

**Issues in the Northern Forests:  
Conservation & Accountability**

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*Introduction*

This morning's field trip took you to a couple of the most spectacular places in North America: the Boundary Waters Canoe Area and Lake Superior. I've been to both many times, but I still wish I had been along. Both places are special and important for many reasons.

Lake Superior is the largest freshwater lake in the world. It is the headwaters of the Great Lakes which contain 20% of the freshwater on Earth. The core temperature of Lake Superior is in the low 40's and because of its size the temperature only varies a few degrees from winter to summer. If you don't believe me, I dare you to go for a swim. I assure you it will be a very quick dip. It is said that "Lake Superior never gives up its dead." It's a place where the physical forces of nature still rule.

The beauty of the Boundary Waters is second to none and I know those of you who saw it for the first time this morning are in awe. It is the epitome of wild places, the home of wolves and loons, a place of subzero winters and deep snow—a place where mankind can, at least spiritually, return to our prehistoric roots.

The history of the Boundary Waters is fascinating. Bud Heinselman's book is excellent: *The Boundary Waters Wilderness Ecosystem*. I recommend it. Bud was a Forest Service research scientist and protector of the Boundary Waters. He had a greater personal and scientific knowledge of the Boundary Waters than anyone. Here's how he felt about this magical place:

“Babbling brooks, silent rivers, thundering rapids, waterfalls and shimmering lakes cast their spell over me. I fell in love with the north woods as a child in Duluth.”

A little known fact about the Boundary Waters is that most of the conservation heroes of the last century had a hand in protecting this magical place. Among them are Teddy Roosevelt, Christopher Andrews, Gifford Pinchot, Arthur Carhart, Aldo Leopold, Bob Marshal, and Sigurd Olson. I was also struck by how many of the early conservation battles and forward-thinking conservation policies involved the Boundary Waters. Here are just a few examples:

- 1891: Itasca State Park was established to protect old growth white and red pine forests
- 1909: the establishment of the Superior National Forest
- 1919-1922: Arthur Carhart developed a proposal for a canoeing area
- 1923-1926: a controversy over road building erupted and Forest Service Chief William Greeley ordered the first roadless area inventory
- 1925-1934: a fight over a power dam occurred
- 1938: the Forest Service established the Superior Roadless Primitive Area
- 1941: the Forest Service established its first no cutting areas
- 1942: the Forest Service established the Lac La Croix Research Natural Area
- 1949: President Truman established an airspace reservation to protect solitude
- 1964: Congress included the Boundary Waters Canoe Area in the National Wilderness Preservation Act and it became the first federally designated Wilderness area
- 1971: Congress designated the Voyageurs National Park
- 1975: Secretary of Agriculture Earl Butz banned snowmobiles

This Bush Administration has rolled back the snowmobile ban in Yellowstone. Up until the last couple of decades, Republican Presidents were leaders in conservation. How times and political parties have changed.

Security is the centerpiece of the Bush Administration’s policies. The President has requested over \$100 billion for national and world security and we have the new Homeland Security Agency. Security is a central issue in this year’s Presidential campaign.

National security is critically important. We all want to be free and secure within our borders and we want the world to be a more secure place for all humanity. But aren't we making a mistake viewing threats to our security only in terms of terrorism, chemical weapons and weapons of mass destruction?

Yes, these threats are real, but they're not our only threats. There are other threats to our long-term security – threats to the air we breathe, the water we drink and threats to the long-term health of the land – threats that are as real and as potentially threatening to the well-being of American families as those associated with dictators and desperation.

To give you a sense of what I am talking about, let me talk for a minute about Iraq, the place that has dominated the world news the past year. Iraq was once home to ancient civilizations centered along the Tigris and Euphrates rivers and home to Mesopotamia, one of the great cradles of civilization and the biblical location of the Garden of Eden. The region, also part of the Fertile Crescent, was lush agricultural land between 2,000 and 10,000 years ago, the birthplace of agriculture.

But today, as we have seen on the television newscasts, the region is anything but fertile or lush, due in large part to environmental mismanagement, improper agricultural practices and the misuse of water, soils, and vegetation over the millennia. Today, the once great civilizations that sprouted from this region are visible only through the ruins they left behind. Too many people pushed the land beyond the limits of sustainability for too many centuries.

Unfortunately, the story of ancient Iraq is repeating itself today as the world faces a multitude of environmental threats: fertile soils are being washed away and becoming too salty to support agriculture, precipitation regimes are changing, water tables are falling, lakes and streams are drying up, and grasslands and former forests are slowly transforming into deserts.

Even in the United States, as we work feverishly to secure American families from the threat of terrorism, we are facing unparalleled environmental threats to our long-term security, securing the long-term health of the land here at home.

So now, in the name of security and securing the health of the land, I'll talk about just a few of the major problems facing Lake Superior, the Boundary Waters and our northern forests.

First, I must confess that I have a bias and basic belief: **all wealth and quality of life ultimately come to us from each other and from the land—the soil, water, air.**

## **1. Water**

The United Nations Economic Commission recently has warned of a looming water crisis. It stated two in three people will face water shortages by 2025. Mismanagement of existing water resources, population growth, and changing weather patterns are the primary causes.

Water is already a volatile issue in our country. In the arid Southwest, the Klamath Basin and the Ogallala Aquifer supplies are already badly depleted. The bottom line is there isn't enough to go around.

Closer to home, the Great Lakes contain 95% of the U.S. fresh surface water. Yet in the Chicago metropolitan area, mayors of the four larger suburbs have said they felt water was their biggest issue.

Just to the south in Wisconsin, named for its beautiful waters, less than 7 percent of its waters are free from pollution. In urbanized areas, arsenic levels are rising because groundwater is being withdrawn faster than nature can replace it. More than 3,500 dams alter stream flow and halt fish migration across the state.

Here is an excerpt from an article that appeared in the Milwaukee Journal-Sentinel on May 22, 2004: “An insatiable demand for groundwater in southeastern Wisconsin communities ... for drinking water will lower the level of a deep aquifer beneath Waukesha County 125 feet by the year 2020, a new study shows. The projected decline in the region's deep sandstone aquifer comes on top of a 500-foot drop that already occurred between 1900 and 2000...”

How can this be in a place that gets 30 inches of precipitation a year, on the shores of the fifth largest freshwater lake in the World? This isn't the arid Southwest.

Tom Dufus of the Nature Conservancy told us this morning about the very thin layer of soil over the Laurentian Shield in the Boundary Waters. Minor changes in temperature and rainfall due to global climate change could result in major changes to these forests. Global warming could change the Boundary Waters into a prairie.

The cleanest water in the country flows off our forests. One-third of the U.S. is covered by forests that produce two-thirds of the run-off. Collectively, our forests are by far the largest and perhaps most important water providers in the United States.

The objective is to keep water on the land longer. Put simply, watersheds catch, store and release water over time. Our challenge is to restore watershed function: the interaction of the soil, water, and vegetation.

Given the fundamental importance of water to all life, watershed health and water quality should be the basic measures of success for all lands managers.

## **2. Loss of biodiversity**

We are losing species at an alarming rate, and the trend must be reversed. Wildlands serve as a biological refuge for native species, often their last refuge. High biodiversity enhances ecosystem stability, resistance to invasion by non-native species, and resilience.

If you haven't read the book, [The Future of Life](#), I recommend it. It is an easy read written by E. O. Wilson, the world-renowned expert on biodiversity.

In a spot overlooking the place where the Wisconsin and Mississippi Rivers meet, Aldo Leopold spoke with eloquence and sadness to the planners of a passenger pigeon monument. He said,

“There will always be pigeons in books and in museums, but these are effigies and images, dead to all hardships and to all delights. Book-pigeons cannot dive out of a cloud to make a deer run for cover, nor clap their wings in thunderous applause of mast-laden woods. ... They know no urge of seasons; they feel no kiss of sun, no lash of wind and weather. They live by not living at all.” To me, this quote says it all when it comes to preserving all life forms on Earth.

### **3. Exotic species**

We’ve not only managed to diminish our ecological heritage, we’ve also rearranged it. The exotic species problem is an explosion in slow motion. I’m usually an optimist, but when it comes to controlling exotic species the picture is bleak. I must cite some examples.

The EPA’s 2001 State of the Great Lakes Report suggests that biological pollution is a more substantial threat than chemical pollution. Some scientists believe that only deforestation during the “cut-and-run” timber harvest era was as ecologically damaging as the spread of invasive species. The past three days, the Minneapolis Star Tribune ran a great series of articles about invasive species in the region

In my home state of Wisconsin there are 2,407 “wild plant species” and 734 are exotics.

A key reason that managing exotics is difficult is that many of them thrive in disturbed habitats. Our best defense against exotics is to protect remaining undisturbed native habitats and maintain the natural biodiversity. And, yes, we do need effective import inspections and standards. We also need a science-based approach to exotics that helps us to look ahead and act accordingly, rather than try to corral the horse after it’s out of the barn.

### **4. Off-road vehicles**

Off-road or all-terrain vehicle management is a huge challenge for public lands managers. We have more people going more places on public lands more often, with more kinds of all-terrain vehicles than ever before. Many people want to go anywhere anytime with anything, regardless

of the impact on the land, water, vegetation or wildlife. As both Forest Service Chief and Bureau of Land Management Director, I had many field managers say this was their most difficult challenge.

Bringing support, order, and agreement to the use of all-terrain vehicles on public lands will be exceedingly difficult and controversial. It will make the spotted owl issue look easy. But if the agencies and community of interests do not take it on, it will likely be thrown to the courts. Isn't leadership all about not shying away from difficult issues? The solutions will not come easy.

But whatever mechanisms we use to resolve the off-road vehicle use issue, most important is this: all of our activities must take place within the ecological limits of the land.

## **5. Ecological Literacy & Politics**

Ecological literacy is the most important tool in achieving any good in the areas we've reviewed. We need to help all citizens and landowners understand and appreciate the full spectrum of what the land does for us as a component of our own national security and for the good of the world.

Today, a greater proportion of humans than ever before is living farther removed from the land. Eighty percent of the U.S. population is urban or living in cities and towns. Our challenge is reconnecting people with nature.

We must connect peoples' hearts and minds with the land and the outdoors. And that doesn't mean that they have to live in the woods or out on the prairie. They just need to understand and appreciate the land that sustains us.

The nation's "wild places" have become as much a part of our character and heritage as places like Plymouth Rock, Constitution Hall and Gettysburg.

Why has protecting our environment has become a political football and a tool for dividing rather than uniting Americans in the past couple of decades?

Those who support efforts to keep the air we breathe clean and the water we drink pure are labeled as liberals. Those who want to save the nation's ancient forests and preserve their aesthetic qualities, unique ecosystems, and repository of biodiversity for future generations of Americans are described as "anti-development whackos".

It was a Republican President – Abraham Lincoln – who in 1864 signed legislation granting Yosemite Valley and the Mariposa Big Tree Grove to the state of California to hold these lands forever "for public use, resort, and recreation."

We all know the great conservation legacy of Theodore Roosevelt.

This nonpartisan approach to the environment and conservation even extended itself into the modern era. In 1964, Lyndon Johnson signed the Wilderness Act, which passed the House of Representatives on an incredible bipartisan vote of 372 to 12 and the Senate on a vote of 92 to 1.

Richard Nixon – no liberal by any account – worked cooperatively with Democrats and Republicans in the Congress to pass such important landmark laws as the creation of the EPA, the Clean Air Act Amendments, an extension of the Endangered Species Act, the Marine Mammal Protection Act, the Coastal Zone Management Act, and an expansion of the National Park System.

I think Theodore Roosevelt said it best when he proclaimed that, "A nation that destroys its soils destroys itself..." If he were alive today I believe he would extend that comment to say, "A nation that destroys its soils, [dirties its water and air, destroys its biodiversity] destroys itself..."

## **Accountability**

Our defense and intelligence agencies have the job of monitoring and dealing with national and international security. Our land management and environmental agencies have the job of monitoring and securing the long term health of the land. After a career in the public land

management business, I can tell you in spite of the rhetoric, scientifically-based long-term monitoring is a rarity. It's a lot more fun to start projects than it is to determine if and how well they actually work.

When it comes to accountability, evaluation, and measuring the performance of projects on the land, we are not very good. I'm delighted that the theme of your conference for the next few days is "**Accountability for the Web of Life.**" I wish I had the rest of the day to talk to you about this topic. I spent much of the last decade both frustrated by and focused on accountability and measuring performance. And I want make a few key points.

You in the foundation community are investing millions.

Are you making progress or losing ground? How do you know? Are you satisfied with the return on your investment? Do you know what the return on your investment is?

We are all concerned about the ecological health of the land, places like the Boundary Waters and Great Lakes. We have a reasonably good grasp of bio-physical measures of land health such as water quality, biodiversity, soil gain or loss, fish and wildlife habitat quality, acres protected from development, etc.

Aldo Leopold wrote: "the only progress that really counts is that on the landscape of the back 40." The health of the land on the back forty is determined by the human factor, by how people treat the land, live on the land and interact with the land.

How people treat the land is based on their attitudes, which govern their behaviors. This is what Leopold called the "land ethic," the human relationship with the land.

Given the increasing polarization and divisiveness over environmental issues, especially in the political arena, it is easy to conclude that we may very well be losing ground on the "human attitudes" front.

An evaluation of both bio-physical and “the human factor” is needed.

You need to be as smart as you can be at grant making. How many grants do you make? How many are successful? How many fail and why? How many of your projects require scientifically-based monitoring and evaluation of the bio-physical factors?

My conclusion after several decades in the land management business is that we do a poor job in monitoring and evaluation of our efforts, especially the human factor side of the equation.

And here is why---if environmental programs were all having a positive impact on the “human factor”, then it is likely we wouldn’t have the dilemma we now face, we wouldn’t have the “us vs. them” dynamic over environmental issues with enviros positioned as part of the problem.

Instead, some programs “succeed” albeit unclear how success of the “human factor” is defined or measured, and others not only fail but back-fire. How are we to learn from successes and failures without a common measuring stick?

Every project or program should be better than the one preceding it, based on systematic monitoring and evaluation. We have a much better understanding of the bio-physical measuring stick than of the “human factors.” But isn’t it the human factor that determines if we win or lose on the environment?

Here is what a “human factor” measuring stick might look like:

- Identify a sampling of the audience/constituency at which a program or project is directed.
- Using replicable social science research techniques, survey the audience prior to the project to get “baseline” or benchmark wave information.
- After project implementation, the first “tracking wave” of research should be undertaken to measure change.

- Tracking over time and across programs should provide the kind of data that tells us what works and what doesn't, similar to biophysical data collection.
- Every subsequent project, by incorporating the knowledge gained, should be better than the last. Build on what works and discard what doesn't.

To illustrate, let's look at another social cause—the campaign to convince young people not to smoke administered by many states. Each program includes a pre-wave and post-waves of research to measure the “human factor.”

To summarize, here's why a robust performance measurement system is so important:

1. Millions are invested each year in programs and yet there is no comparable method to measure ROI.
2. The measures we employ mostly relate to bio-physical condition of the land, like water quality, soil erosion, or habitat condition. These are necessary but insufficient.
3. The human factor ultimately determines the “end game.” It is human attitudes and behavior that bring about changes in our relationship with the land.
4. There is little knowledge of how most environmental projects influence human attitudes and behaviors and what approaches work best.
5. There is no commonly used or effective feedback loop to continuously evaluate and improve programs and approaches.
6. Every project that you fund should have a small percentage, say 2-4%, built in that provides for consistent, scientifically-based evaluation that focuses on human factor results.

7. What is needed is a feedback loop that will allow foundations or grantors to focus on what works, to eliminate that which does not work and continuously improve ROI.

I have been spending more and more of my time on performance measures and accountability and find it very revealing. But more than ever, I believe it is key to elevating environmental and conservation programs to a new level of performance.

Our biggest challenge in securing the long-term health of the land is embodied in Aldo Leopold's famous quote "the most difficult task in human history is to live on a piece of land without spoiling it."

Thank you and have a great meeting. I'll be around for the next day and a half and look forward to meeting all of you.

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