

Renewable Energy Initiative in the West

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MILESTONES

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Along the Path

A breeze blows steadily across the landscape. As it has for ages, the wind carries pollen, fertilizing the grasses for new generations of the grazing and burrowing wildlife of the prairie.

But today, that wind is just as likely to drive huge turbines to produce energy. You can see fields of them anywhere in the Americas that gets a steady wind. Their majestic blades course through the air, helping to create a more sustainable source of energy.

Modern wind farms are perhaps the most visible form of land use change driven by society's push for renewable sources of energy. But everywhere the landscape is being reassessed to determine which uses are best. Governments are pouring vast resources into infrastructure projects to stimulate flagging economies. NatureServe is working with our partners to ensure that this infrastructure is designed and established with environmental sustainability in mind.

I invite you to read the stories that follow to learn more about how NatureServe is helping communities—from South Carolina to Canada to Peru—incorporate the best conservation science into their land use planning. We and our network of natural heritage programs are likely at work in a place near you, working shoulder-to-shoulder with your community leaders to drive more effective conservation action. Thank you for your support, and for making this critical work possible.



Mary Klein

Mary Klein
President and CEO

Renewable Energy Initiative Seeks to Balance Economics and Ecology

Whether from climate change, the volatile oil markets, or the economic recession, the country's growing energy crisis presents a great many challenges. NatureServe is meeting these challenges head on through our work with the Western Renewable Energy Zone Initiative of the Western Governors' Association (WGA).

A collaboration among governors in eleven states, Canada and Mexico, the Initiative has implemented a process for weighing energy and economic potential with environmental and cultural concerns, and then designating renewable energy zones. These zones will take into consideration the possible conflicts presented by solar, wind, and geothermal power by avoiding the most sensitive areas to streamline future development.

NatureServe has been selected to conduct wildlife suitability analyses for the Initiative. "Our role includes recommending techniques and conducting GIS analyses that show potential impacts on wildlife from renewable energy. Ultimately this will lead to a categorized map of all lands covered by the Initiative," said Mary Klein, NatureServe president and CEO, who serves on WGA's Environment and Lands Working Group.

NatureServe and its network of natural heritage programs are also an integral part of providing data on the distribution of rare and imperiled species to the Initiative, as well as data on priority conservation lands.



Masthead photo: Cape Scott forest, British Columbia. ©Jared Hobbs

Windmills dominate this western landscape—but what effect do they have on the species and habitats around them? (Photo: ©Robert Glusic)



The Open Space Age

The clean air, water, food, fibers, and fuels we need for every-day living all require open space—forests, grasslands, farms, ranches, wetlands, riparian areas, urban greenways, and the like. Open space provides critical plant and wildlife habitat, and sustains human health and economic well-being. But, in the face of economic and cultural pressures, and myriad environmental concerns, how do landowners and community planners determine and prioritize what is the best use of their space?

NatureServe's Conservation Planning Initiative strives to inform land use decisions at the national, regional, and local levels by providing the sound science and strategic support tools needed to make those decisions. When land use decision makers understand the biological and ecological value of conserving open space, they can recognize the impacts of proposed land use decisions and identify areas appropriate for conservation and development.

A Comprehensive Approach

Our Conservation Services team works with multi-disciplinary groups of collaborators to address nearly any aspect of a conservation planning project, including community engagement, ecology, land management, and infrastructure. Our services include:

- Project conception and partnership building
- GIS mapping and modeling
- Conservation plan development
- Impact assessment and mitigation plan development
- On-the-ground and at-the-workstation assessments of important habitats, plants, and animals
- Custom analyses, such as economic evaluations, ecosystem services, and population viability analyses
- Building toolkits with advanced software, such as NatureServe Vista, to build project capacity

Planning in Action

In this issue of *Milestones*, we highlight just a few of the recent land use projects to which we are contributing our data, tools, and know-how. Our efforts focus on helping local communities, resource managers, and environmental groups as they grapple with land use decisions.

In an age where concerns about climate change, sustainable energy, and economic viability interplay at the forefront of nearly every land use decision, it is increasingly important to incorporate both biodiversity and local capacity into the decision-making process. Through our Conservation Planning Initiative, NatureServe is enabling land use planners to make effective land use decisions that balance these concerns and conserve the open spaces on which we all rely.



Leslie Honey
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NatureServe is an international non-profit conservation organization that provides the scientific basis for effective conservation action.

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Building a Friendlier Highway through Peru

Numerous countries in South America are making huge investments in new infrastructure. As there is no progress without consequence, these roads and bridges, pipelines and power lines are changing the economic, social, and ecological face of the continent. Natural areas, as well as important archeological sites and numerous indigenous communities that were previously isolated, are suddenly coming into intense, new contact with the modern world.

One example of new infrastructure is the Inter-Oceanic Highway, linking western Brazil with Pacific ports in southern Peru. Much of the highway route, which snakes through Amazonian lowland forest, then up over the Andes, already had small rural roads, some of which were the most bone-jarring in all of southern Peru. Today, a modern two- to four-lane highway is under construction.

With support from the Blue Moon Foundation, NatureServe scientists are working with local partners in Peru's

Departments of Madre de Dios and Cuzco to build local capacity for land use planning. NatureServe provides training in the use of technical software tools, including



Helping to Put the “Bio” in Biofuels

Did you know that without biofuels the United States would have needed to import an additional 7.2 billion gallons of oil in 2008? With the ability to reduce the country’s need for foreign oil, coupled with the fact that biofuels, which are derived from plants such as switchgrass, burn much cleaner than their petrol-based counterparts, it is easy to see why the biofuels industry is on a rapid rise throughout North America.

To support this movement, NatureServe is providing expert advice to the Council for Sustainable Biofuel Production, a consortium of industry, farm, forestry, and conservation partners, to establish

standards for “green certification” of biofuel producers across the country. Green certification indicates that appropriate measures have been taken to protect sensitive natural resources and wildlife habitat as farm and forest lands are managed for biofuel production. Certified producers are then easily identified as sustainability leaders in energy markets.

“It is hard to say just how much land in the country may shift towards biofuel production, but it is likely to be substantial. Now is the time to apply our lessons learned in biodiversity conservation to provide useful guidance and credible, science-based standards to producers and

refiners of biofuels,” said Patrick Comer, NatureServe’s Chief Terrestrial Ecologist. “If done well, certification standards can effectively direct the most intensive land uses to the least sensitive lands, and provide incentives for good land stewardship.”

NatureServe is working to develop maps and tools for farmers, foresters, and field technicians to identify sensitive lands and waters, and then document best practices in biomass production. NatureServe’s methods and information—which focus on how to characterize biodiversity, map its location, and evaluate its condition or health—all feed into certification standards for biofuel production.



Not just making hay—NatureServe’s methods and data inform decisions about biofuel production. (Photo: ©Oksana Perkins)

NatureServe Vista, to two planning teams that include staff and partners from each regional government. At the same time, NatureServe is supporting field biologists

who survey for endemic plant and animal species.

The project builds on regional efforts to map ecosystem types and endemic species distributions across Peru and Bolivia. The teams are using NatureServe software to integrate mapped information on biodiversity, cultural resources, and economic potential in order to explore their options for land use and resource conservation.

This region is home to numerous bird and plant species found nowhere else in the world, as well as human communities whose cultural traditions date back centuries. As regional governments maximize the economic and social benefits of the new highway, NatureServe is helping them ensure a smooth road into the future for these sensitive natural and cultural resources as well.

NatureServe science staff and a local field crew take a break from surveying for endemic birds along the Inter-Oceanic Highway in Peru. (Photo: NatureServe)



Donate—and Stimulate the Economy

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It’s free for you, free for NatureServe, and you pay the same (or less!) than you would by going directly to the store.

Sign up at iGive.com today and shop online at participating retailers, including Land’s End (NatureServe gets 2.8%), Orvis (5.6%), PETCO (3.6%), Old Navy (1.6%), Macy’s (2.4%), Toys R Us (1.2%), and more!

Coastlines, Climate Change, and Conservation Planning

From Seattle to San Diego, from Boston to Miami to Houston, more than half of Americans live, work and play within 50 miles of an ocean coastline. With sea levels rising and an increase in hurricanes and other major storm events, coastal-zone planning has never been more important.

Thanks to grants from the David and Lucille Packard Foundation, this important issue is being confronted head on by the Coastal Marine Ecosystem-Based Manage-

ment (EBM) Tools Network, an alliance of EBM practitioners and tool providers coordinated by NatureServe. EBM is an innovative management approach that considers entire ecosystems, including humans and the environment, rather than managing one issue or resource in isolation.

The Foundation recently funded pilot projects to develop and demonstrate the effectiveness of EBM strategies. NatureServe Vista, NatureServe's conservation

planning software, has been integrated into two of the pilot projects: in Aransas County on the Texas coast, and in the Charleston, South Carolina, region. NatureServe Vista is being used to assess the potential impacts of climate change on the ecology of the regions, including land use, natural hazards, and proposed hazard mitigations. Initial results demonstrate the significant potential of these tools and approaches to assist planners in collaborative work that spans the land-sea divide.

Major storms in recent years have highlighted the vulnerability of both the human and wildlife populations along our more than 12,000 miles of coastline. As the effects of climate change continue to affect these coastal areas, NatureServe will continue to provide the science and technology that supports proactive and effective conservation planning.

Whooping cranes in flight over Aransas County, Texas. This stretch of coastline is vital wintering grounds for these endangered migratory birds. (Photo: U.S. Fish and Wildlife Service)



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