



# FRIENDS of *Great Salt Lake*

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*Great Salt Lake and the Wasatch Mountains, 1877, Gilbert Davis Munger (1837-1903)*

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## Winter 2002 Calendar of Events

January 10	Thursday	Board Meeting 7PM - Alta Club
January 22	Tuesday	General Meeting 7PM - Carly Burton - Bear River Basics and Then Some. (See pg. 6)
February		No Board or General Meeting due to the Olympics.
March 2	Saturday	Board Retreat - Great Salt Lake Yacht Club 9-5PM
March 7	Thursday	Board Meeting 7PM - Alta Club
March 9	Saturday	Winter GSL Field Seminar Series - Watching Bald Eagles with Bob Walters (registration required)(See pg. 9)
March 26	Tuesday	General Meeting 7PM Panel Discussion on Bear River Water Development. Speakers T.B.A.
April 19	Friday	2002 Great Salt Lake Issues Forum (See pg. 4)
April 20	Saturday	Forum Field Trips(See pg. 6)

Watch the local papers for announcements of speakers and topics at our General Meetings, or call our hot-line at 801-583-5593, and press 1 for monthly activities. NOTE: General Meetings are held at the Sugarhouse Garden Center, located in the northeast corner of Sugarhouse Park, 2100 South 1300 East in Salt Lake City. Board Meetings are held at the Salt Lake County Complex on State Street and 2100 South in Salt Lake City. Room S3009, or as otherwise noted.

## On the Cover

Gilbert Davis Munger, American(1837-1903) *Great Salt Lake and the Wasatch Mountains*, 1877, oil on academy board, Gift of Donald Burns, Collection, Utah Museum of Fine Arts, University of Utah

This study in oil was probably painted shortly after Munger accompanied Clarence King's survey in the late 1860s-early 1870s as its official artist. Clarence King's 40th Parallel survey operated under the auspices of the United States Army. Its broad purpose included mapping, and more importantly the study of geology, botany, and palenotology roughly paralleling the route of the new transcontinental railroad.

Munger began his career in art as an engraver for the Smithsonian Institution. Before the Civil War he founded the federal Bureau of Lithography, and accompanied the scientist Louis Agassiz as an illustrator on a two year expedition to the Indian Ocean. During the Civil War, Munger served as a lieutenant of engineers designing defenses for Washington. Following the Civil War, Munger sketched and traveled in the West including the period he worked for the 40th Parallel survey. For the latter part of his life Munger lived in Europe; keeping a studio in Barbizon, France near Paris until shortly before his death.

# President's Message:

## Preserving the Past With an Eye on the Future

The cover painting, Gilbert Munger's *Great Salt Lake and the Wasatch Mountains*, is an incredible glimpse of the early years of settlement around Great Salt Lake. Munger's interpretation suggests harmony, tranquility and optimism.

When I'm on the lakeside looking toward the Wasatch, I often feel that same sense of harmony, tranquility and optimism. Even under the most intense of trials, my sense is that Great Salt Lake will prevail as a vibrant and sustainable ecosystem. And yet our relationship with the lake is much more complicated than it was when Munger was working with the 40th Parallel survey team. As a growing metropolitan area of 1.7 million people, our collective needs often seem more important than those of Great Salt Lake.

The art of Great Salt Lake and the history of Great Salt Lake since statehood are two areas where FRIENDS has not had much of an opportunity to spend much time. In future issues of this newsletter, at general meetings, and during our various Issues Forums we hope to explore not just the science but the art of Great Salt Lake.

Since our founding in 1994, we have concentrated not on the art or history of the lake but on defining the issues and problems that confront the lake now. One of those issues that has required a tremendous amount of time and energy is the Legacy Parkway.

On November 16, 2001, Utahns for Better Transportation, Salt Lake City Mayor Rocky Anderson, and the Sierra Club scored a

major victory when the U.S. 10th Circuit Court of Appeals in Denver ordered the Utah Department of Transportation to stop all further destruction of wetlands and other wildlife habitat while we appeal the Legacy Parkway case in that court.

And yet, there is still lots of work to do to convince the Court of Appeals that the federal and state agencies that supported and approved the project violated federal environmental laws. In our work to prepare our appeal for the case, I hope you will consider making a donation to the legal fund and send letters or OpEd pieces that support balanced transportation to your local newspapers.

Even while we're addressing our immediate problems, it's important to think of Munger's magnificent painting. Can we reach a collective vision of harmony, tranquility and optimism?

Yours in saline,

Lynn de Freitas

### Lake Fact:

Great Salt Lake is a Western Hemispheric Shorebird Reserve site.

How many other sites are located in the lower forty-eight states?

# FRIENDS of Great Salt Lake

**F**RIENDS of Great Salt Lake was founded in 1994 with a guiding mission to preserve and protect the Great Salt Lake Ecosystem and to increase public awareness and appreciation of the lake through education, research, and advocacy.

Led by a highly active Board of Directors and an Advisory Board consisting of professionals in the scientific, political, literary, and broadcast communities, FRIENDS holds monthly meetings that feature guest speakers and presentations focusing on subjects and issues related to the Great Salt Lake. The organization received special recognition for its efforts in 1998, when it was awarded the Conservation Achievement Award by the Utah Chapter of the Wildlife Society.

FRIENDS has organized and sponsored an array of materials, events, and activities in pursuit of its mission. The quarterly newsletter includes information on important meetings and activities, articles pertaining to lake ecology, issues updates, maps, data tables, photographs, and future events notices.

We also sponsor a biennial Great Salt Lake Issues Forum, which provides a gathering for local citizens who care about Great Salt Lake. The goal of the Forum is to encourage

constructive dialogue about the future of the lake's ecosystem and its resources, and to illuminate the complexities involved in research, management and planning for the lake.

In 1997, FRIENDS hired its first education director and initiated a major regional education project designed to enhance both the knowledge about and care for the future of Great Salt Lake. With that goal, a live-narrative slideshow program, entitled *The Lake Affect: Living Together Along the Shores of Something Great*, was born. Audiences have included Envision Utah, the Utah Department of Natural Resources, and the Salt Lake Olympic Committee's Environmental Advisory Committee, along with numerous school and civic groups.

In an effort to reach even more citizens with its message about Great Salt Lake, FRIENDS has produced a video version of *The Lake Affect*. With this video and the Project SLICE fourth grade Great Salt Lake curriculum, we hope to achieve a positive, long-lasting impact on the future of Great Salt Lake and those who dwell upon its shores. 🐾

## 2002 Great Salt Lake Issues Forum

April 19 & 20, 2002, Wyndham Hotel, Salt Lake City

### Great Salt Lake: A Complex and Changing System

The 2002 Great Salt Lake Issues Forum will focus on Great Salt Lake (GSL) through time and space. On the morning of Friday, April 19th, we will begin by looking at GSL in geologic time. Speakers will address the geology of the Great Basin and Lake Bonneville and paleoclimates around the lake. As the morning progresses, we will learn about more recent climatic trends and phenomena including the lake effect. In the last session of the morning, global climate change and its ramifications with respect to GSL will be addressed.

The second series of talks will focus on Great Salt Lake in historic time. The first set of speakers will focus on the particulars of the lake's unique ecosystem including its abundant bird life, wetlands, and limnology. Following lunch and the keynote address, we will discuss the human inhabitants of the GSL basin focusing on its archaeology and pioneer history.

The final series of talks will center on the present and potential future of GSL. Speakers will look at the ecosystem services provided by the lake and some of the

economies that have grown out of these. Finally, the future of the lake in light of urban growth and development will be examined and discussed.

A poster session summarizing research, conservation issues, and other items of interest pertaining to GSL will be available for viewing during breaks between sessions, following lunch, and at the end of the day.

For the first half of the day on Saturday, April 20th, FRIENDS will host a variety of field trips around the lake. Field topics will likely include the geomorphology of the Great Basin and Lake Bonneville, geoantiquities, botany, and avian ecology.

As it has been since our first Issues Forum in 1996, the objective of this year's Forum is to provide information, identify important issues affecting the lake, and generate lively discussion that will help shape the direction that FRIENDS of Great Salt Lake will take in the coming years. Please come and be a part of it. Preregistration fees are \$50 per person, \$65 at the door. Participation in one of the field trips will be an additional \$10 per person. We look forward to seeing you there!

Check the website [www.fogsl.org](http://www.fogsl.org) for more Forum information updates and registration materials.

# The North American Wetlands Conservation Act

## The Great Salt Lake Project, Phase 1

By Jeff McCreary

The Great Salt Lake, a Western Hemispheric Shorebirds Reserve Network site, home to the largest breeding colony of white pelicans, host to the largest migrating population of Wilson's phalaropes, resting area for thousands and thousands of pied-billed grebe, gourmet kitchen for millions of other resident and migrating waterbirds, and more "best", "biggest", or "most" designations than most people can keep straight. The importance of this giant salt-water wetland, and its associated freshwater components, to migratory birds cannot be understated. One look at any bird flyway map shows that the Great Salt Lake is the bird crossroads of the arid Intermountain West.

But not just birds call the Great Salt Lake basin home. Over a million people live here, with hundreds more arriving each year. A recent National Geographic article on urban sprawl identified this part of the Intermountain west as one of the top 15 fastest growing regions in the country. Those that have lived here for more than 15 years can testify to the amount of development that has occurred along the Wasatch Front, and that land values here are beginning to rival those in the San Francisco Bay area.

Thus a conflict arises between the lifecycle needs of Great Salt Lake wildlife and the development desires of their human neighbors. In most circumstances these are mutually exclusive conditions and development wins, but not always. In 1999, a unique conservation partnership was formed to safeguard existing and restore degraded wetland wildlife habitat before it was too late. This partnership was the Great Salt Lake Wetlands Project, which is using a \$1 million grant from the North American Wetlands Conservation Act to protect and restore wetland habitats associated with the lake.

The North American Wetlands Conservation Act (NAWCA) was passed in 1989 and provides matching grants to private or public organizations who have developed partnerships to carry out wetlands conservation projects in the United States, Canada, and Mexico.

The Act was passed, in part, to support activities under the North American Waterfowl Management Plan, an international agreement that provides a strategy for the long-term protection of wetlands and associated uplands habitats needed by waterfowl and other wetland dependent migratory birds in North America. The NAWCA grant program encourages development of wetland conservation projects through the development of diverse partnerships that can include representatives federal, state, and local agencies, non-profits organizations, private individuals and companies, and even Native American Tribes.



The Great Salt Lake Wetlands Project partnership consists of the Ducks Unlimited, U.S. Fish and Wildlife Service, Utah Division of Wildlife Resources, The Nature Conservancy, Utah Wetlands Foundation, Davis County, the Ambassador and New State ducks clubs, the Friends of Bear River Refuge, and the Burton Foundation. Together, partner match and

NAWCA funds have protected through fee-title and conservation easements over 400 acres of wetlands and associated uplands along the Wasatch Front as well as restored hydrologic regimes to over 15,000 acres of wetlands on managed areas.

Most of the protected areas are located within the Nature Conservancy's Great Salt Lake Shorelands Preserve. The Conservancy has worked tirelessly to preserve some the last remaining wetlands along the southeast lakeshore. Davis County has also contributed significantly to protecting wetlands by following its Wetland Conservation Plan through acquiring and donating easements on properties with important wetlands to the Nature Conservancy and the Division of Wildlife Resources. The bulk of the wetland restoration efforts were focused on the southern part of the Lake. Ducks Unlimited provided the coordination for each project by designing and having constructed each project. On the Farmington Bay Waterfowl Management Area, the Project was able to renovate and reconfigure, (*continues pg. 6*)

## Bear River Basics and Then Some

The Bear River is similar to most rivers in the west, yet it is unique and unlike any other. It is over 500 miles in length, yet its headwaters and mouth are only 90 air miles apart. It has a mean annual water supply of 3 million acre feet of which nearly 2 million acre feet is diverted onto 500,000 acres of farmland. Most importantly for the Great Salt Lake, it is the largest lake tributary and has a mean annual flow of about 1.2 million acre feet at its mouth. The river makes 5 state line crossings between Utah, Wyoming and Idaho, is subject to a federal compact, 2 court decrees and is operated under water rights of 3 state jurisdictions. The primary use of the river is for irrigation yet the primary system operator is a public utility. The discussion will focus on history of development, various uses, hydrology and institutional requirements which basically define the river's characteristics today.

Join FRIENDS on Tuesday, January 22 at the Sugarhouse Garden Center for this comprehensive overview of the Bear River presented by Carly Burton. Carly is a consultant for PacificCorp, formerly Utah Power & Light. He is the Executive Director for the Utah Water Users Association, a non-profit water users group with about 560 members who are water users and affiliated organizations throughout the State of Utah. 🌿

## 2002 Calendars On Sale!

Start off the new year on the right foot (or on your left foot, if you prefer) with Gary Crandall's Birds of the Great Salt Lake Calendar. These splendid, full color calendars can be yours for only \$8.00. Half of the purchase price for each calendar will be donated to the Doyle Stephens Research Assistance Scholarship Fund.

Order now and send your check to FRIENDS  
PO Box 2655 Salt Lake City, Utah 84110-2655.  
Please mark your check for calendar purchases.  
We will mail your calendar to you asap.

## "The North American Wetlands Conservation Act" (continued from pg. 5)

the water management system to allow for precise and stable water control for over 5,000 acres. Similarly, at the Ambassador and New State duck clubs the water management system were restored to allow them to provide several hundred acres of the highest quality water-bird habitat possible.

Other restoration activities occurred on the Bear River Migratory Bird Refuge in Box Elder County. Here the Refuge was able to restore over 500 acres of seasonal waterfowl brooding and nesting wetland habitat in their Grasslands Unit. Freshwater nesting and brooding habitat is one of the most limiting wetland habitat types in the northern part of the Salt Lake Basin. With the completion of these projects a marked increase in the amount of waterbird production has been observed.

The Great Salt Lake Wetlands Project is slowly winding down with its final restoration sub-project on The Nature Conservancy's Shorelands Preserve, which will be completed in the next several months. With the completion of the Project over 265 acres will have been protected and over 5,300 acres of wetlands restored using grant funds.

The wetlands and wildlife of the Great Salt Lake are signatures of the intermountain region. The wetlands of the Great Salt Lake are the backbone supporting the tremendous waterbird populations that we all enjoy and expect to see each spring and fall. The joy of seeing 500,000 Wilson's phalaropes or 300,000 northern pintails from close up cannot be replaced. Without the dedication and continued support of conservation partnerships, these irreplaceable habitats and their associated wildlife will slowly degrade and disappear.

The Great Salt Lake Wetlands Project continues with the implementation of Phase 2. Building off of a solid partnership base, Ducks Unlimited received a second \$1 million NAWCA grant. These funds will continue the wetland conservation efforts begun in 1999, and will protect and restore and additional several thousands of acres of Great Salt Lake wetlands. As more and more people understand the importance of wetlands, society as a whole will realize our dependence on them. As our population centers expand closer and closer to these vital ecosystems, the need for wetland conservation will only continue to grow. 🌿

# The Importance of Uplands in Protecting Wetlands

*Author's Note: This is an excerpt from a brief that I filed on behalf of the Utah Wetlands Foundation in a lawsuit that was brought by landowners challenging the Corps of Engineer's decision to include their land in the Legacy Highway mitigation preserve. This case illustrates the ongoing controversy over the role of uplands in protecting adjacent wetlands. Among other things, the landowners in this case argued that that it was improper for the Corps to allow uplands to count towards mitigation for the loss of wetlands. Here is a part of our response.*

*- Cullen Battle, Fabian and Clendenin*

## THE INEFFECTIVENESS OF MITIGATION

Before passing judgment on the Legacy Highway mitigation preserve, the Court should be aware of the poor track record of past mitigation efforts that have not considered wetlands as part of a larger landscape that includes surrounding uplands.

Since 1990, the national policy under the Clean Water Act has been “no net loss” of wetlands. Memorandum of Agreement Between the Environmental Protection Agency and the United States Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines, (Nov. 15, 1989). Under this policy, wetland impacts must be avoided whenever possible. If impacts are unavoidable, they must be minimized, and mitigation for any wetland losses must provide at least “one for one functional replacement (i.e., no net loss of values) with an adequate margin of safety to reflect the expected degree of success associated with the mitigation plan.” Memorandum of Agreement, Part III.B.

In a landmark report recently released on the Nation's wetland mitigation practices, the National Research Council of the National Academy of Sciences concluded that these mitigation policies are not being achieved and that “the goal of no net loss wetlands is not being met” (NAS 2001, p.2). The Academy found that federal wetland mitigation policies have failed because they place too much emphasis on creating artificial wetlands without regard to whether such wetlands can become self-sustaining, and because mitigation projects have often failed to “provide the necessary... plant and animal communities, including buffers and uplands, necessary to achieve the desired wetland functions”(id. at 4).

The Academy pulled together and reviewed a large number of studies that examined the rate of compliance with mitigation requirements under 404 permits. Based upon these studies, the Academy concluded that the present rate of compliance is dismal. Specifically, the

Academy found that only seventy to seventy-six percent of required mitigation is even implemented, and of that, only about half meets permit requirements (id. at 101). In the words of the Academy, these figures indicate that the Nation's wetlands permitting programs have resulted in “a substantial net loss” of wetlands (id).

The Report ultimately concludes that to remedy these deficiencies, “[i]t is of paramount importance that the regulatory agencies consider each permitting decision **over broader geographic areas** and longer time periods by **modifying the boundaries of permit decision** in time and space” (id. at 8) (Emphasis added). In other words, the incorporation of the surrounding landscape, including upland buffer areas, is critical to the success of wetland mitigation.

## THE SCIENCE OF UPLAND BUFFERS

It is not surprising that the Academy reached the conclusions that it did, given the mounting body of scientific evidence concerning the benefits of upland buffers in wetland preservation. This literature recognizes that wetlands are subject to many types of disruptions and disturbances that originate in surrounding upland areas, and that the best way to reduce or eliminate these impacts is to secure an upland buffer zone between the wetland and the source of the potential impact (Castelle et al., 1994). The benefits of these upland buffers include the filtering of sediments and pollutants from runoff, erosion and flood control, reduction of human impacts, and maintenance of wildlife habitat (id).

Buffer widths vary depending on the circumstances. Smaller buffers are indicated where the value of the wetland is low, the buffer is in good condition (densely vegetated) and the impact from adjacent land uses is low. Conversely, greater buffer widths are needed for high value wetlands, where the buffer is not densely vegetated and where adjacent land uses are intensive. In addition, larger buffers are needed for wildlife habitat protection, particularly where important or sensitive species are involved. According to the literature, an appropriate buffer width for most water quality functions is 100 feet from the edge of the wetland, whereas widths for specific habitat purposes may extend as far as 840 feet from the wetland edge (Chase et al., 1995).

Based on this scientific evidence, several states have incorporated buffer zone protection into their land use, management and planning programs. In Washington, for example, the State Department of Ecology, (*continues pg. 10*)

# Lake Bonneville Comes Alive! FoGSL Takes its First Field Seminar

By Heidi Hoven

Anyone could see that our view of Great Salt Lake was about to change forever. Early one September morning, a group of FoGSL members joined Dr. Don Currey and Ph.D. candidate, Holly Godsey Bennett to learn about their research endeavors of the geologic history of Lake Bonneville. What was not quite tangible until that morning, was the major geological and climatic processes that shaped the sleepy valleys of Great Salt Lake and the Great Basin.

Our first stop was by the side of the road as you head towards Tooele. I've driven past this spot many times on my way to windsurf at Rush Lake and never given it a second thought. However, observant and well trained eyes such as Don's and Holly's soon exposed the abrasion platform, a critical key to the formation of the Stockton Bar.

With some help from the experts, the untrained eye could see evidence of an ancient shoreline, formed by wind-driven long-shore currents. It is this location that Don and Holly speculate contains the parent material of the Stockton Bar. So far, they have determined that the lithic material at the Stockton Bar is of Oquirrh Formation Quartzite - the same that is found at the abrasion platform. Additionally, the parent material, which was highly fractured by fault block tectonics, was often rounded by movement to the Stockton Bar. If the material that formed the Stockton Bar came from the abrasion platform, it was transported approximately 6 kilometers in distance by wave action and currents of Lake Bonneville. As part of her dissertation, Holly will calculate a mass balance to determine whether the lithic material removed from the abrasion platform was enough to make a deposit as large as the Stockton Bar.

The Stockton Bar is a composite of bay mouth barriers and beaches and you can see its complexity as you drive to its highest point, which is at an elevation of 5250 feet. From this point, you can easily discern the many shorelines that were formed as Lake Bonneville rose.

One of the last lake deposits before the Lake Bonneville flood is located within the Stockton Bar. It is a sand deposit, which has been eroded and exposed over the years. When sifting through the sand, tiny shells of 14,700 year old gastropods and bivalves appear before the naked eye. Most common are *Pyragalopsis* sp. and *Stagnicola bonnevillensis* - both freshwater organisms that are intolerant of salty water and are found only at the mouths of bays and inlets. Shortly after this final deposit was made, the natural barrier of Lake Bonneville's northern shore collapsed (near Zenda, Idaho). The lake dropped over 300 feet in less than one year, leaving geologic features such as the Stockton Bar and abandoned shorelines high and dry. The lake then restablized at a new lower level where it remained for about 1000 years, forming the Provo Shoreline. These geologic features, otherwise known as geoantiquities, are under constant pressure from human-related activities. Current impacts rise from residential development, gravel pits, transportation and recreational activities. Both Don and Holly are actively working to educate communities of the value of these unique geoantiquities that risk being lost forever and are helping the communities work towards more thoughtful planning and resourceful uses of these gigantic wonders of the past. 🐾

## Special Thanks

Special thanks to the Walbridge Fund for their generous support  
and to all of you who have made donations to the legal fund  
for the Transit First/Legacy Highway lawsuit campaign.



# The Winter Great Salt Lake Field Seminar Series: The Eagles

By Amy Coombs, FRIENDS Intern

Join us on March 9th as we take bird watching to a new level of scientific splendor and methodological merriment with Dr. Bob Walters from the Division of Wildlife Resources. Although we are likely to observe many of the birds that winter at the Great Salt Lake, we will dedicate our outing to a pair of nesting bald eagles that call the lake their permanent home. As the pair has successfully reproduced offspring every year since 1996, and as the pair is one of only four nesting pairs in Utah, we will truly be observing a local treasure. Dr. Walters will provide background information on the nesting pair and share his expertise on the larger wintering population. If you would like to rub elbows with a nationally renowned expert on bald eagles, and if you would like to incorporate a scientific eye for detail into your bird watching hobbies, be sure to sign up.

Call 583-5593 to register. Leave your name and phone number on the recording and we will call to confirm your reservation and give further information about a meeting location. The program will run from approximately 8:30 to 12:00 noon and registration is based on a first come first serve basis. To maintain an intimate learning environment, space is limited to ten people. A van will be provided and a fee of \$10 will be due on the morning of the outing (\$15 non-members). For more information, contact Heidi at 322-3407 or send email to [hhoven@swca.com](mailto:hhoven@swca.com). 🦅



Photos by Gary Crandall

has adopted a Model Wetlands Protection Ordinance that contains a recommended buffer of 200 to 300 feet for the State’s highest quality wetlands (Castelle et al., 1992). In addition, the Washington Department of Wildlife has recommended that wetlands with important wildlife functions should have 100 to 300 foot buffers depending on location and adjoining land use (id).

In New Hampshire, the Department Environmental Services has proposed wetland mitigation rules (April 9, 2001; <http://www.des.state.nh.us/wetlands/rule-law.htm>) specifically requiring upland buffer zones for vernal pools, an eastern type of wetland that is the near equivalent of a western playa. These proposed rules require that upland buffers “shall be the greater of 20 acres or 50 times the total surface area of the impacted vernal pool.” The proposed rules also provide extra mitigation credit for buffer zones extending to 1000 feet from the edge of the vernal pool, with maximum extra credit for buffer zones out to 300 feet.

Some states actually mandate protection of upland buffers. For example, New Jersey’s Freshwater Wetlands Protection Act, N.J. Stat. § 13:9B-1 et seq. (2001) provides for regulatory protection of upland buffer areas (called “transition zones”) of up to 150 feet in many areas and up to 300 feet in the New Jersey Pine Barrens. Similarly, Maryland provide mandates protection of buffer zones of up to 100 feet in width in freshwater wetlands of “special concern.” Maryland Environment Code Ann. § 5-906 (2001).

It is important to note that statutes such as New Jersey’s and Maryland’s are regulatory in nature, i.e., they restrict the activities of landowners in areas that qualify as buffer zones. Thus, the buffer widths they specify tend to be conservative, representing minimum standards rather than optimal ones. Nevertheless, the fact that these states mandate any protection at all provides very strong justification for the Corps decision here to approve an upland buffer as part of a mitigation plan submitted by UDOT.

The standards specified in a mitigation/preservation context, such as the Washington standards and the proposed New Hampshire regulations, represent the best models for comparison in this case because they are attempting to achieve optimal benefits for the protected wetland. These examples suggest that as a general rule a buffer width of at least 300 feet would be appropriate for important wetlands in a mitigation preserve.

## **THE APPROPRIATE UPLAND BUFFER FOR THE PRESERVE**

The dispute in this case concerns the southern end of the preserve, where plaintiffs’ property and almost all of the uplands are located. Here, the preserve extends from the western edge of the proposed highway corridor to the Jordan River. The west side of the preserve is predominantly wetland, consisting of emergent marshes in the river bottom that will be restored under the mitigation plan. The center and eastern parts are the upland area, and this is where the saline playas are located. They are scattered throughout the upland area (FEIS Figures 3-22 and B3-3).

While the plaintiffs may be correct in pointing out that the upland acreage is approximately double that of the wetland acreage, this raw acreage comparison begs the question of how much upland is needed to buffer the preserve’s wetlands, particularly the saline playas. The upland buffer here has two basic purposes – protecting the water quality and habitat values of the wetlands in the preserve, plus the additional purpose of preventing development from spreading to the west side of the highway and impairing other wetlands located outside the preserve (FEIS p. B3-21). Based on the first purpose alone, the science indicates that the amount of uplands included in the preserve is not excessive.

The relevant considerations regarding the issue of buffer width include the fact that the wetlands in the preserve are a vital part of the Great Salt Lake Ecosystem, that their purpose is to serve as habitat for many species of birds and animals, and that during the Lake’s flood cycles they will likely be the only available habitat for many wildlife populations. In addition, saline playas are becoming relatively scarce in the Great Salt Lake ecosystem. The uplands that make up the buffer in question are not thickly vegetated and therefore will not be as effective in screening out noise and other impacts from the highway and other surrounding land uses. Finally, the surrounding land uses - the highway bordering the preserve and the urban and industrial sprawl that will inevitably spring up along it - are intensive, to say the least. All of these considerations point to the need for a large buffer providing a high level of protection. Under these circumstances the science would appear to call for a buffer width of at least 300 feet.

Assuming that a 300-foot buffer from the edge of each wetland is appropriate, it is a simple matter to superimpose this

buffer over the FEIS’s wetland delineation to see how many uplands are included in the buffer. The result is shown in Figure 2. Almost all of the uplands fall within the 300-foot buffer zone. As for the small and isolated fragments that fall outside the 300-foot buffer, it would make no sense to exclude them from the preserve or to leave them under separate ownership. Thus, it appears that the decision to include all of the property between the highway and the river was appropriate for the protection of the wetlands in the preserve. To the extent additional justification is needed, it should be supplied by the secondary purpose of the buffer – the protection of other wetlands outside the preserve from encroaching development.

### CONCLUSION

In its report on national mitigation policy, the National Academy of Sciences made the following recommendation to improve the success of wetland mitigation projects: Adopt a dynamic landscape perspective. Consider both current and future watershed hydrology and wetland location. Take into account surrounding land use and future plans for the land. Select sites that are, and will continue to be, resistant to disturbance from the surrounding landscape, **such as preserving large buffers** and connectivity to other wetlands. Build on existing wetland and upland systems. If possible, locate the mitigation site to take advantage of refuges, **buffers**, green spaces, and other preserved elements of the landscape.

(NAS 2001, p. 105) (emphasis added). For the reasons set forth in that recommendation and elsewhere in this Brief, the Utah Wetlands Foundation urges the Court to uphold the decision of the Corps of Engineers to approve the inclusion of the upland buffer zone in the Legacy Highway mitigation preserve. 🐾

### REFERENCES

- Castelle, A.J., A.W. Johnson, and C. Conolly. 1994. Wetland and Stream Buffer Size Requirements –A Review. *J. Environ. Qual.* 23:878-882.
- Castelle, A.J., C. Conolly, M. Emers, E.D. Metz, et al., 1992. *Wetland Buffers: Use and Effectiveness*. Washington Department of Ecology, Olympia, Pub. No. 92-10.
- Chase, V.P., L.S. Deming, F. Latawiec. 1995. *Buffers for Wetlands and Surface Waters: A Guidebook for New Hampshire Municipalities*. Audubon Society of New Hampshire.
- Dahl, Thomas E. 1990. *Wetlands Losses in the United States 1780's to 1980's*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C: Available online at <http://www.npwrc.usgs.gov/resource/othrdata/wet-loss/wetloss.htm> (Version 16JUL97).
- NAS (National Academy of Sciences). 2001. *Compensating for Wetland Losses Under the Clean Water Act*. Washington, D.C.: National Academy Press. Available online at <http://www.nap.edu/books/0309074320/html/>.
- Rawley, E. V. 1980. *Wildlife of the Great Salt Lake*, pp. 287-304 in Gwynn., J.W., ed., *Great Salt Lake—A scientific, historical, and economic overview*. Utah Geological and Mineral Survey Bulletin 116.
- USGS (U.S. Geological Survey). 1996. *National Water Summary-Wetland Resources: Utah*, pp. 375-380 in U.S. Geological Survey Water-Supply Paper 2425. Department of Interior, Washington, D.C.
- Utah Division of Wildlife Resources. 1992. *Wilson’s phalarope*. Utah Division of Wildlife Resources Notebook Series No. 6, 4 p.

# Visitor Facilities Planned at The Nature Conservancy's Great Salt Lake Shorelands Preserve

*Joel Peterson, Great Salt Lake Science, Research and Planning Coordinator*

Human encroachment, higher visitation, and trespass in closed areas have created a need to manage visitor access to the Great Salt Lake Shorelands Preserve (formerly known as Layton Wetlands Preserve). Currently, we do not have a system to contain visitor activity, resulting in foot travel into sensitive areas, impromptu trails and other inappropriate activities including out-of-season shooting. Land that is initially protected through purchase or restrictive easements does not necessarily remain protected without certain ongoing management activities.

We propose to protect the wetland and avian resources by constructing a minimal visitor facility which will provide a purposeful visitor opportunity in a monitored area and the opportunity to educate visitors about the Great Salt Lake Ecosystem.

Migratory birds, and in this particular case shorebirds and waterfowl, are susceptible to impacts from human disturbance. There are documented declines in shorebird populations due, in part, from human disturbance and impacts to their habitat.

The primary benefit from facilities is to provide improved human access management and a more purposeful educational experience that is protective of the wetlands and wildlife. Without an entrance facility, public interface area and specific trail/boardwalk structures, the area is prone to being trampled with these unmanaged activities.

Further, disturbance to foraging and nesting birds can be reduced by establishing a more predictable human presence. By restricting visitors to a trail, boardwalk or observation tower, we will be able to minimize human disturbance to shorebirds and waterfowl.

The facilities plan includes an approximately 1000 foot access road, a foot path about 500 feet in length, an open-air pavilion for a gathering space, about one mile of boardwalk and an observation tower.

The facilities are located principally on upland ground and incorporates boardwalk to traverse wet areas. The trail will preempt an array of persistent impromptu trails.

The facilities design and interpretive/educational message is sensitive to the natural conditions of the Preserve.

They provide a way for people to experience this important environment while improving our ability to manage wildlife/human conflicts. For example, the observation tower gives visual access to the property while avoiding displacing foraging and nesting waterbirds and providing an opportunity to remotely view colonial nesting birds without disturbing them.

Proposed material for the facility is reclaimed wood from the Great Salt Lake railroad trestle which has been preserved in this salty environment for nearly 100 years.

Our visitor facilities will be designed and constructed to provide guests an intimate experience, in which they are encouraged to slow down, listen, learn, and find an emotional connection with the land. The facilities will support educational and interpretive programs by giving exposure to diverse wetland and upland habitats, by wildlife viewing opportunities, by providing areas for quiet reflection, with comfortable facilities for structured and informal education and for private exploration.

The Nature Conservancy is particularly aware and sensitive to environmental disturbance on the Preserve and at this particular site. We believe that these minimal facilities will help us to protect the wetland and wildlife resources. 🌿



# Return to the Great Salt Lake After a Visit to the Mississippi Delta



Photos by Gary Crandall

When you return from wandering,  
you go down on your knees  
on the salted beach,  
sift sand through fingers,  
and inhale sharp pungency.  
It stings raw abrasions  
and you become one with water  
that knows no constancy,  
that beckons to those  
unafraid to be lonely.

This lake keeps moisture to itself  
and scant plants, the halophytes,  
growing in the salty drape.  
Long green ribbons of hills  
covered with toadflax are caught  
in this mirror where various shades  
of cobalt reflect from the sky.

You have returned to wilderness  
that stretches toward islands  
inhabited by pelican and ibis  
where plovers scurry and poke  
between pickleweed and alkali bulrush.  
Red tides of fairy-like brine shrimp  
float on the surface,  
banquets for guests who fly  
hundreds of miles for the gathering.  
You are joined by avocet and stilt  
wading on delicate stick legs in the marsh  
where skeins of wild wings settle and feed.

There are those who prefer greenness,  
close and persistent, where trees  
swagged with curling grey parasite  
dip heavy arms in mud-thick water,  
where alligators snap and sun.

But you are relieved to stand  
in this wildness  
and watch the sun  
slip behind Stansbury Island  
streaking this holy water,  
this sky with living flame  
fading to lavender, deep purple  
to catch and hold the first star.

Elaine L. Ipson 🇺🇸

*Previously appeared in Petroglyph*

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## Doyle W. Stephens Research Assistance Scholarship

FRIENDS of Great Salt Lake has established a fund in memory of Doyle W. Stephens, one of the finest scientists dedicated to understanding Great Salt Lake and its systems. Income from the fund, administered by the FOGSL research committee, will be awarded to supplement under-graduate and graduate level research projects that are investigating Great Salt Lake systems. We need your help building the fund. Please send your check to payable to FRIENDS of Great Salt Lake indicating that it is a contribution for the Doyle W. Stephens research assistance scholarship. When developed, guidelines for the scholarship will be posted on our website and appear in subsequent newsletters.

**Thank you!**

FRIENDS of Great Salt Lake wants to thank the following businesses for their generous support: **Xmission.com** for donation of services to support us on the World Wide Web and **Tooele Transcript Bulletin** for supporting our printing needs.

### SUBMITTING MATERIAL FOR PUBLICATION

**WANTED:** Original articles (historical, geological, geographical, biographical, political, fiction, poetry, etc.) or art work (sketches, photographs, etc.) which pertain to Great Salt Lake.

**Mail or Deliver to:** 1117 E. 600 S. Salt Lake City, UT 84102,  
**E-mail to:** ldefreitas@earthlink.net. Please call 801-583-5593 to confirm receipt of e-mail or with any questions, suggestions, comments, or ideas.

**Deadlines:** Sept. 16 (Fall), Dec. 16 (Winter), Mar. 16 (Spring), and June 16 (Summer).

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## The Importance of Your Membership

The strength of FRIENDS comes from its members. All of you, with your individual contributions to Great Salt Lake awareness, help provide this organization with the momentum it needs to carry on its work for the lake. We all know about the tremendous challenges and opportunities for Great Salt Lake. Knowing those challenges and opportunities, FRIENDS' board of directors works hard to identify the best ways to respond to them. Some of our critical activities:

- The Legacy highway campaign
- Commenting on the Great Salt Lake Comprehensive Management Plan
- Educating the public at large about the importance of our big, salty neighbor
- Participating in public hearings and on committees that address development around the lake,

But without the support and participation of the membership, the work of the board is limited. General meetings, field trips, and volunteering are all ways that you can help build public recognition of FRIENDS and its mission. Through these means, you also become more knowledgeable about the lake, its science, its history, and our relationship to it.

One of the goals that the board continues to identify at its annual retreat is building membership. How can we develop a robust and active membership? We need to develop a critical mass of lake advocates, true friends of Great Salt Lake.

So, FRIENDS is asking you, our members, to keep active through participation and by keeping your membership current. Check your mailing label for your membership renewal due date. Renew promptly if you have expired. If you have questions about your membership, please call Lynn at 801-583-5593.

And do what you can to help recruit new members to strengthen our voice for Great Salt Lake protection and preservation. Consider a new year's gift to FRIENDS - recruit a new member. Pass on your newsletter to a friend or neighbor. Spread the news about who we are and how we are working for Great Salt Lake.

**Big Thanks!**

PS. Does this sound like your mother?

Lake Fact Answer:

4

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Enclosed is a check or money order for my annual membership fee in the amount of: **(check one)**

- \$10 Student "Brine Fly"
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For more information on these programs, contact Bruce Thompson at 801-467-3240

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