



UTAH BANKS ON WETLANDS

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With more than 400,000 acres of wetlands ringing Great Salt Lake, Utah's many public and private wetland preservation and mitigation programs play important roles in the state's environmental protection efforts.

SALT LAKE CITY'S STUNNING SNOW-CAPPED mountains are the first sight greeting air passengers as they approach the city's international airport. As the descent begins, however, passengers are often startled by the somewhat surreal landscape that lies below. A swirling, muted palette of blues, browns, white, and gray is created by the 1,500-square-mile Great Salt Lake, the 30,000 acres of salt flats stretching to the south and west, and more than 400,000 acres of wetlands ringing the lake on its eastern and northern shores—all encircled by the towering Wasatch and Oquirrh mountain ranges.

This abstract landscape is an important ecosystem—a treasure designated as a site of hemispheric importance by the Western Hemisphere Shorebird Reserve Network council. More than 250 species of shorebirds and waterfowl use Great Salt Lake and its surrounding

wetlands as a breeding ground and wintering place. During peak migration periods, 5 million birds rely on the lake and wetlands for feeding, sanctuary, breeding, or migratory stopovers.

In addition to the lake, with its favorable location and blend of fresh and hypersaline water highly attractive to waterfowl, Utah boasts two other points of distinction: it is the second driest state in the country after Nevada—only 1 percent of Utah's land is wetland—and it is one of the nation's most urbanized states.

Most of Utah's urbanization is adjacent to this wetland ecosystem along a 100-mile-long corridor known as the Wasatch Front, where 80 percent of Utah's 2.5 million residents live. Along this corridor, three primary population areas—Salt Lake City, Provo, and Ogden—for decades have been separated by miles of open

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space and farmland, dotted with small rural and suburban communities.

Today, however, Utah's robust economy, strong economic development programs, and international exposure during the 2002 Olympic Winter Games have spurred unprecedented population growth, predicted to hit 3.5 million by 2020, primarily along the Wasatch Front corridor. New and expanding communities are burgeoning at an incredible pace, filling in these open places to create a corridor that is decidedly more urban than rural. And as the corridor continues to fill, development is moving east up the foothills and west toward the lake, getting ever closer to protected wetland areas and their uplands.

It is no wonder, then, that many agencies, organizations and individuals are passionate about preserving Utah's precious—and scarce—wetlands.

The value of Utah's wetlands is widely recognized by federal, state, and county agencies. Additionally, commercial and nonprofit organizations work independently and as partners to preserve these wetlands through a variety of means.

At the forefront of this effort is the U.S. Army Corps of Engineers, Sacramento District. The corps is charged with wetlands restoration and protection as defined by the Clean Water Act and the comprehensive National Wetlands Mitigation Action Plan, issued by the Bush Administration in late 2002. One corps goal, that there be no net loss of wetlands, is pursued through the management of a permit program that closely governs the actions of developers and builders seeking permission for activities affecting such lands. All projects with the potential to affect wetlands must first seek to avoid, then minimize, and finally provide compensation for any impacts on waters of the United States, including wetlands.

Since the corps started tracking wetland impacts in Utah in the early 1990s, it has issued permits affecting 6,321 acres, including wetlands, says Shawn Zinszer, chief of the corps's Intermountain Regulatory Section. More than 9,600 acres of compensatory mitigation has



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been proposed and accepted as compensation for these impacts, primarily in the form of wetlands creation, restoration, enhancement, and preservation.

A Living, Breathing Ecosystem

Like many wetland areas, the shoreline of Great Salt Lake experiences the fluctuations associated with seasonal and climate changes. Unlike most, however, these wetlands range from fresh to hypersaline water, and because of the shallowness of the lake—13 feet deep on average—and the gentle grade of its shores, a relatively small rise in the water level can inundate hundreds of thousands of acres of upland shoreline.

Great Salt Lake's average water level is 4,200 feet above sea level, at which it is 75 miles long and 30 miles wide with 335 miles of shoreline—equivalent to the distance between Salt Lake City and Yellowstone National Park in Wyoming. It occupies 1,680 square miles, or 1 million acres, and contains 15.4 acre-feet, or 5 trillion gallons, of water. At the lake's record high of 4,212 feet in 1987, the surface area nearly doubled, expanding to 2,500 square miles and covering with water a majority of the surrounding recreational, industrial, wildlife management, and transportation facilities.

While flood control is a long-recognized value of wetlands, the dramatic fluctuation of the lake level is a natural process that both destroys old habitat and creates the conditions for new vegetation to take hold—thus preserv-

ing the mosaic of habitat types that support so many different kinds of bird species. Upland habitat that escapes inundation provides a critical buffer feeding and living space for migratory birds when the lake level is high.

“The lake is a living system that needs room to breathe and, therefore, requires protection from development impacts along its shorelines,” explains Lynn de Freitas, executive director at FRIENDS of Great Salt Lake, a volunteer, nonprofit organization working to protect the lake’s ecosystem. Over the past 100 years, the lake level has varied as much as 26 feet in elevation. “With the potential for such dramatic fluctuations over time, planners should regard this as a matter of fact,” she



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says. “The periodic flooding—a term that is used when structures and developments are located within the floodplain—while inconvenient to those who have chosen to develop close to the lake, provides the benefits of nutrient dispersal and plant revitalization that is part of the dynamic of wetlands.”

Chris Montague, director of conservation programs for the Nature Conservancy, agrees. “Preserving the shorelines and wetlands of Great Salt Lake is critical to protecting a natural resource important well beyond Utah’s borders,” he says. “This is not just a backyard saline lake. It is a world-class jewel that sustains wildlife visiting from across our hemisphere and improves our quality of life in ways we rarely recognize or appreciate.

“Many people think of Great Salt Lake as a dead sea. On the contrary, the lake and its 400,000 acres of wetlands support innumerable plants, invertebrates, mammals, and birds; provide needed flood control; help clean the water of contaminants; and provide hunting and birding recreation for our citizens.”

Great Salt Lake’s reputation for bird-watching and recreational activities generates more than \$500 million from wildlife enthusiasts visiting the lake. Duck hunting alone, according to a 2001 survey by the U.S. Fish and Wildlife Service, annually accounts for more than \$13.3 million in trip and equipment purchases, \$21.2 million in total economic output, 240 jobs, and a job income of \$6.3 million, which, in turn, generates \$1.2 million in state tax revenue and \$1.6 million in federal tax revenue.

The ecological and economic sustainability of Great Salt Lake creates a challenge because the lake not only generates billions of dollars for the Utah economy, but also is an extremely fragile and complex system. All agree that a concerted effort needs to be made to protect the lake for future generations, while at the same time accommodating anticipated residential and commercial development along the Wasatch Front corridor.

Public Sector Preservation Efforts

Many public endeavors are striving to protect Utah’s wetlands. Nonprofit conservation organizations joining this effort include the Nature Conservancy, National Audubon Society, FRIENDS of Great Salt Lake, and Ducks Unlimited, one of numerous duck clubs. Federal agencies lending their support include the Utah Reclamation Mitigation and Conservation Commission, and the federal Bear River Migratory Bird Refuge. State agencies include the Governor’s Office of Planning and Budget, and the Utah Department of Natural Resources, including its divisions of Wildlife Resources, and Forestry, Fire, and State Lands.

The federal Utah Reclamation Mitigation and Conservation Commission was established specifically to support the acquisition of vital wetland properties; support the restoration, enhancement, and rehabilitation of state and federally managed wetlands adjacent to Great Salt Lake; restore and manage commission-acquired properties; and develop and implement wetlands strategies in support of the conservation plans developed by Davis and Box Elder counties, which border Great Salt Lake. The commission also partners with nonprofit agencies such as the Nature Conservancy and the National

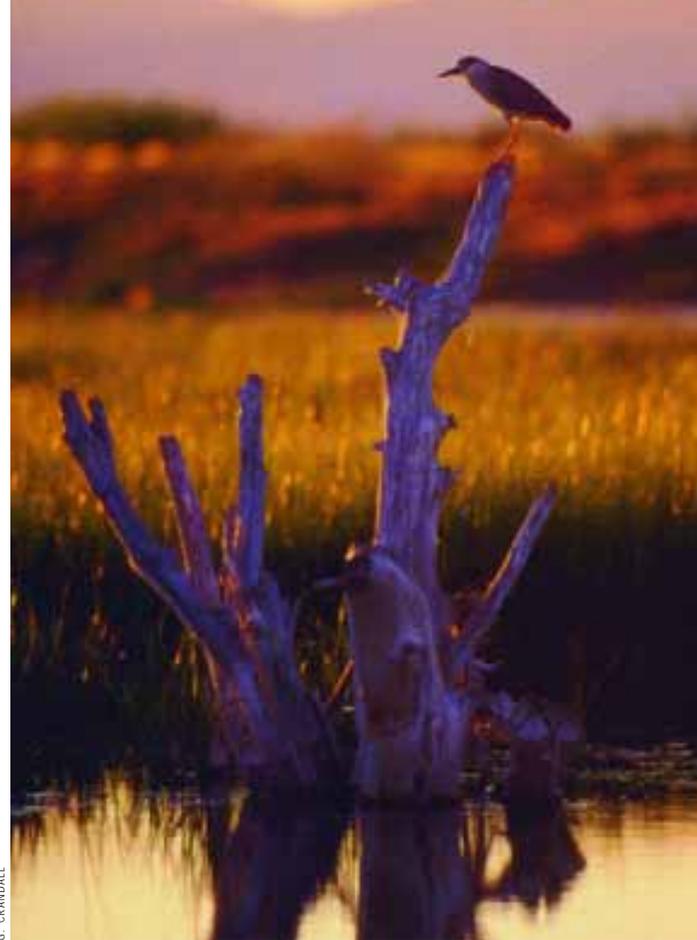
Audubon Society in their efforts to protect, preserve, and mitigate damage to these wetlands.

The Nature Conservancy established an office in Salt Lake City in 1986 and has purchased wetlands or established conservation easements using public and private funds. Over the past 20 years, in partnership with the federal mitigation commission and other major partners, the conservancy created the Great Salt Lake Shorelands Preserve, an undiked natural landscape consisting of 11 contiguous shoreline miles and more than 4,000 acres of salt- and freshwater marshes, ponds, pools, sloughs, and mudflats located between the Farmington Bay Waterfowl Management Area and the Antelope Island State Park Causeway. Home to an award-winning visitor center, the preserve's rich feeding ground for tens of thousands of migrating birds has been the site of some of the largest gatherings of wildlife ever observed on Great Salt Lake. In total, the Nature Conservancy has helped to preserve more than 10,000 acres of wetlands around the lake.

The National Audubon Society, also in partnership with the mitigation commission, has been working in a broad area called the South Shore Ecological Reserve, comprising 8,000 acres on the southern and eastern shores of Great Salt Lake. Much of this area has already been acquired by entities that need to mitigate wetland impacts and want to develop an area reserved for wetlands and avian wildlife, particularly shorebirds. The National Audubon Society Gillmor Sanctuary covering 1,416 acres is located in this area. The organization also owns part of and manages the Lee Creek Natural Area, which covers 305 acres.

FRIENDS of Great Salt Lake uses advocacy and education as tools to encourage sustainability and smart growth principles for development along the Wasatch Front. The group works collaboratively with public and private partnerships in the watershed to promote accountability, lake management strategies, and development of policies that are consistent with good stewardship practices.

Ducks Unlimited, likewise, serves as a steward for wetlands preservation. Since it started conservation work in Utah in 1987, organization programs have benefited 38,320 acres through easements, fee title acquisitions, and restoration/enhancement of wetlands at a total expense of just over \$6 million. In addition, the organization has provided technical assistance affecting 35,000 acres of Utah land.



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Private Sector Mitigation Programs

Private mitigation and mitigation banking are also viable methods of wetland protection used by Utah development companies. All private sector mitigation programs work in conjunction with the U.S. Army Corps of Engineers' regulatory and permitting programs, after the corps ensures that developers have first sought to avoid and minimize activities that affect wetlands. Impacts must be compensated for through the restoration and/or preservation of existing wetlands, or the creation of new wetlands.

While several large Utah corporations, including Kennecott Utah Copper and the Salt Lake Airport Authority, have created wetland mitigation areas, one company, Diversified Habitats, manages the only private wetland bank operating in Utah—and one of the few found in the United States.

Diversified Habitats works in conjunction with the Army Corps of Engineers and other public agencies to develop wetland mitigation sites that can be used as part of an exchange by a developer whose project will damage or destroy an existing wetland. Diversified Habitats is given credits by the corps as high-quality wetlands are created or enhanced. Developers can then buy these credits to pay for the new wetlands, which essentially

replace those affected by their own projects and thereby constitute no net loss of wetland areas. Diversified Habitats has developed four wetland mitigation sites and sells credits from these sites to developers. Once a wetlands area is established and approved by the corps, which generally takes at least five years, Diversified Habitats donates the land to a conservation organization.

A recent example of this process is the company's presentation to the Nature Conservancy of 104 acres of high-quality wetlands, accompanied by a \$37,000 gift to fund an endowment dedicated to managing the land. Diversified bought the acreage—half farmland and half low-quality wetlands—in 1996. The corps and the Nature Conservancy helped the company select the parcel, located adjacent to the conservancy's Great Salt Lake Shorelands Preserve, for the sole purpose of carrying out the donation. If the Nature Conservancy were to buy this land today, it would cost about \$300,000.

Diversified Habitats also has an active mitigation bank site known as Bailey's Meadow that incorporates more than 123 acres, says company cofounder Jim Paraskeva. This site will be donated to a conservation organization once the monitoring process has been completed to the satisfaction of the corps. "Our goal at Diversified Habitats is to solve wetland mitigation problems for developers while improving wetland habitats along the Wasatch Front," he says. "We are continually striving to strike a balance that allows the filling of low-quality wetlands while increasing the availability of high-quality wetlands."

Wetland mitigation is also conducted for private mitigation needs by several major Utah corporations, notably Kennecott Utah Copper. In 1996, Kennecott purchased land adjacent to Great Salt Lake, where it created the Inland Sea Shorebird Reserve (ISSR) to offset the loss of wetlands affected by expansion of its tailings impoundment, where it disposes of waste rock created in its operations. By cleaning the reserve site of garbage created by years of illegal dumping; obtaining, directing, and damming water sources to sustain the wetland communities; and fencing off the site, Kennecott was able to transform the area into an important component in Great Salt Lake ecosystem. The ISSR attracts about 100,000 migratory shorebirds and waterfowl each year, and provides habitat for many other wildlife species. In 1998, Kennecott expanded the 2,500-acre ISSR to 3,670 acres and created one of the largest wetland mitigation banks in the United States. In 1999, the ISSR was designated



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the Outstanding Environmental and Engineering Geologic Project by the Association of Engineering Geologists and has been used as a model of successful wetland mitigation in the Salt Lake valley.

The Salt Lake City Department of Airports manages a 450-acre wetlands mitigation site that it created in 1992 upon receiving a corps permit for construction of a new west runway at the Salt Lake City International Airport. The Department of Airports had to replace 338 acres of wetlands that were affected either directly or indirectly by addition of the runway, says Tim Gwynette, manager of environmental programs for the airport. This upland region, 10,000 feet west of the new runway, has new wetlands that include open water, marsh, playa, and wet meadows fed by water from the North Point Canal Company, in which the airport owns water rights. For the past 13 years, the Department of Airports has monitored, maintained, and managed this wetland, and will continue to do so in the future.

The growing communities along the Wasatch Front are addressing their need for urban expansion, as well as their responsibility for a hemispherically important ecosystem. As they do so, Utah's broad coalition of public and private entities will continue to deliberate and make decisions that dramatically affect the future of the state's wetlands and of generations of residents to come. **U**

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