

**Conservation Challenges:  
Securing the Health of the Land**

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*March 5, 2004*

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**Security**....Since September 11, the term has become part of our daily lives. We have the new Homeland Security Act designed to protect the security of America and our borders. The United States and Britain attacked Iraq to make the world more secure. Most recently President Bush has asked Congress to appropriate \$87 billion in part to make the U.S. and all the world more secure.

Hearing the term again and again has caused me to think a lot about what it really means, especially as it relates to the land and natural resources management, the world in which I have spent much of my life. I've also thought about the facts that while 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, are we not 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 land - that are as real and potentially as damaging to our long-term well being and security as those posed by dictators and desperation.

To put what I'm talking about in historical perspective, let me talk for a minute about Iraq, the place that has dominated the world news for 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 for millennia. But today, as we have seen on television newscasts, the region is anything but fertile or lush due in large part to environmental

mismanagement, especially the misuse of water, soils, and vegetation over thousands of years. The once great agricultural societies that sprouted from the region's rich flood plains today are ruins on a parched landscape. In simple terms, too many people pushed the land too hard for too long.

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.

A modern example is currently unfolding in China where the Gobi Desert expanded by over 20,000 square miles during the 1990s. At the same time, China's food production fell below consumption. The potential ramifications for world food security are mind numbing – China accounts for one-sixth of the world's population.

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.

About 40,000 acres of coastal wetlands providing essential spawning, feeding, and nursery areas for three-fourths of U.S. commercial fisheries are disappearing each year. Of the fully-assessed U.S. fish stocks, 40 percent are depleted or are being over-fished.

So now, in the name of national security, let's consider the land, the value of natural areas and common-sense conservation. For the sake of simplicity, permit me to offer a list of challenges that must be addressed to assure long-term sustainability of our land here at home. I won't say much about the over-arching problems of human population growth and global warming.

Because of their magnitude, I must acknowledge their importance and they must be dealt with. I have one basic belief: all wealth and quality of life ultimately comes to us from the land—the soil, water, air, and biota.

## 1. Water

Let's start with water – an issue I believe is one of the greatest threats to human security. The United Nations Economic Commission recently has warned of a looming water crisis. The UN report stated that two in three people will face water shortages by 2025. In China, at least 400 cities are presently short of water. 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, battles are brewing over the waters of the Colorado River, already badly depleted. The bottom line is there isn't enough to go around.

The Great Plains States, from the Dakotas to Texas, depend on the Ogallala Aquifer, the largest “water tank” in the U.S., which contains water that was deposited 10,000 years ago when the last great ice sheets melted. It is now 10 to 100 feet below earlier recorded levels. When it's gone, it's gone.

Closer to home, the Great lakes contain 20% of the World's fresh surface water and 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. This is on the shore of the 5<sup>th</sup> largest freshwater lake in the world where it rains some 30 inches per year. Milwaukee, Waukesha, and Brown counties are all dealing with a common major concern, declining water tables.

Here in Wisconsin named for its beautiful waters, the resource is not what it once was. 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.

As Forest Service Chief, I gave a speech I called “The Forest Service: The World's Largest Water Company.” That followed my conviction that we should manage our national forests first as watersheds, and then for other uses. This was not always a popular view, even among some

of my own colleagues, but it seemed like a reasoned approach to me and I had to draw the line somewhere.

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 public lands are by far the largest and perhaps most important water providers in the United States. The 192 million acres of national forests and grasslands alone provide drinking water to more than 60 million Americans living in some 3,400 communities in 33 states.

A few years ago, we knew the value of a board-foot of timber, a barrel of oil, and a ton of coal, but we didn't know the value of the water. So a team of experts, led by Dr. Jim Sedell, went to work and found the marginal value of water from national forest lands to be more than \$3.7 billion per year. That does not include the savings to municipalities from reduced filtration costs.

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 our public lands managers.

## **2. Land fragmentation and sprawl**

Let's look at some rates of fragmentation:

An average of 3.2 million acres per year of forest, wetland, farmland, and open space were converted to urban uses between 1992 and 1997—an area about twice the size of Delaware. That's about 8,700 acres a day, more than double the rate of development of the previous decade, while the population remained relatively constant.

Even in cities with stable or declining population, sprawl occurs. The Detroit Urbanized Area's population, for example, actually declined by 7% from 1970 to 1990, yet its land area grew by 28%.

Even in remote areas, sprawl is occurring. Large landholdings in northern Wisconsin are being fragmented and developed, resulting in "waterfront sprawl," creating urban runoff problems in once remote forests. Most privately owned waterfront property is subdivided into not only lake-lots but also back lots as demand for this valuable property continually increases.

Land fragmentation increases as tract size diminishes. From 1978-1994, the proportion of private forest ownership of less than 50 acres nearly doubled. Thousands of larger parcels of land have been carved up into millions of smaller parcels.

This brings real meaning to the familiar quote, "Buy land, they ain't making it anymore."

The frontier is not what it was. Our parks are being loved to death. Recreation on all public lands is growing rapidly, as private land is increasingly posted with "no trespassing" signs, making it off-limits to all but those with specific permission from the land owner. Thank goodness that the public lands remain open to all, but we must not overuse or degrade them.

Decades ago, Aldo Leopold ventured a prediction: "Fifty years from now, the acquisition of public game lands may be recognized as a milestone in the evolution of democratic government." That prophecy came true. Americans cherish their public wildlands and parks as a major achievement of the United States in the twentieth century.

We have 104 million acres of congressionally designated wilderness, much of it rock and ice. All major ecosystems are not represented and we have woefully little in the Great lakes basin. Bottomland hardwoods and tall grass prairie, savanna, for example, are missing and should be added to the system.

Somehow the stark reality of the loss of big unfragmented tracts of land is lost on those that call themselves conservative. Consider the case of the National Forest roadless areas.

We have 386,000 miles of roads in our National Forests, with an \$8 billion taxpayer liability. We can't afford to take care of the road system that we have: more than 500,000 miles of roads on federally managed public lands, more than the distance to the Moon and back, enough road to go around the Earth 18 times; and all this on less than one-quarter of the land base of the United States.

Today, the question is: Should current and future Administrations and Congresses be relaxing our roadless policies when science and common sense tell us that these wildlands are the remaining habitats for many endangered, threatened, and rare species? They provide solitude for hikers and hunters and the cleanest water in the country. These areas are the scientific repositories of what undisturbed natural areas were like. Of what the frontier may have been like.

It seems that the neo-conservative definition of a roadless area is "an area in need of roads."

### **3. Wildland fire**

In the wake of sprawl and fragmentation comes concern about fire, especially at what is termed today the "urban-wildland interface," a fancy term that tells us people are living in places that are half-wild, half-Wal-Mart.

Some 400 million acres in all and 73 million acres of N.F. land have been identified as being vulnerable to fire. By some estimates there are as many as 190 million acres of forests in the western United States faced with the threat of extreme fires.

Fire has long been on our minds. The Smokey Bear campaign was perhaps the most successful public education campaign in our history. In 1968, more people in America knew whom

Smokey was than could name the President. Smokey was the second most popular character in the United States. Santa Claus was number one.

Some consider it heresy to say this, but the challenge today is to help people understand that while fire is always dangerous, all fire is not bad. Like wind and water, fire is one of nature's cleansing agents.

Unhealthy forests today are due to a combination of past timber management practices, exotic species and the cumulative effects of 100 years of fire suppression. We are good at fighting fire. We have the best firefighters in the world. Our firefighters put out 98 percent of the fires during their initial attack. Last year, the Forest Service alone spent over \$1.5 billion fighting fires.

Contrary to media reports, Oregon's half-million acre Biscuit Fire did not "destroy" the entire landscape. The fire burned at various intensities, leaving some patches of forest scorched but other areas completely untouched. The result was a classic mosaic pattern of burning on the landscape, which benefits many ecosystem functions and restores habitat diversity. According to Forest Service estimates, approximately 16% of the area burned at high severity, 23% at moderate, and 61% burned with low severity or was unburned. The costs of such massive firefighting efforts are tremendous, over \$150 million on this just this fire. In the long run, fire will occur one way or another. How fire returns to fire-adapted ecosystems is the question.

The challenge is to put fire back on the land. And do it in a way that doesn't harm people. Forests evolved with fire and are adapted to withstand fire. If they weren't, there would be no forests. Our houses and communities adjacent to the forests are the new additions. The development and sprawl are occurring all over the country, and are especially problematic in high fire frequency areas.

The urban-wildland interface is now spread over millions of acres. The millions of dollars that we pour into wildland fire fighting may not save your house. Structural firefighting requires very different skills than fighting forest fires. The most important things you can do to prevent your house from burning as a result of a forest fire take place within 200 feet of your house:

clear away flammable fuels that carry fire close to your buildings, keep stacks of firewood well away from structures, use fire-resistant roofing and siding materials, and maintain a perimeter of non-flammable material around the house to serve as a firebreak.

Careful, prescribed fire and fuel treatments and careful thinning of fuels are part of the solution. And yes, it makes sense to utilize the wood fiber to meet our growing needs.

I hope the Bush Administration's 'Healthy Forests Initiative' is as intent on implementing an ecologically-balanced fire management plan as it is on rolling back mining regulations, water and air quality standards and roadless policies. If the wildland fire plan turns into little more than an accelerated commercial logging program, it will quickly become a controversial "black hat" program, just like the infamous "salvage rider" did after the bad 1994 fire season when it was dubbed "logging without laws."

#### **4. Loss of biodiversity**

World-renowned Harvard biologist Edward Wilson conservatively estimates that approximately 27,000 tropical forests species a year are being pushed to the brink of extinction. And the Center for Plant Conservation at the Missouri Botanical Garden estimates that 20 percent of all plants native to the United States are declining, threatened, or near extinction.

We are losing biodiversity at an alarming rate, a trend that must be stopped. Many wildlands serve as biological refuges for native species, often as their last refuges. Across the country, our national forests and grasslands contain 181 of the 327 watersheds identified by The Nature Conservancy as critical for the conservation of biodiversity in the United States. 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, 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.

## **5. 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.

Invasive species now infest more than 100 million acres of American land and they are spreading at a rate of 3 million acres per year -- That's an area equal to a strip of land two miles wide stretching from coast to coast!

Exotics as a percentage of the flora in select regions: 11% in the U.S., 44% in Hawaii, 43% in the British Isles, 27% in Florida, 30% in Wisconsin, and 30% in Canada. David Wilcove *et al.* (1998) report that exotic species have played a significant causal role in the status of 49% of the species threatened with extinction in the United States. In comparison, they connect only 24% of imperiled organisms to pollution. Exotics are the leading threat to birds.

The Union of Concerned Scientists estimates that about 7,000 invasive species of plants and animals are now established in the United States.

The economic impact is significant. A select group of exotic organisms costs the United States \$138 billion per year in losses and control efforts.

In Florida, Brazilian pepper occupies over 700,000 acres, more than any other exotic in the state. Melaleuca occurs in another 500,000 acres and was spreading at a rate of nearly 30,000 acres a year through the early 1990s.

The State of the Great Lakes 2001 Report by the EPA 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.

Today in Wisconsin of the 2,406 “wild-growing” plant species, 734 are non-native.

Dutch elm disease wiped out the majestic elms and changed the look of hundreds of cities and towns as it whipsawed across much the country. Chestnut blight killed that tree and changed the great eastern hardwood forest ecosystems forever. There is white pine blister rust, kudzu, melaleuca in The Everglades, and the long and growing list of species displacing native rangeland plants. The impacts of the recently discovered Asian longhorn beetle remain unknown, but the insect’s arrival has greatly concerned foresters and anyone else who has paid attention. We do know it has already made its way into North America via the ports of New York and Chicago and that its effects will be bad—we just don’t know how bad.

An unintended byproduct of our modern transportation systems and daily travel to every continent is that we are flying and shipping millions of organisms – bacteria, seeds, insects, plants, animals, name the life form – around the world on a daily basis to places they have never been. We have unknowingly fashioned a Pangaea, the ancient super-continent that included all of the Earth's major landmasses. At least in the biological sense, the natural processes of evolution have been tossed up in the air.

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.

## **6. Old growth forests**

The Neo-conservatives definition of old growth seems to be “senile trees that belong in a home, preferably as 2-by-4's or 2-by-6's.”

More than any other issue, old growth symbolizes the National Forest management conflict and controversy for the past 30 years. The basic question is: How many acres of our old growth forests do we want to keep?

Here in the upper Midwest, we revere the tree that built America, *Pinus strobus*, the white pine. The white pine forests were leveled by the turn of the last century in the cut-and-run era. I wonder if we will ever have old growth white pine forest beyond the Menominee Tribal lands in Wisconsin again. Is there public support? Where? And how long will it take? Surely none of us living today will ever see the majestic white pine forests. I wonder if our great-grandchildren will.

I must also ask one last question: what in the world are we doing cutting old growth forests on public lands or anyplace? It's time, past time, that we recognize the ecological and social values of these forests and leave them intact. The Bush Administration should immediately halt all commercial harvest of old growth forests on public lands. That would be a lasting legacy – and a truly conservative one at that!

## **7. Off-road vehicles**

Off-road vehicle use 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.

The use of off-road vehicles increased in the national forests alone increased from 5 million users in 1972 to 36 million in 2002.

I recall a conversation with a Western senator who didn't want me to take on the issue. I asked him if he knew any ranchers or private landowners who let anybody who wanted to go anywhere, anytime, with anything. The answer was no.

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 communities do not take it on, it will likely be thrown to the courts. Isn't leadership all about not shying away from difficult issues? I commend Forest Service Chief Bosworth for taking on this tough issue. The solutions will not come easy.

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

## **8. Private land conservation**

Few areas offer more promise for conservation and watershed restoration than the many millions of acres of privately owned land in the United States.

For example, about two thirds of the forests in the United States – some 490 million acres – are in non-federal ownership. This includes more than 9 million woodland owners who own tracts of land less than 100 acres. Of these, only about 5% have professionally-developed science-based management plans.

According to a 1996 National Research Council report, we have more than 20 million acres of forest classified as urban and community forests and more than 60 million acres of cities and towns sprawling over what once was forestland. The opportunities are tremendous.

Research done by Dr. Greg McPherson and his colleagues in California at the Center for Urban Forest Research reported that there are some 177 million trees in energy conserving locations. This saves California utilities \$500 million annually in wholesale electricity purchase and generation costs. These trees save consumers about \$1 billion in air conditioning. McPherson's models predict that if Californians planted 50 million more shade trees in strategic locations the energy saved would be equivalent to seven 100-megawatt power plants.

The Forest Service estimates that we can plant another 700 million trees in our cities and towns across this country. In energy terms, combined with existing trees, this is equivalent to 30% of the estimated annual oil production of ANWR averaged over 50 years.

Shouldn't a national energy strategy put greening our cities and towns with tree planting ahead of or at least on par with drilling for oil on sensitive lands? Urban and suburban reforestation should be at the forefront of international policies and treaties. Trees produce oxygen, sequester carbon, which reduces global warming, and reduce storm water runoff, which saves money and improves water quality. Trees improve the looks and livability of our urban communities and help connect people to nature in the places where nature is needed most -- the places where people live. Any national energy policy that doesn't have tree planting front and center is incomplete.

## **9. Ecological Literacy**

I mention ecological literacy last because it serves as the most important tool in achieving any good in the areas we've reviewed. That is one of the reasons I came back home and to UW-Stevens Point to join the GEM Center. 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 the world.

Today, a greater proportion of humans than ever before are 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.

A recent study by conservation policy analyst Neil Sampson showed that the proportion of the federal budget allocated for natural resources is 50 percent of what it was in 1962. In the corporate world, that would be a near-fatal loss in market share. It is most surely an indictment of public education efforts, or the lack of them, on behalf of our precious natural resources.

We must make investments in the land for the long haul. We must build support for good land management. It's the patriotic thing to do. Not one of us wants future generations to look back at our time and ask, "Why did they use the land up?" Education, understanding and appreciation are key to maintaining our quality of life over the long haul.

### **Reflections on the past**

The last decade or so, as I was thrust into big controversial national conservation issues, I spent more and more time reading and reflecting about the history of conservation. I'd like to close with a story about a tragedy that was very different from the tragedies of September 11, 2001, but one that also thrust America into shock and changed the course of history.

A little over one hundred years ago, on September 6, 1901, a shot fired by an assassin seriously wounded U.S. President William McKinley as he attended the Pan American Exhibition in Buffalo, New York. Vice President Theodore Roosevelt was visiting members of the Vermont Fish and Game League at a luncheon on Lake Champlain.

In eight days, Theodore Roosevelt was sworn in as the nation's 26<sup>th</sup> President. Roosevelt's rise appalled many of the political leaders of his own Republican Party.

As Governor of New York, Roosevelt had shown the troublesome tendencies for the protection of natural resources and the reigning in of corporate power. Roosevelt's initiatives in New York flummoxed the high, mighty, and influential. They found a convenient solution to get this bull out of their china shop: draft Roosevelt for the Vice Presidency. Six months later, as Republican Party Chairman Senator Mark Hanna said, "that damned cowboy" was President.

Roosevelt's White House tenure from 1901 to 1909 defined modern conservation. He understood and believed in science. Not since Jefferson had someone so well-versed in the sciences occupied the White House. His conservation legacy is immense: more than 250 million acres of national forests, national monuments and refuges.

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

Protecting our environment has become a political football and a tool for dividing rather than uniting Americans.

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 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 by 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 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’m sure he would extend that comment to, “A nation that destroys its soils, [dirties its water and air, destroys its biodiversity] destroys itself...”

If we truly want a future free from threats to our security, we must think seriously about what constitutes a threat to our freedom and quality of life. We also need to ask ourselves as we spend billions of dollars and incalculable hours addressing the threats from the likes of Saddam Hussein and Osama Bin Laden, are we not making a mistake by ignoring threats to our land, air, food and water...threats that historically have toppled more civilizations than either of these two men could ever dream of? Without environmental security, basic sustainability of the land, the other pursuits are irrelevant.

We should not ignore the threats of terrorists and dictators. But on the other hand, will we be truly secure when our borders have been sealed tight from terrorists, but the water our children drink is growing scarce, the air we breathe is dirty and the land we live on and need to survive is sick? I think the answer to that question lies in the sand that blows through the ancient ruins of Iraq.

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