traditional fossil fuels, energy development on private lands has exploded in recent years. Additionally, conversion of grasslands and wetlands to cropland is occurring at a rapid pace (Wright and Wimberly 2013), further reducing habitat for both game and non-game species on private lands. To make matters worse, drought and other extreme weather events are placing additional pressures on the landscape.

Sportsmen depend on access to private lands for recreational hunting and fishing opportunities, particularly in states with few public lands such as the states of Kansas (98 percent privately owned), North and South Dakota (both 91 percent privately owned), and Oklahoma (95 percent privately owned) (U.S. Bureau of the Census 1991). Public access programs, such as the "Walk-in Hunting Access Program" in Kansas (http://www.kdwpt.state.ks.us/news/Services/Private-Landowner-Assistance/Wildlife/Walk-in-Hunting), are vital to sportsmen. However, access to private lands is only as good as the quality of the habitat available, which dictates the opportunity and experience for hunters and anglers. For example, during the 2012 drought, farmers and ranchers were allowed to hay and graze CRP and walk-in hunting areas under special policy rules that rendered many areas useless for hunting (Figure 1). Also, acres of CRP are declining and opportunities for sportsmen on private lands also can be expected to decline in future years unless policies and practices change.

Here are some interesting and somewhat frightening statistics. According to the U.S. Census Bureau (U.S. Census Bureau 2013), the population of the United States at the end of 2012 was 313,914,040, and our population is projected to increase by one person every 14 seconds and will exceed 400 million by the year 2050. The world population currently sits at nearly 7.1 billion today and is projected to approach nine billion by 2050. Clearly, expanding human populations will translate into

increasing demands on our public and private lands to produce all of the resource values and commodities we that need.

Ever wonder what 98 quadrillion represented? In 2011, the United States alone consumed 98 quadrillion BTUs of energy, and consumption is projected to be 104 quadrillion BTUs by 2035 (EIA 2013). Worldwide energy consumption is projected to approach 740 quadrillion BTUs by 2035, according to the Energy Information Administration. Increasing demand and consumption of energy, renewable energy and fuel standards, and our desire to achieve energy independence has and will continue to drive policy and practice out on the land more than we have ever experienced.

What does 35 billion gallons represent? This is the number of gallons of ethanol-equivalent biofuels mandated by the Renewable Fuel Standard (RFS) to be consumed annually by the U.S. by the year 2022, set forth in the Energy Independence and Security Act of 2007. According to a study by the National Academy of Sciences on biofuels (National Academy of Sciences 2011), 30–60 million acres of additional cropland would be required to produce the cellulosic portion of the biomass (~16 billion gallons) to meet the RFS by 2022. Unless there are major increases in agricultural yields or improvements in the efficiency of converting biomass to fuel, it is not likely the RSF goal could be met. But we can rest assured that people will try and there will likely be additional stressors on the landscape to meet multiple resource objectives.

What about land conversion? The emergence of biofuels and rising crop prices have resulted in broad scale shifts from conservation to production. Approximately 1.3 million acres of grassland were converted from 2006 to 2011 in just five states in the Western Corn Belt (the Dakotas, Nebraska, Minnesota, and Iowa), based on an analysis published by Wright and Wimberly (2013).

Finally, we should not forget about water consumption and usage. Based on a 2009 report on modern shale gas (Groundwater Protection Council 2009), 2–4 million gallons of water are needed to drill and fracture a single horizontal shale gas well, depending on the basin and formation characteristics. An EPA report estimated that 70 to 140 billion gallons of water are used to fracture 35,000 wells in the United States each year—approximately the annual water consumption of 40-80 cities each with a population of 50,000 (EPA 2011). The extraction of so much water for fracking certainly raises concerns about the ecological impacts to aquatic resources, as well as depletion of aquifers.

The list of examples of statistics that exemplify growing demands of our private and public lands goes on and on, but one number is critically important to keep in mind as we seek to balance these demands—zero. This is the number of acres we can "grow" in the United States or anywhere else in the world to address these issues. We simply can't make more acres, so we have to use those we have very carefully and wisely now more than ever before. Based on these statistics and many others we know of, coupled with political challenges such as budget sequestration and other complicating factors, we might ask ourselves if we're at one of those proverbial crossroads we often refer to when thinking about challenges we face as natural resource professionals. I am not normally an alarmist, but unfortunately, I fear we are at a very critical juncture in our history that, if handled poorly, may have irreparable impacts. So we have to get "get it right" and we need to "get it right" soon. We are no longer afforded the luxury of waiting, for whatever the excuses might be. We can no longer be divided as a community of professionals. We need to unite and work more closely together, forget our differences at least long enough to find the common ground, and work to achieve our goals.

We know that fish, wildlife and agriculture and energy can coexist, but we're all going to have to step up to make it happen in this rapidly changing environment. We need our elected officials to step up: gridlock and partisanship continue to hurt our country, the environment, our economy and our way of life and we can't tolerate this much longer. We need our land management agencies to step up: they must work more closely with stakeholders and particularly state wildlife agencies on linking land management planning and habitat objectives with the state agency's population and management objectives. Our land management agencies have to think outside of the proverbial box and embrace new ways of doing business in the realms of mitigation and landscape planning. A positive start would be for the Bureau of Land Management to broadly and consistently implement its own policies on oil and gas leasing reforms (DOI 2010). Industry and businesses can no longer push their practices to the maximum extent until laws

must govern their actions: we need proactive engagement and investment in conservation, rather than spending money to line the pockets of attorneys to fight every conceivable aspect of each environmental issue (see White 2001). In turn, the conservation and environmental community needs to realize that perpetual and often frivolous litigation wastes time and resources which could be used on positive actions to protect and enhance fish and wildlife habitat. We need the public to be better informed and engaged: ignorance and disengagement will not ensure a prosperous future for conservation, the environment, or our economy. And, to the theme of this session, we must ensure than conservation is an investment for private landowners, and not a liability.

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Figure 1. A public walk-in hunting area in northwest Kansas, November 2012, that has been hayed prior to hunting season, a practice allowed under emergency rules established by the U.S. Department of Agriculture.

The Minnesota Agriculture Water Quality Certification Program

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Introduction

Minnesota's lakes, rivers and streams feature prominently in the recreation and quality of life of its residents, and the high quality of those public waters is part of what makes the state special. Minnesota is also the nation's fifth most productive agricultural state with nearly 27 million acres devoted to agricultural production, $15 billion in annual sales, 340,000 Minnesota jobs supported, and an amazing variety of farms.

These distinctive assets make Minnesota the ideal location for a new collaborative approach focused on the intersection between agricultural production and water quality. The goal of the new state and federal partnership, called the Minnesota Agriculture Water Quality Certification Program (MAWQCP), is to enhance Minnesota's water quality by accelerating the voluntary adoption of on-farm conservation practices. The program is the product of a one-of-a-kind state and federal partnership that includes the Minnesota Department of Agriculture, the Minnesota Pollution Control Agency (MPCA), the Minnesota Board of Water and Soil Resources (BWSR), the Minnesota Department of Natural Resources (DNR), the U.S. Department of Agriculture's Natural Resource Conservation Service (NRCS), and the U.S. Environmental Protection Agency (EPA).

Program Development and Administration

A Memorandum of Understanding (MOU) was signed on January 17, 2012, by Minnesota Governor Mark Dayton, U.S. Agriculture Secretary Tom Vilsack, and EPA Administrator Lisa Jackson. The MOU document formalizes the state-federal partnership and confirms the joint commitment to developing and implementing the program. The State of Minnesota is responsible for development and implementation. USDA-NRCS will provide funding and technical assistance, and EPA will support the voluntary approach and affirm the state's primacy on the program.

The role of state agencies involved in the program will be as follows:

- The Minnesota Department of Agriculture will administer the program;
- The Minnesota Board of Water and Soil Resources will provide funding and technical assistance;
- The Minnesota Pollution Control Agency will provide certainty (other agencies may as well);
- The Minnesota Department of Natural Resources will provide support.

All involved state agencies have an interest in the success of the program and will be involved in its development.

Program Certainty

The MAWQCP will have a provision for providing "certainty" for farmers who obtain certification for their farm. The concise list of attributes of what certainty means for the certification program in Minnesota is as follows.

MAWQCP certainty:

- is offered by the executive and legislative branches of Minnesota state government;
- is not an exemption from any existing rules or statutes;
- requires that the implementation of recommended practices and certification be maintained;
- applies only to agricultural or land management practices that could affect water quality; and,
- does not apply to new requirements resulting from new court judgments.

Subject to these limitations, certainty means the following:

- For an agricultural producer, certainty means that the executive and legislative branches of the state government of Minnesota commit that certified farms will be considered to be meeting their contributions to any targeted reductions of pollutants during the period of certification.
- For the public, certainty means that the executive and legislative branches of the state government of Minnesota affirm that certified farmers are implementing recommended management practices to avoid water quality impacts from their agricultural operations.

Advisory Committee

The signatories of the MOU agreed to form a stakeholder Advisory Committee to develop the program. The Advisory Committee was assembled to provide input and recommendations to Commissioner Frederickson regarding the development of the program, as well as its particular features and focus. The committee was convened and staffed by MDA with the following composition:

- two farmers or ranchers;
- two representatives of general farm organizations;
- three representatives of commodity or livestock organizations;
- one representative of agriculture-related business;
- one representative of crop consultants or advisors;
- two representatives of environmental organizations;
- two representatives of conservation organizations; and
- two representatives of local government units.

In addition, MPCA, DNR, BWSR, the University of Minnesota and NRCS provided technical support.

Process

The committee provided its formal recommendation on November 14, 2012, as a series of seven consensus white papers. The Committee agreed on the following program operation steps for the certification program as adopted into state statute.

STEP 1: Initial Assessment—Committee members agreed that an initial informal assessment be done to determine eligibility or improvements that need to be made to make an operation certifiable. This initial assessment could be done by one of the following:

1) MAWQCP-accredited staff;
2) private individuals licensed as MAWQCP providers; or
3) the farm operator.

To enhance efficiency, it was determined that a producer who does not need to implement additional practices to meet the criteria or chooses to implement approved practices without financial or technical assistance, may skip STEP 2, and proceed to the certification process as outlined in STEP 3.

STEP 2: Technical Assistance—Once it has been determined through the initial assessment that a producer needs to implement additional practices to meet certification requirements, they will be moved to the technical assistance pool. This pool would allow a producer to receive technical and financial assistance to design and implement the additional practices to meet the criteria of the program. Technical Assistance will be provided by Technical Service Providers through the USDA Natural Resource Conservation Service and/or other qualified professionals as licensed by the Minnesota Department of Agriculture which could include, but should not be limited to, SWCD staff and Certified Crop Consultants.

STEP 3: Certification—The Committee members agreed that formal assessment for certification should be conducted by MAWQCP-accredited public and private personnel as licensed by the Minnesota Department of Agriculture. These "certifiers" would conduct the formal certification assessment to determine whether a producer meets the criteria set forth under the program. The "certifiers" would utilize a measurement tool (further recommendations on the tool are prescribed in a separate recommendation) to ensure consistency in the assessment process. It was agreed to by the committee that "certifiers" should not have a conflict of interest with the producer. The Commissioner should develop a conflict of interest policy. The Committee agreed that this policy would promote high confidence in the certification process.

STEP 4: Audit and Verification—The committee members further agreed that the Minnesota Department of Agriculture should establish a process to randomly audit "certifiers" and producers for verification that they are meeting the criteria set forth by the program.

STEP 5: Updates and Recertification—Upon conclusion of the term for which certification has been awarded, the operator may re-certify (but will need to meet any new assessment elements that may have been added since the prior certification). Further, the committee recommends that the Commissioner should develop a process that takes into account farm operation changes that would affect certification.

Pilot Projects

The committee further recommended that the MAWQCP be initially piloted in geographically representative agricultural areas of the state. In February 2013, the MDA conducted a pilot project area recommendation process where groups and communities across the state were invited to recommend there area for a pilot project. The pilot areas are expected to be named in the immediate future.

Identified characteristics for piloting MAWQCP include:

- Pilot areas in each of the primary agricultural regions of the state: the Northwest, Central/Southwest, and Southeast with consideration for locally-representative diversity of agriculture (predominant land use types, crops, livestock, water quality goals and resource concerns).
- Maximum three-year duration of pilot projects, to enable diverse sample conditions in weather, production systems, practice implementation, and other factors including emphasis on replication of successful MAWQCP implementation and operation locally.

The MAWQCP pilot project areas:

- Will provide sample conditions of production systems, practice implementation, and other factors including emphasis on replication of successful MAWQCP implementation and operation locally;
- Will be representative of the local diversity of agriculture (predominant land use types, crops, livestock, water quality goals and resource concerns);
- Will produce measurement metrics to establish the qualities needed for a successful Program; and
- May receive dedicated resources in the form of cost-share contract opportunities for individual producers and technical assistance financial support for conservation consultation providers.

Public Listening Sessions

Throughout the month of February 2013, the Minnesota Department of Agriculture held a series of Public Listening Sessions to inform the development of the MAWQCP. These listening sessions took place in six locations throughout the state. The Public Listening Sessions were free and open to everyone and sought to create an open dialogue to ensure that the MAWQCP is most effective in delivering value to participants and the public. Results of non-scientific polling of the attendees at those listening sessions are available in Appendices I and II for results.

Conclusions

In the listening sessions the farmers in attendance were asked to declare their interest in participating in the MAWQCP: Forty-two percent of farmers said they were likely or very likely to participate, 36% said they needed more information, and 22% were unlikely to or would not participate. When asked to rate the influence of various incentives, the top two incentives cited were 1) financial assistance for implementing practices, and 2) certainty. Potential participants are already specifying that they see value in the new approach represented by the MAWQCP. The additive value of the program is further realized through uniting applicable state and federal agencies within one program, leveraging existing expertise and resources and preventing duplication of functions. Finally, what is known is that the increased adoption and maintenance of water quality protecting practices by certified agricultural producers will reduce the impact of those operations. Natural resources will benefit from the new capability presented by MAWQCP to demonstrate existing, adopted and maintained exemplary water quality stewardship specific to each individual operation on the basis of field physical characteristics, nutrient management, tillage management, pest management, irrigation and tile drainage management, and conservation practices. We know MAWQCP will achieve additional protections that unregulated sectors are not compelled to otherwise achieve, and do so immediately with each agricultural operation that participates. In contrast, what is unknown is the likelihood, parameters and timing for potential water quality regulations being imposed on agriculture. The presence of certified agricultural operations anywhere can only improve, never worsen, the circumstances of anyone or anything that relies on healthy water resources.

Opportunities and Challenges to Energy Development on a Ranch in Western Colorado—Developing a Model for Conservation and Mixed-Use

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Introduction

For the past decade, debates about how energy development affects wildlife have been primarily focused on public lands managed by federal land management agencies (Bureau of Land Management [BLM], Forest Service [USFS]). This is primarily because of the public trust doctrine that exists for public lands and fish and wildlife resources. However, it should not be overlooked that private lands consist of more than 60% of all ownership in the United States and therefore, by simple math, the majority of energy development that has taken place in the last 100 years, and that will take place in the next 50 years, has been on private lands. The recent boom in shale oil/gas development in North Dakota (Bakken), Colorado (Niobrara), Pennsylvania (Marcellus), and Texas (Eagle Ford) has refocused national attention on development of private lands and the differences existing between private and public extraction of energy. If one believes some pundits, energy development on private lands makes more money, is quicker to permit than similar development on public lands, and has less impact.[1] Although I won't argue the first two points, it should be pointed out that development is development regardless of land ownership, and fish, wildlife, and private landowners values are impacted by public processes (whether they are state or federal) that happen on and around every parcel of private land. The challenges and opportunities are similar but somewhat different, and we need an approach that integrates the needs of private and public lands into a landscape-level approach to energy development that minimizes impacts to values, whether environmental or social, and still allows for lands to be developed for energy.

Private landowners are able to implement policies and actions for energy development and the conservation of fish and wildlife on their lands that are often not currently being used on public lands. This is exemplified by the way actions that can avoid or minimize impacts are applied at local levels. Landowners are not restricted to actions that have been approved through land use plans or National Environmental Policy Act (NEPA) evaluations as federal agencies are on public lands. Landowners can increase surface disturbance buffers, adjust timing restrictions, require directional drilling, establish habitat mitigation, or make exclusive land use designations without adhering to multiple use mandates. This gives the landowner flexibility to work with the industry to develop mutually agreed-upon outcomes and increase the net benefit for conservation values. Energy development can provide a steady income source for landowners and can help keep ranches intact and provide conservation benefits long into the future.

In 2011, The High Lonesome Ranch (HLR) and the Theodore Roosevelt Conservation Partnership (TRCP) entered into a unique partnership to provide a demonstration or pilot project for responsible energy development at the landscape scale. This partnership is intended to provide a "proof-of-concept" demonstration project to show how energy development can be balanced with other values and maintain productive and profitable landscapes for fish, wildlife, water, ranching, recreation, and economics. This approach can then be exported to other places for others to come learn about what it takes to balance energy with other uses. The project will also allow for the recommendations made by TRCP and others about responsible energy development to be validated or changed based on real world application and implementation, the ultimate policy to management situation.

[1] (e.g., The Heartland Institute 14 March, 2012; http://news.heartland.org/newspaper-article/2012/03/14/study-feds-approving-fewer-oil-and-gas-leases).

The Partners

The TRCP (www.trcp.org) is working to promote responsible and balanced energy development that addresses the needs for fish, wildlife, and sportsmen and has developed specific recommendations on how to implement this goal through the "FACTS for Fish and Wildlife or FACTS" (www.trcp.org/assets/pdf/FACTSfor_web.pdf) principles. FACTS is an acronym which stands for Funding, Accountability, Coordination, Transparency, and Science, five key areas which are all too often not given enough attention during energy development. First developed in 2006 with TRCP's Fish, Wildlife, and Energy Working Group (partner organizations who have worked as a coalition led by TRCP on responsible energy development), the FACTS focused on recommendations for oil and gas development on public lands in the five Rocky Mountain States (MT, WY, CO, UT, NM; Sparrowe and Belinda 2007). In 2011, FACTS were revised and updated to address all types of energy development (wind, solar, etc.), be broader in application geographically, and provide more specific recommendations for the five principles. Now that policy recommendations are in place, on the ground implementation and demonstration are needed, which led to the TRCP/HLR partnership.

The HLR (www.thehighlonesomeranch.com) is a working ranch in western Colorado near DeBeque and has committed its efforts to demonstrate how working landscapes can be restored, conserved and managed for perpetual shared, sustainable, ethical, and profitable uses including energy development. The ranch consists of over 38,000 deeded ac and over 205,000 ac of public grazing and special use permits. Because of the way the areas was homesteaded with the valley bottoms becoming private lands and the rest becoming public, the HLR has stewardship and strategic access to a landscape of over 398 square miles (254,720 ac; Figure 1). The landscape is due west of intense development occurring near the Roan Plateau and southwest of the Piceance Basin. Currently, recent, yet limited, development has taken place on the landscape and there are less than 30 producing or shut-in oil/gas wells within the landscape surrounding the ranch.

The Concept and Approach

The HLR landscape-level approach will embrace the use of existing conservation tools, base management on existing scientific knowledge, integrate local stakeholders into decisions, and be proactive in conservation of key surrogate species of wildlife. Incentives for energy industry and other stakeholders will also be part of the project in order to provide more certainty in all operations, including energy development, but provide less conflict between user groups and therefore more cooperation in the management of the landscape. A landscape-level plan is similar to other approaches (geographic area plans, master lease plans, master development plans, etc.) and can be generally referred to as a "master plan." This approach requires new thinking and therefore new management commitments from all stakeholders including the federal and state agencies. HLR is requiring everyone to think about how development will be placed over a long period of time (30 years), zone certain areas appropriate for intensive development and for no energy development (even if it has already been leased), develop specific practices for the natural (fish, wildlife) and social (noise, visuals) resources that work for all stakeholders, develop the area from the valley bottoms through directional drilling thereby minimizing fragmentation and keeping landscapes intact, and developing a system for development that is flexible during the year rather than prohibiting development in the winter due to big game winter range restrictions (as long as there are efforts to increase the habitat effectiveness of the entire winter range).

This effort is embracing the use of existing conservation tools from federal agencies (Candidate Conservation Agreements with Assurances [CCAAs], Safe Harbor Agreements, Working Lands for Wildlife) and state agencies (Geographical Area Plans, Habitat Protection Plans, Voluntary Mitigation Plans) and new opportunities (mitigation banking, conservation credits) to address the needs of fish and wildlife while planning for energy exploration and production. The HLR also is working to develop a broad and diverse stakeholder group that can help dictate how energy development takes place on the landscape while conserving key focal species like sage grouse, mule deer, and cutthroat trout.

Currently, the HLR and stakeholders have developed a distinct geographic boundary which allows for "economy of scale" (not too big to be abstract, nor too small to make a difference) which is approximately 300,000 ac. The boundary was developed based on stakeholders' needs, local geography and the ability to manage the landscape for specific outcomes and objectives (wildlife, access, energy leases, etc.). As of early May 2013, the group is working on specific management practices that will be applied which are based on science but tailored for the specific landscape and need. There is an effort to determine which areas in the landscape are best suited for energy development regardless of land ownership and those areas which are not suited (go/no-go areas) and how each area would fit into the larger pictures. Incentives for the administration of permits and leases are being considered, which could vary from traditional administration approaches that include specific lease expiration, seasonal restrictions, permitting times, and others. These incentives are key to obtaining buy-in from energy companies and essential to making energy work at a landscape level. Without these incentives, a traditional approach is more than likely for the area. There are tremendous benefits for natural resources (net increase in functional habitats, net increase in populations), landowners (certainty in operations, increased income), and energy companies (increased access, more certainty in permitting), but require sacrifice on everyone's part.

Specific attention and efforts are being given to existing conservation tools provided by the federal and state agencies. The HLR is pursuing a CCAA with the U.S. Fish and Wildlife Service for the greater sage grouse that occupy the landscape. Combined with a potential CCA on adjacent BLM lands, this effort would protect and enhance thousands of acres for sage grouse and provide operational certainty for the ranch's grazing, energy, and recreation program, as well as industry companies working on federal lands in this landscape. Additionally, the HLR is exploring development of a Safe Harbor Agreement for the four listed plant species that are potentially found on the ranch which will further enhance our operational certainty and give some flexibility in the placement of infrastructure related to energy development. The HLR also began initial discussions with the Natural Resources Conservation Services (NRCS) and is applying for the newly developed Working Lands for Wildlife program in coordination with the CCAA for sage grouse, thus providing a 30 year commitment along with the ability to coordinate Farm Bill Act conservation programs and funding into the effort. At the state level, the HLR has begun negotiation of the implementation of a Geographic Area Plan (as approved in CO House Bill 1298) to coordinate lease activity, wildlife management, and permitting across multiple leaseholders on the landscape. This effort would be the first of its kind in Colorado and compliment the Voluntary Mitigation Plans that the HLR and other energy companies have with the Colorado Division of Parks and Wildlife. Later, in 2013, the HLR hopes to be a pilot project for a new program, the Colorado Habitat Exchange (http://enviroincentives.com/CO%20Habitat%20Exchange%20Overview.pdf), which will use market forces to address mule deer and sage grouse in northwestern Colorado. This effort will rely on mitigation banks and a conservation credit market to incentivize private landowners and energy companies to conserve habitats for these two species.

Moving Forward

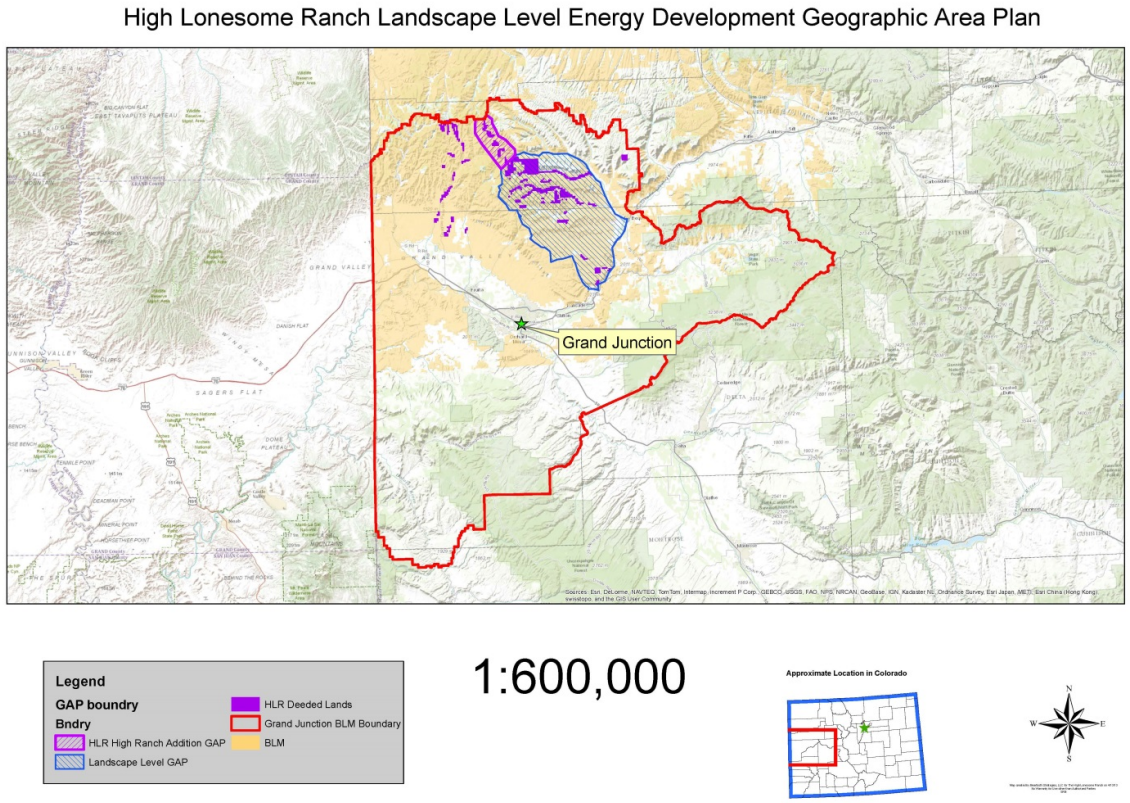
Challenges with traditional approaches to energy development from energy companies and federal and state agencies (BLM, USFWS, NRCS, Colorado Parks and Wildlife) have complicated plans for private lands. Current leases that are about to expire are forcing companies to propose development in sensitive areas that could be avoided, and are creating a potential drainage situation for HLR-owned minerals. Development is still being done lease-to-lease and wells are still being evaluated and permitted well-to-well. Because of the mixture of public and private lands, actions and timing prescribed by BLM will impact the key economic and recreation season for HLR and the noise, traffic, and other impacts will significantly affect the HLR's bottom line and threaten future operations. The impacts to the private property and landscape vision are not being considered because it is not commonplace in the production line approach used by BLM during the development of federal leases. The HLR is working through these challenges and documenting efforts so that they can be repeated and replicated on other private lands in

other areas. HLR and the stakeholders will continue to refine the approach by developing specific objectives and outcomes for natural resources and energy, working collaboratively with the BLM Grand Junction Field Office Resource Management Plan revision, developing specific practices that will avoid or minimize impacts, and being proactive in habitat management for sage grouse and mule deer. We also will be instituting research with cooperating universities to study our approaches and document response and success. We want to document our approach and outcomes to develop specific recommendations to policy (federal and state) so that this collaborative and landscape approach can be used to adjust the existing approaches for energy development. By working at the landscape-level with local stakeholders, embracing existing conservation tools, and being proactive we believe we can provide a working model of responsible energy development balanced with other values and uses. Better conservation practices can be achieved while providing more certainty to energy development and potential more funding for conservation and thereby increasing our domestic energy supply with less environmental impacts.

References

Sparrowe, R. D., and S. R. Belinda. 2007. Learning from experience: how to enhance the future for wildlife during prolonged energy development. Transactions of the 72nd North American Wildlife and Natural Resources Conference 72:53–64.

Figure 1. Map of proposed energy landscape project at the High Lonesome Ranch (HLR) near Grand Junction, Colorado. The red line defines the Grand Junction Field Office boundary and the HLR project boundary is outlined in blue.



Creating Sustainable Landscape Scale Outcomes in the Energy and Environment Intersection in the Southern Plains—Using Conservation Banks to Help Save the Lesser Prairie Chicken

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Introduction

As the United States accelerates development of clean and traditional energy sources across the Southern Plains states (Kansas, Colorado, Oklahoma, New Mexico, and Texas) through the introduction and deployment of new technologies, species such as the lesser prairie chicken (LPC; *Tympanuchus pallidicinctus)* whose numbers are already imperiled, are at risk of additional and unsustainable population losses through future habitat loss. A further challenge is an expanding human population that requires increasing amounts of food and fiber, which will also increase pressure on this landscape. Although a small number of voluntary industry conservation investments in recent years, totaling approximately $11 million of voluntary offsets for LPC and greater prairie chicken (GPC; *Tympanuchus cupido*) are noteworthy in Oklahoma and Kansas, other industry members have unfortunately not followed the lead. Federal and state educational outreach and landowner incentives have produced population trend reversals in only one state and have increased awareness about the LPC's plight in general. However, funding sources for these term-based programs and the level of accountability with landowners and long term government funding to insure proper management and monitoring is unlikely to be sustained with the current $17 billion federal debt in the United States Treasury.

To achieve landscape scale conservation success for the LPC, it is crucial that proven, for-profit mitigation solutions such as conservation banking be utilized as a major tool in any region-wide conservation plan contemplated for the species. Without conservation banking, the unfortunate losing equation of for-profit development interests competing with non-profit or government funded LPC conservation programs will perpetuate and likely secure the ultimate population demise of LPCs.

Common Ground Capital, LLC (CGC) is a small business species conservation banking company headquartered in Edmond, Oklahoma that started in April 2012. CGC focuses on the Southern Plains Region of the United States, and its primary species focus is on the LPC, with additional focus on the American burying beetle in eastern Oklahoma. The author serves as the principal for CGC and the group has a consulting team of biologists and land management specialists, as well as other consultants and legal entities that play a vital role in CGC's conservation banking endeavors. Here, I describe why voluntary efforts have not fully produced desired conservation outcomes, the importance of conservation banking, and a vision for future LPC conservation.

Voluntary Efforts Lessons Learned

In previous capacities, CGC has successfully delivered perpetually protected acres, at a large scale for both the LPC and GPC in the Southern Plains from significant investments from voluntary industry mitigation dollars**.** Over the course of the last seven years the principal of CGC has worked with a major wind developer, Energias de Portugal (EDP), and two major conservation organizations in Kansas (The Nature Conservancy of Kansas and the Kansas Ranchland Trust) to voluntarily offset habitat impacts for 13,000 acres for a wind project constructed by EDP in North Central Kansas (Table 1). An additional 23,000 acres (Table 1) have been conserved for two wind projects in Oklahoma enabled by Oklahoma Gas and Electric (OG&E). The Kansas project was a voluntary in lieu fee program structure that was thought to be a responsible course of action at the time. While significant accomplishments have been achieved on the ground, seven years after the agreement was executed, only 50% of the acreage (6,257 acres; Table 1) has been placed under voluntary conservation easements, which are intended to permanently offset the spatial habitat impacts to the GPC. This is a result of limitations of the voluntary

offset contract structure, which is payable over time with conservation investment caps on an annual basis, versus a lack of willing landowners which have been surprisingly plentiful.

In Oklahoma, two separate voluntary In Lieu Fee Projects were set up between OG&E and the Oklahoma Department of Wildlife Conservation (ODWC) at a cost of $9 million. Similar challenges with this program have been observed—a significant delay between the wind farm development impact occurring, and voluntary mitigation dollars hitting the ground to achieve conservation outcomes—albeit for different reasons. The ODWC initially led with success by acquiring over 20,000 acres of fee title acreage to expand two existing wildlife management areas in the state. A partnership with The Nature Conservancy of Oklahoma did not produce a single easement with private landowners for the balance of the funds. Ultimately, the balance of the funds was spent on a research program supported by the Secretary of the Environment's Office and a long-term lease with the State of Oklahoma's property to benefit LPC conservation. In total, over 30,000 acres have benefitted at some level from this program to offset the impacts from the two wind projects.

The reasons these voluntary models have not been successful in halting the demise of the LPC are multi-fold:

1. No other industry members followed the leads of these companies and organizations in either state or in adjacent states with LPC challenges.
2. While the acreage amounts may be impressive on the surface, there are no funds set aside to perform monitoring for LPC or GPC conservation outcomes or failures.
3. There are no dedicated funds or management plans to manage these properties for the sole or even primary benefit of the LPC or GPC, the only reason the funds were contributed.
4. The LPC and GPC were forced to "bear the risk" of targeted future conservation success after the development impacts occurred on the landscape and likely suffered a net conservation negative impact due to the many years of time lag between the development impact and the targeted conservation outcome.
5. A significant portion of the Oklahoma program was directed toward activities (e.g., research) that will not benefit the LPC in a meaningful time frame relative to the impact of constructing a wind farm.
6. While some level of avoidance was achieved in Kansas due to the developer cancelling leases in the Flint Hills in favor of moving the project to a lower quality habitat area in north central Kansas, no avoidance was achieved in Oklahoma as the projects were built in very high habitat quality.

What the Lesser Prairie Chicken Must Out-Compete

Over the years, CGC has benefitted from interacting with landowners across the range of the LPC to understand, in detail, what drives landowner decisions on the landscape. Figure 1 portrays a concerning challenge for LPC conservation efforts in terms of landowner income options on the landscape that are currently available. Even though this figure represent gross versus net revenue of income to landowners, the reality is that with increasing commodity and energy prices and decreasing funding for government conservation programs, this challenge is likely to worsen in the near future. In order for LPC conservation efforts to succeed, landowners must be able to achieve vastly superior economic returns from LPC conservation activities to achieve long term, systemic culture change on the landscape in the near term. Without having this economic victory with private landowners, the LPC will continue to be relegated to incremental income opportunities for landowners and will never be able to secure the necessary culture and mindset changes on the landscape to achieve a sustainable outcome. It is also critical that the huge dependence on term payment programs to landowners be checked and reduced in favor of more permanent conservation solutions. Permanent solutions, from conservation banking in partnership with land trusts and other NGOs, must increase in number to avoid the short term gains of term programs being lost once the revenue streams either run out or are curtailed in future years.

Voluntary efforts by state and federal agencies and non-governmental organizations to restore habitat that is un-fragmented and at sufficient scale will continue to play an important role in LPC conservation. However, I believe that in order to achieve truly sustainable outcomes for species that require large landscapes, the real cost of conservation must be internalized by industry development interests with existing, time and regulatory tested mitigation options such as conservation banks. Including conservation banks as a major tool in the LPC tool box, as well as avoiding or at least severely limiting development on the most critical habitats, is vital for the conservation of the LPC.

How Can Conservation Banks Help?

Conservation banks are the highest and most accountable conservation tools on the landscape, and using this model at scale is a key component to solving the LPC challenge (Figure 2). For development interests, conservation banks provide the necessary liability transfer, under either an endangered species listing or state range wide conservation plan scenario, which the industry needs to move forward with certainty for planned development activities. As detailed in the 2003 USFWS guidance (Guidance for the Establishment, Use and Operation of Conservation Banks; U.S. Department of Interior Memorandum, dated May 2, 2003), conservation banks are tools that can be used in a voluntary way (e.g., industry regional Candidate Conservation Agreement with Assurances with an industry or regional permit holder) in addition to a listing scenario. Internalizing the "real" cost of LPC conservation versus allowing the current dynamic of non-profit or subsidized conservation competing with for-profit energy and agricultural development is key to attracting financial investment at the scale necessary to adequately restore and conserve landscapes across the Southern Plains. Pursuit of landscape scale solutions with a heavy dose of perpetual protection is necessary to achieve both successes for the LPC and the transition of industry to a more responsible development model so that we can continue to harvest cleaner domestic resources which will be important to addressing energy security and climate change challenges that are in front of our society today.

Common Ground Capital seeks to achieve deployment of conservation banks at a scale previously not envisioned in the conservation banking or general wildlife conservation community. Up to five conservation banks totaling 100,000 acres across the LPC's five state range are currently in development (Figure 3). These projects will play a key role of achieving multiple stronghold areas for the LPC via creating landscape scale blocks of contiguous habitat of 10 to 20,000 acres in size, permanently protected with financial assurances of long term ecological performance for the LPC. As of March 2013, CGC has commitments for 74,000 acres of this plan.

Numerous benefits to private landowners and sportsman will accrue if the LPC is saved via bolstered habitat for mule (*Odocoileus hemionus*) and white-tailed (*Odocoileus virginianus*) deer, game birds such as bobwhite quail (*Colinus virginianus*), and other species of wildlife. Conservation banks would provide significant funding sources to landowners that can compete with traditional energy payments and farming and ranching activities in addition to increasing hunting lease revenue by getting healthy populations of game animals back on the landscape via improved habitat.

Conclusions

Time is running out for the LPC. A necessary question that all parties involved in the current Endangered Species Act listing process must answer is, "Are we willing to use the information from lessons learned, look beyond conventional 'turf' battles between the states and the federal government and industry and wildlife conservation interests to create an informed and state of the art regional conservation plan that will provide the best chance of saving and restoring this species OR will we let the predictable business as usual politics and posturing win the day because *change is hard*?" The LPC is much bigger than just another tough challenge for yet another imperiled species. How we address the LPC has huge implications for how we will handle listing decisions such as the greater sage grouse (*Centrocercus urophasianus*) and the other 200+ species that the USFWS must make listing decisions on

in coming years. Even broader is how the United States will value its ecosystems and what services it will provide to its citizens going forward. We cannot continue to extract our natural resources in a manner that does not properly value the ecosystem services that we have traditionally assumed to be "free"; otherwise, an ultimately unsustainable outcome for the human population will become our main challenge.

Table 1: Summary of voluntary offset achievements by Common Ground Capitol for greater and lesser prairie chickens.

GPC Acres Perpetually Protected (Kansas)	6,257
LPC Acres Perpetually Protected (Oklahoma)	23,700
# Regulatory Approvals Received	4
# Landowners Committed	11
# of Supporting Stakeholders Engaged	8
Investment secured from Corporations	$11,000,000

Figure 1. Lesser prairie chicken payments (yellow line representing Natural Resource Conservation Service [NRCS] payments for conservation/acre) compared with traditional landowner income options in remaining critical habitats for this species in Kansas.

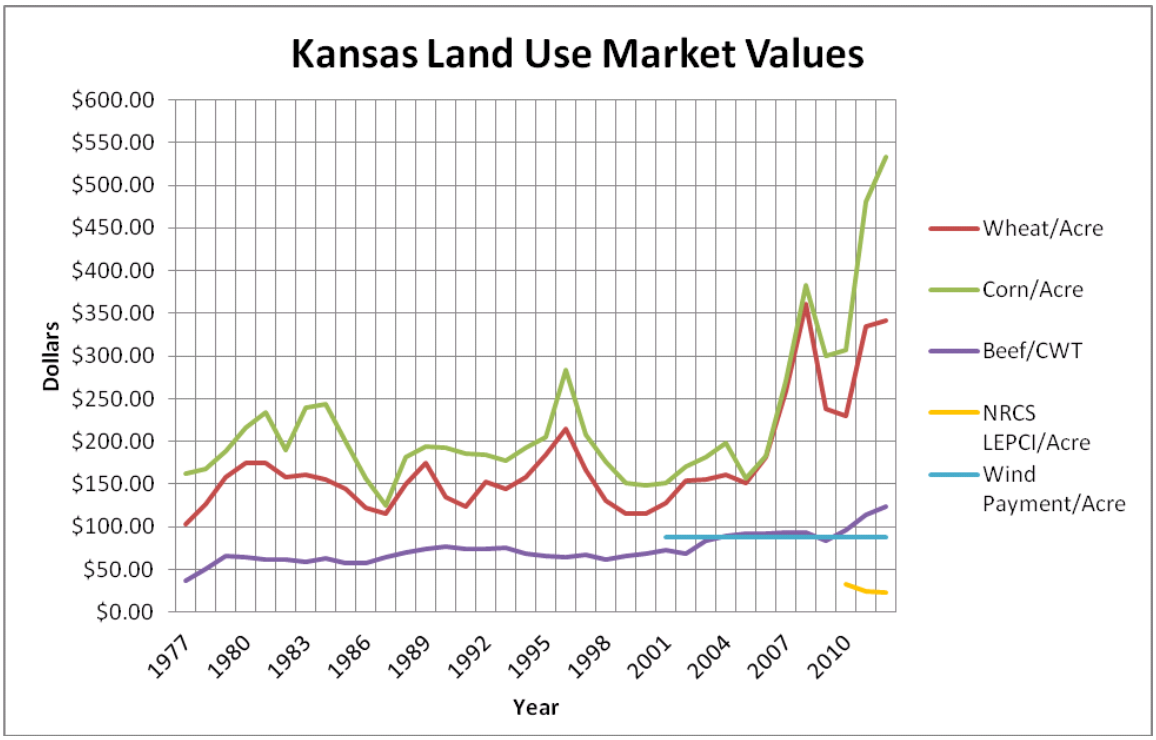


Figure 2. Conceptual model of conservation banking and successful outcomes for the lesser prairie chicken (LPC) using a hypothetical example with wind facility development.

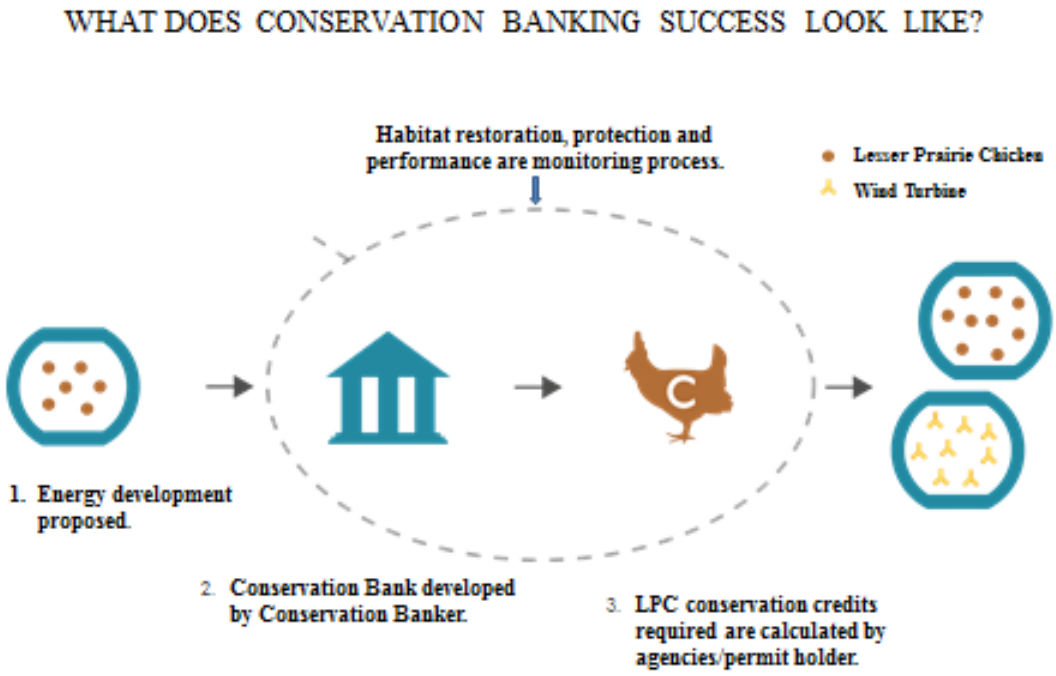
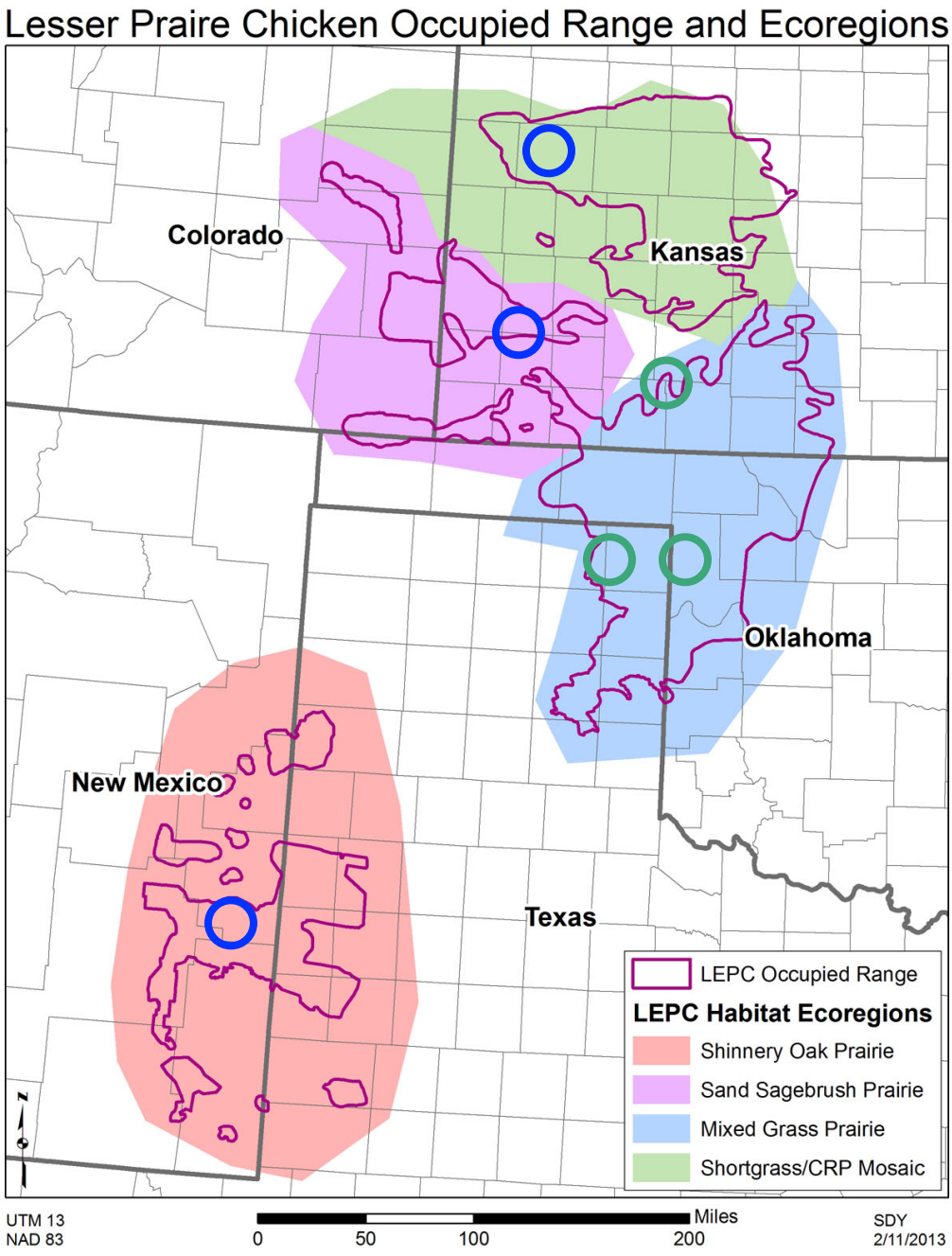


Figure 3. Targeted (blue circle) and secured (green circle) conservation bank locations within the range of the lesser prairie chicken. The goal is to have up to six conservation banks approved by the USFWS for 100,000 ac by September 2013.



The Freeway of Water: How Federal Policies Are Funding the Draining of America's Heartland and Jeopardizing the Future of American Agriculture and Fish and Wildlife Resources

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In November 2012, PBS stations across the country aired the much-anticipated Ken Burns documentary, "The Dust Bowl." This film told viewers the story of the profound impacts of aggressive agricultural practices underwritten by, and in some cases encouraged by, the federal government. The 1930s-era footage in black and white and the profound stories of the now-elderly survivors who witnessed the Dust Bowl first-hand gave the impression that the documentary was telling the story of days gone by, of something that could not happen again.

This past December, Minnesota Public Radio ran a piece on the plowing up of a pioneer cemetery in western Minnesota; the cemetery had survived nearly a hundred and fifty years, but alas, it could not survive the era of eight dollar corn. The article went on to tell the story of other prairie cemeteries that had been bulldozed to make way for the seed drill; in some cases, headstones have been pushed into the nearest ditch. If some farmers are willing to push aside cemeteries to plant corn, you can imagine that the pressure on grasslands and wetlands must be extraordinary. Indeed, recent studies demonstrate that conversion of grasslands and wetlands to cropland is occurring at an alarming rate (Claassen et al. 2011, Wright and Wimberly 2013).

Why is Corn so Expensive?

We probably need some historical perspective on corn prices before we get much further with today's discussion. Between 1960 and 2007 (a span of time in which this nation saw a man walk on the moon and the advent of the Internet), corn traded reliably somewhere between $1 and $3 per bushel. In only three of those 47 years did a bushel of corn trade on the open market for an average of more than $3, and never for more than $4. In 2012, corn averaged an astounding $6.67 per bushel. And, on March 26, 2013, the price of corn was $7.33 per bushel.

In recent years, persistent drought has stunted production and, in other years, flooding has kept farmers out of the fields at planting and harvesting time, impacting supply. At the same time, a federal mandate for corn ethanol and a hungry livestock industry have had a powerful upward impact on the demand side. But regardless of the factors at play, commodities this expensive alter the paradigm of agricultural economics, and assumptions about what farmers do and why they do it have been thrown out the window. We are now seeing farmers forgoing even the most basic crop rotation and instead planting ten years of consecutive corn. Every acre is being made available for row crop production. Fencerows, hedgerows, cattail sloughs, windbreaks, shelterbelts, all have become speed bumps in the ramp-up for increased acreage. Many farmers are dismissing conservation programs as uneconomical and outmoded, opting instead to bring acres that have been retired for a decade or more back into intensive production.

In the past, under more typical market conditions, wetlands and grasslands were deemed too unproductive to make the work of discing, planting, and harvesting meager crops worthwhile. The financial risk of tilling these so-called marginal acres far outweighed the likelihood of a reasonable return. So instead of being plowed, these acres were enrolled in conservation programs, made accessible to hunters, and were left to be productive in a more traditional sense, much to the benefit of fish and wildlife resources. But $8/bushel corn, combined with the very generous incentive provided by the federal crop insurance program, have started to turn what were once "marginal lands" into tidy, government-subsidized, rows of cash, ripe for the harvest.

Why Should We Care About Conservation Compliance and Crop Insurance?

Nearly every farm program the federal government offers requires farmers and landowners to be "conservation compliant." It is easy for a farmer to meet this minimum threshold; by not draining wetlands and by implementing a conservation plan to reduce erosion on highly erodible lands, a producer can easily achieve conservation compliance, and thus get access to a slew of federal farm benefits. Why does the federal government require conservation compliance for most farm programs? Simply put, accountability: before a farmer receives generous taxpayer-funded benefits, he or she must first take minimal steps to protect the environment. Conservation compliance applies to commodity programs like direct payments and conservation programs like the Conservation Reserve Program (CRP); but most does not mean all. Significantly, since 1996, conservation compliance has not applied to what is now the single largest form of farm support, the federal crop insurance program.

Federal crop insurance as we now know it came to life in the early 1980s with the passage of the Federal Crop Insurance Act. Also, in 1985, with the advent of conservation compliance, crop insurance did in fact require producers to be conservation compliant. However, in 1996, in an attempt to increase the popularity of crop insurance, in order to wean farmers off of costly ad hoc disaster assistance, Congress decoupled insurance from conservation compliance; it has remained that way ever since.

What Does This all Mean?

Unfortunately, the aforementioned policies yield practices that are not conducive to conservation of fish and wildlife habitat and the consequences are critically important. Farmers can drain wetlands, convert native sod, and till highly erodible lands, and at the end of the day they will still qualify for an average 60% taxpayer subsidy of their crop insurance premiums. That's right: the average crop insurance policy is 60% subsidized by the federal taxpayer with virtually no strings attached. Crop insurance now comprises the vast majority of the federal farm safety net. Ninety percent of corn, soybean, and wheat acres are covered by a federally subsidized crop insurance policy, and yet there is no accountability that in exchange for this generous subsidy, farmers are doing right by the environment. The economic pressure to convert is already immense, and the federal crop insurance program covers the lion's share of the risk associated with planting marginal acres. Thanks in large part to crop insurance, conversion of grasslands and wetlands now appears to be a foolproof investment from the farmer's standpoint.

And what is our investment in the federal crop insurance program getting us, the American taxpayer? For one thing, huge expenses; for the 2012 crop year, costs to the public from crop insurance could reach as high as $17 billion (Des Moines Register 2013). It is also costing us our grasslands, with some scientists estimating an annual grassland loss rate of up to 5.4% (Wright and Wimberly 2013). Five percent might not sound like much, but it is important to remember that it is 5% of what we have left, and small percentages over time quickly add up. It is also costing us wetlands; the US Fish and Wildlife Service estimates that 1.37 million acres of wetlands are at high risk of drainage in the eastern Dakotas alone.

Federal crop insurance is working at cross-purposes with federal conservation programs. As the CRP and Grassland Reserve Programs seek to protect marginal lands, crop insurance incentivizes plowing them up. By relinking crop insurance and conservation compliance, and making sure that if farmers are seeking federal support that they are not draining wetlands, busting sod, or wantonly tilling highly-erodible lands, we can actually strengthen crop insurance, by focusing it on those most traditionally productive acres.

There is a lot of opposition to re-linking crop insurance and conservation compliance in Congress and in the commodity organizations. Much of that opposition is based on misinformation—the notion that a major weather event could kick a farmer out of compliance virtually overnight, or that if found out of compliance, farmers will lose their ability to buy crop insurance altogether. But conservation compliance is no regulation; it is merely a covenant with the American taxpayer. If a farmer chooses not to be

conservation compliant, he will also choose to bear the risk of his or her decision. Conservation compliance is fair for the farmer, fair for the American public, and frankly, it isn't much to ask.

The Next Dust Bowl?

The simple fact of the matter is that we are writing the script for the next Dust Bowl on the landscape right now. Unless conservation compliance is relinked with crop insurance, then the next great "plow up" will continue unabated. It parallels with the first great plow up that resulted in The Dust Bowl, and is not an encouraging or desired outcome. Both eras are characterized by high commodity prices related to government created demand, prolonged drought, and of course, a huge rush to plow every available acre with little regard for the long term. The first Dust Bowl was an environmental catastrophe with economic roots. The question is, are we writing the sequel to the Dust Bowl and are we making the same mistakes?

Federal agricultural policy, through shrinking conservation programs and a farm safety net that increasingly lacks environmental accountability, is helping to set the stage for yet another environmental and economic catastrophe. In addition to federal farm policies, persistent extreme weather events, from droughts to floods, add immeasurably to the pressure on the American farm. Our federal farm policy was largely written in the 20th century for 20th century agriculture. The paradigm has shifted: record high crop prices have led to record high land values across farm country; and it is time farm policy reflected the reality of 21st century agriculture: high prices, high volume, and high impact. American agriculture continues to feed the world, but for how long, and at what price? These are questions largely being ignored by farm policy makers.

No one should think that re-linking conservation compliance and crop insurance is a panacea; it is not. The challenges of agricultural land conservation in the future are much too complex for simple solutions. But relinking compliance and insurance is a good first step in the right direction towards balancing the needs of production agriculture with the needs of our natural resources.

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The Future Conservation Reserve Program: Maintaining Benefits from a Reduced Size CRP Program

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Background

Authorized in 1985, the USDA's Conservation Reserve Program (CRP) has provided millions of acres of land that reduced erosion, improved water quality and benefited numerous species of wildlife across the country. The CRP has, by many measures, become known as USDA's most successful conservation program through aiding soil, water, and wildlife resources, farmers and landowners, sportsmen and sportswomen, and society as a whole. The peak enrollment of the program came after the 2002 Farm Bill with an acreage cap of 39.2 million acres. By 2008, the authority was reduced to 32 million acres and draft provisions of the 112th Congress suggested the cap be as low as 24 million acres (U.S. Department of Agriculture 2013).

Here, I discuss the consequences of the authorization of possible reductions to one of our nations' most successful proven programs. To start, let me state that discussing any reduction below the currently authorized 32 million acre CRP goes against my grain as a wildlife resource professional—and of many others here today, I'm sure. A number of years ago, wildlife professionals participated in a regional needs assessment process conducted and published by the Wildlife Management Institute (Wildlife Management Institute 1995). That study documented the need for a CRP of nearly 60 million acres. Unfortunately, today's fiscal environment and other factors including skyrocketing land and commodity process are driving CRP downwards. In fact, most proposals that worked their way through the previous 112th Congress reduced CRP to 24 million acres.

For nearly 20 years, more than 30 million acres of CRP was enrolled (U.S. Department of Agriculture 2013). Today's enrollment has dropped to 27 million acres, with another three million expiring by September 30, 2013. CRP reductions are especially concerning in the northern prairies region of the country. In the states of Iowa, Kansas, Minnesota, Montana, Nebraska, North Dakota, and South Dakota, more than five million acres are expiring between 2012 and 2014 and reenrollments are not keeping pace.

CRP is Critically Important for Wildlife and the Environment

The benefits of CRP are well documented and include reduced runoff water, soil erosion and sediment delivery, improved fish and wildlife habitat, better water quality, and carbon sequestration (Heard et al. 2000, Haufler et al. 2005, 2007, Dung 2012). For example, Neilson et al. (2008) found a positive relationship between ring-necked pheasant counts and routes with higher percent CRP herbaceous vegetation within 1,000-m of survey points. The loss of CRP and especially larger tracts and fields is troubling to species needing larger blocks of cover for production including waterfowl and prairie grouse (Riley 2004). Loss of these larger blocks also is of concern to small rural communities and to hunters that depend on access to fields for hunting. Targeting of CRP can be useful to benefit edge species including pheasants and quail that can thrive from smaller blocks. Let me discuss three proven existing practices that can be useful to help maintain CRP wildlife benefits.

Practices to Help Weather a Smaller CRP

Upland buffers for wildlife, known as CP-33s, is a great practice for quail and pheasants. Buffers, which adjoin forested cover, also provide an economic boost for landowners where traditional commodity crops fail to compete; thus providing a wildlife friendly alternative that helps boost net income per acre.

State Acres for Wildlife Enhancement (SAFE), also known as CP-38s, has proven to be an effective practice that can benefit wildlife while assisting farmers and landowners by squaring up fields, providing alternatives to hard-to-plant small areas or riparian buffers that can be challenging to farm. The new pollinator practice (CP-42) can be a win-win for wildlife and for agriculture. Pollinator habitat equates to great brood habitat for pheasants, quail, and other ground nesting birds. These are all proven practices that may be useful to assist in maintaining wildlife benefits from reductions to CRP.

Looking back over the history of CRP, early years were dominated by monoculture covers including brome, crested wheatgrass, and fescue. By the mid to late 1990's, more wildlife-friendly diverse covers of warm season native grasses and forbs were established. State wildlife agencies and other partners have been instrumental in supporting these changes, particularly the state of Nebraska, which was among the first to encourage these more wildlife friendly covers. Current management practices are ineffective and sporadic and mid-contract management practices (MCM) are poorly applied and supported. In a future reduced CRP, better application of MCM is critical to maintaining wildlife benefits. A revision to MCM is one of several items that should be focused on by CRP stakeholders. In southern regions MCM needs to be conducted much more frequently than the name implies (yet another reason justifying the need for change). Others include:

- Environmental Benefits Index or EBI—is there a better way to rank offers?
- Adjusting rental rates, cost-share, and the $50,000 payment cap to keep CRP competitive
- CRP delivery systems—can we develop a better system to replace occasional general signup?

There may be other approaches yet to be identified, and it will be important for wildlife professionals to think outside of the proverbial box and expand partnerships in the emerging era of a reduced CRP.

The Future

As CRP prepares to celebrate nearly 30 years as "America's Wildlife Legacy" program, policymakers should gather to evaluate CRP successes and failures and plan for the next generation of a successful CRP. There is no question CRP has tremendous benefits for farmers and landowners, sportsmen and sportswomen, natural resources and the environment. However, we need to be prepared for doing more with less. Substantial reductions in CRP will result in consequences for soil, water, and wildlife management. Efforts to minimize losses of benefits will be in the form of more targeted acres of the continuous side of the CRP program, such as various buffer practices including State Acres for Wildlife Enhancement and Upland Buffers for wildlife, the Conservation Reserve Enhancement Program, and the latest practices focusing on pollinators. Maintaining larger tracts of CRP critical to species including prairie grouse, waterfowl, and for hunting related benefits to rural communities will be especially challenging. Another important consideration of CRP is that we need to keep it as productive as possible for wildlife, which in many cases means periodic management to set back habitat succession. As a wildlife community of organizations and agencies, we need to find ways to keep quality habitat on the landscape, and in some cases on a more permanent basis. Current and future generations of sportsmen and sportswomen, farmer and rancher stewards of the land, as well as all those who care about a healthy and sustainable agricultural landscape and strong rural economies, stand to benefit from our actions.

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Meeting the Wildlife Challenges of Changing Private Landscapes from Energy and Agricultural Development

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In a worldwide economy with a growing population, the needs for energy and for growing food will continue for the foreseeable future. That growth will continue to pressure private lands to provide energy and increase agricultural production in the United States. It is also creating new challenges for natural resources, especially water, and fish and wildlife habitat and populations on private lands. While it is easy to lament the woes of these challenges and the impacts they may have, our challenge as a conservation community is to move past grieving the losses, accept these new challenges, and seek opportunities to meet conservation needs. As Thomas Edison said, "*Our greatest weakness lies in giving up. The most certain way to succeed is to always try just one more time.*"

Another quote by Thomas Edison helps identify the solution: "*Opportunity is missed by most people because it is dressed in overalls and looks like work."* The conservation community must embrace this opportunity, and look to both policy and management approaches to meet the challenges. The responsibility lies on us to look out for both the needs of the fish and wildlife we manage, as well as the hunters, fishers, and outdoor recreationists that visit private lands in pursuit of their outdoor activities. We need a suite of tools, including the regulatory and policy tools of the past, as well as new tools that meet current and future needs of landowners, to be successful in achieving balances that meet the needs of landowners, land use, and fish and wildlife on private lands.

The suite of tools we need to consider was represented in this session from a variety of speakers, including the need to provide regulatory certainty to both landowners and agencies to improve water quality in Minnesota, balance oil and gas development and conservation values on a ranch in Western Colorado, and sustain landscapes for lesser prairie chickens and energy development in the Southern Plans. In the 21st century, fish and wildlife conservation requires that we consider tools including Candidate Conservation Agreements with Assurances and Safe Harbor Agreements just as important in working with private landowners as discussions of biological habitat conditions or carrying-capacity for populations of interest.

In farm country across the United States, federal farm policy has been a long-standing driver for changes in land use. A shift in farm policy is underway to reflect the reality of 21st century agriculture. As that shift plays out, the conservation community must be at the table to provide the suite of tools that provide solutions for landowners to meet their financial and conservation goals. The shift in support for major crops from payment programs to crop insurance creates new concerns that we may lose basic protections for soil productivity, water quality and quantity, air, and fish and wildlife habitat on our nations farm and ranch lands. The changes bring uncertainty to conservation compliance requirements that protect soil, native sod, and wetlands; raising concerns of losing conservation gains that have been made since 1985. As well, an uncertain future will likely require changes in programs like the Conservation Reserve Program, which has become a cornerstone for creating habitat for farmland and grassland wildlife and providing benefits to upland birds, waterfowl, and big game across the country. The solutions for 21st century agriculture will require review and modification of our past efforts, as well as creativity to develop new tools to meet landowners and fish and wildlife conservation needs.

As we seek balance between fish and wildlife resources on private lands with food and energy production in the 21st century, we will need to be innovative and creative to develop 21st century tools. It is also important to point out another underlying, consistent message from the presenters: we really are in this together as conservation community. Success in the 21st century requires that we work and cooperate with businesses, non-governmental organizations, federal and state agencies to meet conservation goals. It requires that we look at new problems (and old ones) in new ways, from new angles, and embrace creative and adaptive approaches while engaging broad conservation partnerships. We need to be results-

oriented, focusing on positive outcomes and applying evaluation to continue to improve our effectiveness of our processes used to deliver conservation and the impacts to habitat and populations.

As we strive to meet new conservation challenges on private lands, we should keep in mind some sage advice from Aldo Leopold: *"We shall never achieve harmony with land, any more than we shall achieve absolute justice or liberty for people. In these higher aspirations, the important thing is not to achieve, but to strive."* We cannot sit on the sidelines silently watching the changes on landscape and lamenting within our community about the negative impacts on natural resources and fish and wildlife. We need to raise awareness of the concerns and work together to strive for, and hopefully achieve, a balance between energy and agricultural development with fish and wildlife conservation on America's private lands.

Registered Attendance

Alabama

David Hayden

Alaska

Aleya Brinkman, Christopher Estes, Lisa Evans, Craig Fleener, Maria Gladziszewski, Rick Halford, Kelly Hepler, Elizabeth Neipert, Douglas Vincent-Lang

Alberta

Deanna Dixon, Dave Duncan, Pat Kehoe

Arizona

Chris Cantrell, Loren Chase, Jon Cooley, Doug Cummings, Carolyn Enquist, Joyce Francis, Scott Lavin, Janet Lynn, James Odenkirk, Mike Rabe, Esther Rubin, Dawn Stiver, San Stiver, Hannah Telle, Kellie Tharp, Bill Van Pelt, Donna Voyles, Larry Voyles

Arkansas

Dick Baxter, Marilyn Bentz, Ricky Chastain, Eric Devries, Allison Fowler, David Goad, Jim Goodhart, Donald McKenzie, Jennifer Sheehan, Matthew Warriner

British Columbia

Wini Kessler

California

Mark Biddlecomb, Kirsten Christopherson, Dena Emmerson, Kylie Fischer, Geoffrey Geupel, Mark Henelly, Bridgette Kirk, Glenn Olson, Jeff Opdycke, Eric Petlock, Craig Potter

Colorado

Ed Arnett, Tim Baumann, Gary Berlin, Chad Bishop, Laura Bishop, Rick Cables, Larry Clark, John Cornely, Thomas DeLiberto, Matthew Dunfee, Jeffrey Green, Steve Hall, Noe Marymor, Craig McLaughlin, Kacie Miller, Miranda Mockrin, Ken Morgan, Gaspar Perricone, Rebecca Ralston, Terry Riley, Robert Skorkowsky, Jeff Ver Steeg, Tammy VerCauteren, Noreen Walsh, Madeleine West, Gary White, Kenneth Wilson

Connecticut

Jim Curcuruto, William Hyatt, Richard Jacobson, Lawrence Keane

Delaware

Eugene (Greg) Moore, Doug Tallamy

District of Columbia

Bryan Arroyo, Carol Bambery, Michael Begier, Andrew Bird, John Bloom, Hannibal Bolton, Caroline Brouwer, Douglas Burdin, Gregory Butcher, Mitch Butler, Sally Butts, Gabriela Chavarria, Arpita Choudhury, Jeremy Clare, Carrie Clingan, Bridget Collins, Antoinette Condo, Tammy Conkle, Bill Creighton, James Currie, Sabrina Dadrian-

Kassabian, Josh deLacy, Laura Donahue, Matt Eckert, Naomi Edelson, Daniel Evans, Alice Ewen, Jerome Ford, John Frampton, Tom Franklin, Gary Frazer, David Gagner, Nancy Gloman, John Goss, Marcus Gray, Estelle Green, Dwight Guynn, Sally Guynn, Deborah Hahn, Megan Haidet, Hal Hallett, Mark Humpert, Gary Kania, Spencer Kimball, Jim Kurth, Olivia Kwong, Anne Law, Sara Leonard, Jim Lyons, Laura MacLean, Timothy Male, Barbara Martinez, Charde Martinez, Tara Meadows, Matt Menashes, Tom Mendenhall, Martin Mendoza, Kellis Moss, Jared Mott, Priya Nanjappa, Angela Rivas Nelson, Judy Niethamer, Kevin O'Donovan, Peggy Olwell, Susan Paul, Paige Pearson, Mary Pfaffko, America Pintabutr, Debbie Pressman, James Ramakka, Ron Regan, Paul Ries, Ed Roberson, Ryan Roberts, Jessica Rubado, Ashley Salo, Jen Mock Schaeffer, Candace Schulz, John Schulz, Anna Seidman, Melissa Simpson, Grant Sizemore, Steve Small, Stacy Small-Lorenz, Dean Smith, Kirsten Smith, Stacia Stanek, Heather Stegner, Michelle Tacconelli, Whitney Tawney, Gary Taylor, Amy Thompson, Rebecca Turner, Jeff Underwood, Allison Vogt, Phil Walker, Geoff Walsh, Taldi Walter, Leslie Wheelock, Bryant White, Kimberly Winter, William C. Woody, Jennifer Wyse

Florida

Noreen Clough, Diane Eggeman, Ann Forstchen, Elsa Haubold, John Hayes, Lisa Marshall, TJ Marshall, Jessica McCawley, Cortney Mycroft, Rick Roberts, Eric Sutton, Nick Wiley

Georgia

Greg Balkcom, John Fischer, Dan Forster, Carrie Givens, Dennis Krusac, Reggie Thackston, Mark Whitney

Idaho

Larry Fischer, Nathaniel Gillespie, Virgil Moore, Tim Murphy, Kerry Reese, Nancy Reese, Rex Sallabanks, Mike Schlegel, Gregg Servheen

Illinois

Mitchell Cohen, Marc Miller, Greg Mueller

Indiana

Mitch Marcus, Jon Marshall, Adam Phelps, Mark Reiter, John Tomke

Iowa

Todd Bishop, Kim Bogenschutz, Todd Bogenschutz, Chuck Corell, Dale Garner, Barb Gigar, Katy Reeder

Kansas

Robin Jennison, Joe Kramer, Rob Manes, Mike Mitchener, Doug Nygren, Keith Sexson, Matt Smith, Christopher Tymeson

Kentucky

Ron Brooks, Margaret Everson, Jonathan Gassett, Darin Moore, Karen Waldrop

Louisiana

Jimmy Anthony, Mike Brasher, John Jackson III

Maine

James Connolly, Henning Stabins

Manitoba

Michael Anderson, Rick Baydack, Greg Siekaniec

Maryland

Paul Baicich, Lowell E. Baier, Laura Bies, Janet Bucknall, Heather Coll, Stacey Evans, Rachel Golden, Bill Harvey, Bob Johnson, Patrice Klein, Donald MacLauchlan, Patrick Madorin, Bernard Marczyk, Steve Meyer, Wendy Morrison, TJ Myers, Margaret O'Gorman, Derek Orner, Terra Rentz, Tim Richardson, Dan Sherman, Angela Somma, Beth Strommen, Lee Ann Thomas, Galen Tromble, Janet Whaley, Ken Williams

Massachusetts

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Nevada

Alison Cockrum, Laura Richards

New Brunswick

Mike Sullivan

New Hampshire

Glenn Normandeau, Stephen Perry, Judy Stokes Weber, Steven Weber

New Jersey

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New Mexico

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Newfoundland

Shane Mahoney

North Carolina

Charles Brown, David Cobb, Gordon Myers, Sara Schweitzer

North Dakota

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Nova Scotia

Randy Milton, Mike O'Brien

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Ontario

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Wyoming

John Emmerich, Robert Hanson, John Kennedy, Mark Konishi, Brian Nesvik, Scott Talbot, Thomas K. Ryder