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Terminal Mirage #214 - 12 by David Maisel, ©2003

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FRIENDS of Great Salt Lake

P.O. Box 2655, Salt Lake City, Utah 84110-2655 801-583-5593
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Volume 10 Number 1 Fall 2003

Terminal Mirage #251- 4: David Maisel, © 2003

The mission of FRIENDS of Great Salt Lake is to preserve and protect the Great Salt Lake ecosystem and to increase public awareness and appreciation of the lake through education, research, and advocacy.

President's Message

The Cost of Contamination

"Selenium remains one of the least understood, least regulated, of all toxic elements..."

-Tom Harris, *Death in the Marsh*

It's a complex issue of epic proportions. Nearly 20 years ago, the State of Utah filed a Natural Resources Damage Claim (NRDC) against Kennecott Utah Copper (KUC), for groundwater contamination from mining activities. A settlement agreement was forged and in 1995, a Consent Decree was issued. The Decree includes a number of requirements that must be met over the next 40 years.

Farmington Bay Sunrise by Bruce Andersen
baphoto@centurytel.net

Among these requirements is that KUC must clean up two contaminated deep aquifers (ZoneA in Copperton and ZoneB in South Jordan). These are called the Affected Areas. The project must also provide municipal quality drinking water to the public in the Affected Areas. These areas fall within the jurisdiction of the Jordan Valley Water Conservancy District (JVWCD).

The contaminants consist of acids and high concentrations of total dissolved solids (TDS) which include sulfates and heavy metals. In Copperton, Zone A, where KUC would control operations, specific wells would extract the acidic water and slurry it directly to the tailings impoundment. Other wells would draw the sulfate tainted water and pump it to a treatment facility to undergo a filtering process called reverse osmosis. According to the numbers, JVWCD would be able to deliver approximately 3,500 acre feet of water each year to those residents.

In Zone B, South Jordan, operated by JVWCD, wells would pump the contaminated water to a treatment plant at JVWCD's headquarters. Here, instead of being slurried to the tailings impoundment (because of the cost), the concentrates of TDSs, which includes selenium(292 lbs/year) and (25,000 tons of salts annually) would be discharged directly into the Jordan River, eventually ending up in Farmington Bay.

Farmington Bay is a likely candidate to be designated an Important Bird Area by National Audubon because of its huge numbers of waterbirds.

Selenium has adverse biological effects on waterfowl and aquatic marsh life. Selenium bioaccumulates and causes reproductive dysfunction, birth defects and death. A painful example is the massive selenium contamination that occurred at the Kesterson National Wildlife Refuge in California during the 1980s.

The Division of Water Quality (DWQ) suggests that the sulfates and selenium would be "mixed" at specific discharge points along the Jordan to keep the concentrations within the water quality standard. The success of the mixing is linked to a specific cubic feet/sec of water flow. But what happens during drought cycles when waterflow is low? And what happens when and if selenium begins to collect in the sediments of the wetlands?

The plan also includes compensating JVWCD for "Lost Use" that would have otherwise come from the groundwater, now contaminated. For now, this will be achieved by drilling 5 wells into the shallow aquifer of the Jordan River. Long term plans call for nearly 100 wells. Nobody knows what effect pumping water from the shallow aquifer will be on the water-

flows in the Jordan. Nor has there been much discussion about the additional concentrates that would come from that process, and how this combination would impact the wetlands along the Jordan.

On September 17th, FRIENDS filed a legal request with the Department of Environmental Quality to withdraw the Utah Pollutant Discharge Elimination System (UPDES) permit that was issued to JVWCD. The permit would allow the discharge of contaminants into the Jordan River from Zone B and from the shallow aquifer wells.

We did this because we have always advocated a watershed approach to the management of Great Salt Lake and its tributaries. And we have frequently expressed concerns over the increased loading of effluent in the tributaries of Great Salt Lake, as nearly all the effluent deposited in these tributaries will eventually run into the lake.

And since we advocate a system wide approach, we believe that before any new authorizations for discharges into either the lake or its tributaries are approved, DWQ should take a step back to assess the past, present, and foreseeable impacts to Great Salt Lake and thereafter, develop a plan that incorporates enormous utility of the lake to the public. For in failing to take a sound ecological approach, DWQ fails to address some of the basic questions concerning the lake's ecology.

FRIENDS of Great Salt Lake believes that there are many questions that need answers before this plan can procede. The State, KUC and JVWCD should be able to guarantee the public that by cleaning up one source of contamination, they don't create another.

In saline,

Lynn de Freitas

What You Can Do

The public comments are being accepted until November 1st. Review the documents at www.deq.utah.gov. Or at the West Jordan City Hall, 8000 S. Redwood Road, West Jordan, and at the Utah Department of Environmental Quality, 168 N. 1950 West, Salt Lake City. 8:30 AM to 4:30PM

Send comments to: Trustee via email at nrdtrustee@utah.gov or by fax to 801-536-0061 or by mail to the Utah Department of Environmental Quality, NRD Trustee, P.O. Box 144810, Salt Lake City, UT 84114-4810.

For more information, call 801-536-4402

Friends Organizational Statement

The mission of FRIENDS of Great Salt is to preserve and protect the Great Salt Lake Ecosystem and to increase public awareness and appreciation of the lake through education, research, and advocacy.

FRIENDS has a very active Board of Directors and an Advisory Board consisting of professionals in the scientific, political, literary, education, and broadcast communities. Founded in 1994, we have organized and sponsored an array of programs, activities and materials in pursuit of our mission.

Since 1996, we have sponsored a biennial Great Salt Lake Issues Forum that provides a gathering for policy makers, researchers, planners, industry reps and citizens who are involved in and concerned about the Great Salt Lake.

The goal of each 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, we hired Bruce Thompson as our 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. Bruce wrote and produced a live-narrative slideshow program "The Lake Affect: Living Together Along the Shores of Something Great." Over 11,000 people in the 5 counties surrounding Great Salt Lake have seen the program.

We are presently working on video & DVD versions of The Lake Affect. With this and the Project SLICE, a Great Salt Lake curriculum correlated to the fourth grade science core curriculum, we hope to achieve a positive, long-lasting impact on the future of Great Salt Lake and those who dwell upon its shores.

In 2003, we awarded our first Doyle W. Stephens research scholarship. Until his death in May 2000, Stephens served as a research hydrologist for the U.S. Geological Survey. He is particularly remembered for his work toward increasing public awareness of the Great Salt Lake Ecosystem.

FRIENDS was awarded the Conservation Achievement Award by the Utah Chapter of the Wildlife Society in 1998.

Fall 2003 Calendar of Events

Check the local papers and www.fogsl.org for announcements of speakers and topics at our General Programs, or call our hot-line at 801-583-5593, and press 1 for monthly activities.

NOTE: General Programs are held at the Sugarhouse Garden Center, located in the northeast corner of Sugarhouse Park, 2100 South 1650 East in Salt Lake City.

On the Cover

***Terminal Mirage #251-4* - David Maisel, ©2003**

For the past twenty years, I have been making aerial photographs of environmentally impacted landscapes, in a series called Black Maps. These images have as their subject matter the undoing of the natural world by the wide-scaled human intervention in the landscape.

The most recent chapter of this work is Terminal Mirage. Inspired by Robert Smithson's apocalyptic writings on the Great Salt Lake. Thus far, at the project's outset, I have photographed at Smithson's Spiral Jetty, both from the air and on the ground. It is above the surface of the lake for the first time in decades, encrusted with salt; the water surrounding the jetty is blood red. I have also made aerial images at the Tooele Army Depot, where 900 munitions storage igloos sprawl across the valley floor, and at the site of evaporation ponds covering some 17,000 acres along the eastern and southern shores of the lake.

David Maisel - david@davidmaisel.com

An Excursion About Life

A Commentary on Antelope Island

I
Voices of wind
Echoes of breeze
Of lusting cold, clinging
Like a warm winter's lover

II
This silence; screaming serenity
Violating my eardrums
And sounds of retreating shoreline
Hanging on thread of naked rock.

III
Salt-air delicacy
Weaving with fresh, virgin breath
Tasting the solemn emptiness
Of the un-buoyant sea.

IV
Half-dead wheat grass
Wisdom of sage
Committing acts of fornication
About my unsheathed nostrils.

V
Bison; mountain king
Watching the indolence of man
About inundation of endless salty waters
About the sunset of dawning human life.

This place
Paradigm oasis
Amidst a salty sea
The Great Basin
The Great Salt Lake

This
Is Antelope Island

by Eli Pearson
Brighton High School

Moon Over Antelope Island by Bruce Andersen
baphoto@centurytel.net

Productivity and Peril

An Industry Insider's Perspective on the GSL in Times of Drought

As the heat of summer eases into the past, and the elevation of the Great Salt Lake begins to slow its precipitous decline, we find ourselves once again confronted with the imminent task of harvesting brine shrimp (Artemia franciscana) cysts (eggs) for commercial purposes. It is the time of year when the raucous circus of brine shrimp fishermen returns for its annual routine of endless days and nights working on the saline lake. This influx of rough hewn characters, powerful harvesting vessels, smoke-belching speed boats, slinging cables, heavily laden trucks, and surging forklifts, is often viewed by those who enjoy the serenity of the lake as the dreaded annual migration of miscreants, returning to exploit the lake's resources.

To the fishermen, it marks the arrival of their opportunity to work and to provide income for their families. With the declining stocks of most fisheries, coupled with reduced market value of fish, many of these fishermen are solely dependent upon the GSL Artemia industry for their income. As someone who is involved with the industry, yet immersed in ecological studies of Artemia throughout the world, and concerned not only about the business aspects of Artemia, but the integrity of the GSL ecosystem, my perspective regarding the onset of the harvest season is a mixed one. It is a combination of unbridled anticipation, scientific curiosity, and pendulum swings of dread and enthusiasm.

September not only brings the synchronous ballet of phalaropes to the GSL, but it is also the time of year of verification of our research and modeling efforts. We have a rigorous ecological monitoring program on the GSL, and on other salt lakes throughout the world. Every week we collect samples from 12 sites in the South Arm of the GSL. From these 12 locations we examine pooled samples from the bottom to the surface, as well as from discrete intervals within the water column. Our evaluation of the samples includes both zooplankton and phytoplankton. We measure a variety of abiotic factors as well (e.g., temperature, salinity, dissolved oxygen, transparency, and Chlorophyll A). We keep a record of relevant information on the biota of the lake and of any unusual or noteworthy observations. It is an arduous task for the two of us conducting this research as the combined samples that we measure every week results in thousands of separate counts and hundreds of biological statistics. It is tedious, very time consuming, costly, but always fascinating. This information is highly relevant to decisions regarding the GSL. It is shared with the Division of Wildlife Resources (DWR) and other research groups, and has already proven to be a useful tool for making prudent and ecologically balanced resource management decisions. Our data is used to develop predictive models of Artemia population dynamics and of the potential production of cysts in the fall. We have been engaged in this intensive ecological monitoring program since 1999, and in doing so, we have gained a very detailed understanding of the GSL and many of its ecological processes. But there is still much that we do not know.

By most measures the GSL remains a healthy and favorable environment for Artemia. This year the Artemia have undergone familiar patterns of expansive population growth, followed by depletion of the micro-algal food base due to over-grazing, and subsequent collapse of the Artemia population. This

year the algae have been slower to recover, especially in the warmest summer months. However, the cooling of the lake this fall, coupled with a very low abundance of Artemia in early September, has allowed the phytoplankton to recover and the Artemia have similarly responded over the past few weeks with robust growth and production. The result is that there will be another year of tremendous production of Artemia cysts.

One may assume that this benefits the brine shrimp industry and that we are content with the forecast. However, this is not the case for those of us who are concerned with the broad scope of the lake and its ecological functions---there are many reasons to be worried about the integrity of the lake and its surrounding environs. The extremely low lake level, diminishing wetlands, newly created expansive areas of salt-laden playa, and the loss of water barriers protecting critical nesting habitat on the lake's scattered islands could all have potentially detrimental impacts on the biota that depend upon the lake for reproduction and survival. The diminution of water barriers to the islands could allow easy access for mammalian predators to critical nesting habitat. The loss of wetlands is always of paramount concern. Additionally, the declining lake elevation, and the formation of vast areas of desiccated former lake bottom sediments, will greatly increase the airborne transport of dust and salt along the Wasatch Front. The impacts from a continued decline in the lake's elevation could therefore impact humans as well as the biota that utilize the lake. Simultaneously, there is an apparently healthy Artemia population and a host of environmental risks confronting the GSL.

There is a logical convergence of shared interests, values, and intentions between the brine shrimp industry and those who have no association with the industry, but care deeply for the GSL. There are clear benefits to be gained through the recognition of these similar interests, however, the opportunities for working together are often squandered by acting in isolation or through the myopia of entrenched antagonism. Some very notable gains for the research and management programs on the GSL have already been realized from the brine shrimp industry fees. The results of these projects have provided a foundation of knowledge from which sound management decisions have been made. This benefit is abundantly clear and the funds continue to provide for additional research projects. Yet, we are at a critical time in the lake's history when broad issues pertaining to the GSL, on a scale as large as the watershed, need to be confronted in a systematic and cohesive manner. I believe that a laudable goal for all of us who respect, explore, and cherish the GSL, is to promote the right of the GSL to receive water and nutrients sufficient to sustain its ecological functions. This objective is highly relevant at a time when the annual precipitation cannot sustain the insatiable thirst of urban sprawl along the Wasatch Front. Under such constraints, the inherent value and rights of the GSL can easily be overlooked. Unless this is fully understood and defended by a coalition of industry and environmental groups, the fate and future of our lake may be jeopardized.

Brad Marden has worked in the brine shrimp industry since 1992 and the opinions expressed in this article are his own.

ASK ARTEMIA - WE WELCOME YOUR QUESTIONS VIA EMAIL OR PHONE

Ar-te'-mi-a, noun; a genus of brine shrimp belonging to the subclass Branchiopoda

Dear Bruce,

I was so disappointed not to be able to take your class again this summer and would love to see what was offered this year. I am teaching from the Project SLICE materials and planning my fall trip to GSL and I have a couple of questions.

How is the brine shrimp watching at Bridger Bay beaches on Antelope Island at the present time?

Could you come and present "The Lake Affect" slide show at St. Sophia's for free? We have no money.

Last year you were talking about putting "The Lake Affect" on video. Is it available for purchase?

I love teaching from your curriculum, and the students love it as well.

Thanks, Bruce, for all your help.

- Patti

Hi, Patti . . .

Good to hear from you! Let me attempt to answer your recent questions.

BRINE SHRIMP at BRIDGER BAY BEACHES are still doing their thing -- swimming, eating, reproducing. Their algae-consuming habits are quite evident in the clarity of the water. They are now beginning to undergo food stress from the reduction of algae that results from the collective consumption of their expanded late-summer numbers combined with cooler temperatures and shorter days. This means they are gradually shifting from giving life birth, as many have been doing over the summer, to laying cysts, which will overwinter until next spring (or be harvested in late fall).

My preference for visiting Bridger Bay now -- because of the lakes low level (today at 4195.6 feet, or nearly 7 feet below normal) -- is to avoid the LONG trek from the beach area by gathering at the Ladyfinger Point Parking Lot. There is a shaded picnic table and restroom there, and if you arrive well before noon you can reserve the table with your stuff while you take your group down to the water. There is a trail down to the shoreline and the gradient there means you only need to go a short distance to get to the knee-deep water. The lake bottom is mostly ooids and flat rocks (a.k.a. oolitic limestone). The only two minor disadvantages of this site are that (1) there are no outdoor showers to rinse off, and (2) you need to negotiate a short stretch of large cobbles at the bottom of the trail to get to the water.

Two other nice perks to this site are (1) the likely presence of orb weaver spiders along the trail -- great opportunity to speak to upland zone food chains and another value of brine flies, and (2) the evidence of shoreline debris showing the lake level during the high water period of 1986-87.

THE LAKE AFFECT SLIDE SHOW is available to schools at half-price, but this is still $74. We just cannot afford to finance TLA presentations AND move ahead with the costs of completing the SLICE curriculum, though we surely wish we could.

THE LAKE AFFECT VIDEO really IS now moving forward toward final production. As you may know, we hit a snag last year with our contact at Fox 13 not being able to meet our technical needs. Now it looks pretty certain that our new contacts with KSL-TV and bTreemedia.com will complete the video by the spring.

As always, your questions -- and support -- are welcome. Call or eMail ANY TIME!

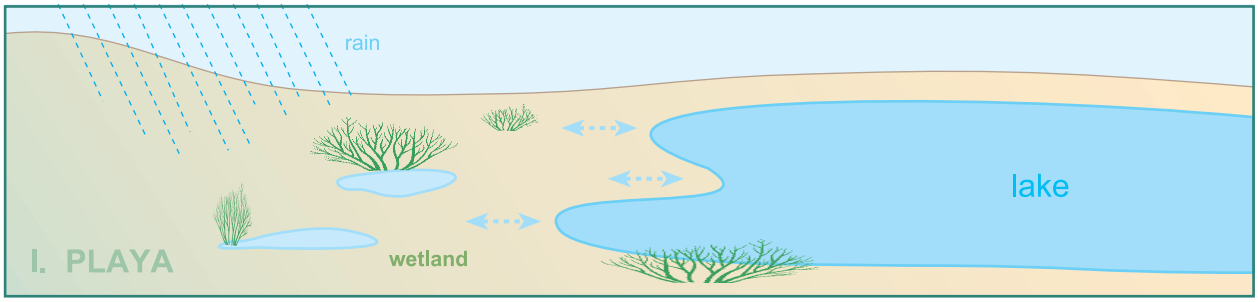
Warm Regards,

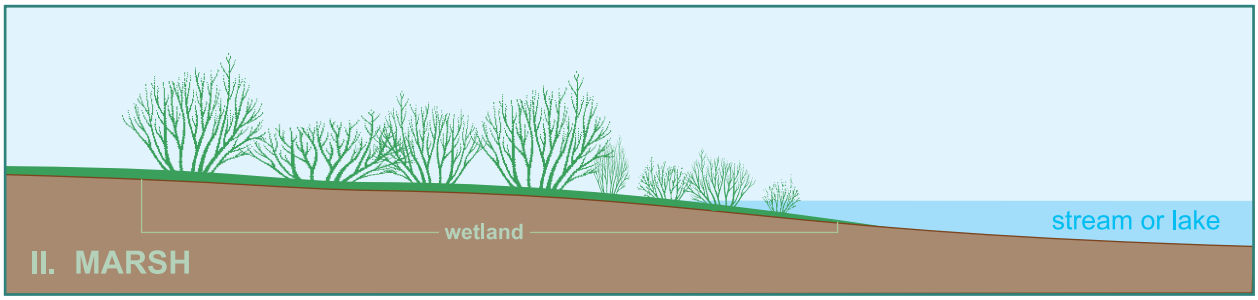
Bruce Thompson
Education Director

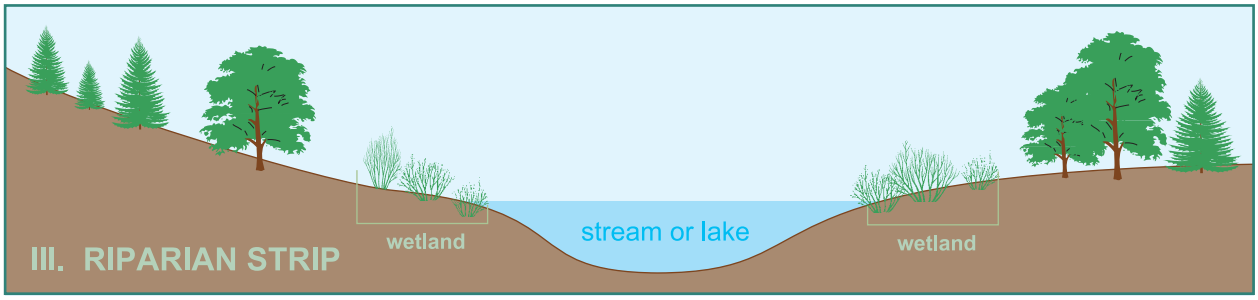
Lake Fact:
In order of creation, what are the 4 major shoreline elevations around GSL?
See page 15 for answer.

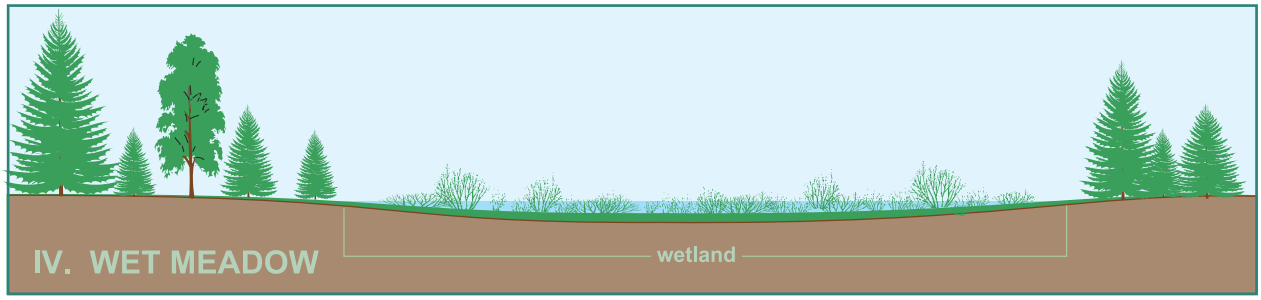
A Slice of SLICE

Main Forms of Utah Wetlands









PLAYAS

...contain shallow lakes and wide flats that are dry on the surface and often wet beneath; with non-woody plants, shrubs.

Precipitation provides most of their water.

MARSHES

...exist in shallow water at the edge of lakes or streams, with non-woody and aquatic plants, shrubs; can be fresh, alkaline or saline.

They depend mostly on Surface Water.

RIPARIAN ZONES

...follow the edges of streams or lakes and usually dry in summer and fall, with a mix of non-woody plants, shrubs and trees.

They depend mostly on Surface Water.

WET MEADOWS

...support grasses and other non-woody plants, with some shrubs; ground is waterlogged in spring and after rains, drier by summer.

Precipitation provides most of their water.

A product of Project SLICE: The Friends of Great Salt Lake Initiative for Conservation Education
Created by Bruce Thompson/ECOTRACS, Salt Lake City, Utah 801/467-3240 • © 2000 FRIENDS of Great Salt Lake www.fogsl.org rev. 07/10/02

Getting to Know Great Salt Lake

By Lindsey Oswald retiring Board of Directors,Vice President

Moxie and Lindsey at the lake

"Too many people have talked about what the lake should be and what the lake should do for us, but very few have ever stopped to listen to what the lake is. Those who do almost invariably fall deeply in love with this shallow lake that speaks a special language…
It is time to shed our misperceptions and misspoken words, to peek behind the mask we ourselves have painted that obscures the face of the lake and seek the true identity of Great Salt Lake."

- Ella Sorensen, Seductive Beauty of Great Salt Lake: Images of a Lake Unknown

A native Utahn, I've spent much of my twenty-nine years exploring the canyon country of southern Utah and the peaks of the Wasatch Mountains. I was passionate about getting to know these places and, eventually, getting involved in the effort to protect them.

Though it was practically in my backyard, I didn't feel the same connection to Great Salt Lake. My only childhood memory of the Lake is floating in its salty waters with my 2nd grade classmates during a field trip to Saltair. All I knew about the Lake was that it offered a scenic foreground for colorful sunsets and that it somehow helped create the light, fluffy powder in which I loved to ski. Like so many of my fellow Utahns, I knew nothing about Great Salt Lake.

My first glimpse into the beauty and magic of the Lake was during college, when I read Terry Tempest Williams' book Refuge, in which she parallels the rise of the Lake and the destruction of the Bear River Bird Refuge to her mother's battle with cancer. I could relate to Williams' strong sense of family and place, and to her intimate connection to the landscape. I knew I wanted to learn more about this mysterious place called Great Salt Lake.

I had the opportunity to do so when I returned home to Utah in 1996, after attending college in Maine. Unsure of what to do with my environmental studies and women's studies degrees, I got a job at the Salt Lake Patagonia Outlet, where I sold clothing and assisted with the company's environmental programs. The store frequently hosted slide shows and

other events to help non-profit groups spread their message. One such group was FRIENDS of Great Salt Lake, a local organization dedicated to preserving and protecting the Great Salt Lake Ecosystem.

After working at Patagonia for a year, I was eligible for the company's environmental internship program, which allowed employees to take a month of paid leave to work for a non-profit organization. I had been impressed by the scope of issues that FRIENDS was working on, so I contacted them to find out if they could use some help.

A few weeks later, I found myself working as a FRIENDS intern. The organization had recently initiated a major education project designed to enhance both knowledge about and care for the future of Great Salt Lake. To do this, FRIENDS hired an Education Director to develop, produce, and present a slide show to the greater Salt Lake community.

As an intern, I helped FRIENDS make this expanded education program a reality. The initial funding only supported the program through the fall, yet the goal was to continue it at least until springtime. I researched potential funding sources and helped FRIENDS develop, write, and send out grant proposals. Though I received my share of rejection letters, my efforts finally paid off: FRIENDS acquired the funding they needed to continue this important effort.

I also helped coordinate the Second Great Salt Lake Issues Forum, an all-day event in downtown Salt Lake City in February of 1998. As conference coordinator, I contacted potential participants, wrote and distributed public service announcements, secured silent auction items from local businesses, and oversaw registration. The forum brought together members of the environmental, business, and academic communities, resource agency personnel, and concerned citizens for presentations on issues concerning the future of Great Salt Lake and its resources. In the end, over 125 people attended the forum and it was an overwhelming success.

After my internship, I was elected to the FRIENDS board of directors. Since then, I have served as a board member, chair of the Education Committee, and, during the past year, as the organization's vice president. My responsibilities have been diverse, ranging from sending out press releases to setting up and staffing the FRIENDS display at community events. I even did a stint as a director when we filmed the on-location segments for The Lake Affect video, starring the lovely and talented Abby Flanigan, and our own Bruce Thompson and Lynn de Freitas.

I've learned a great deal during my six years with FRIENDS, especially about the Lake itself. I've also gotten to see firsthand how a non-profit organization functions. Like any charitable organization, FRIENDS has had its challenges: there's always too much to do, and not enough people to do it. But we've persevered and grown into an organization of which I'm proud to be a part.

I've served on the board and the Education Committee with a number of very bright and talented individuals. I'm incredibly lucky to have worked with FRIENDS Education Director Bruce Thompson and President Lynn de Freitas. I love Bruce's endless "geeky" facts about the Lake and his contagious enthusiasm for both teaching and learning. And Lynn's passion and commitment to the Lake is an inspiration to all who know her. A full-time volunteer, she leads the organization with grace, humor, and an unwavering optimism.

My time as a board member will soon be over, but my commitment to learning more about the Lake and helping to preserve it has just begun. I encourage others to get involved. Come on a field trip. Watch the birds. Take a swim. Attend a meeting. Speak out on behalf of the Lake. Join FRIENDS…

Whatever you do, get to know Great Salt Lake!

Cycles

By Ann Neville, Manager of the Kennecott Inland Sea Shorebird Reserve (ISSR)

I miss the state shorebird counts. I know some of you are still able to do them, but I couldn't do them this year. I'm lucky enough to be able to feel the migration cycle through activity on the Inland Sea Shorebird Reserve (ISSR), but it hasn't been the same as watching the lake go up and down on a yearly cycle. Now in the midst of a drought I see the yearly cycle go further and further from the beach vegetation I used to walk through.

From the south shore, the Lake is now just a line in the distance, not an obvious, changing being, with winged visitors grazing on its indiscernible edge. I am amazed and fascinated at the rapidly retreating lake edge, from a few years of drought in a never ending weather cycle.

Drought is part of the Lake cycle. The last drought started before I was born, and the lowest record of the lake (post pioneer) was just a year after I was born. The record lake low in 1963 was 4191 elevation and covered 950 square miles. My parents don't remember that drought, nor, it seems, do many people. How short our memories!

But I shouldn't be surprised about our short memories. It doesn't seem that many really remember the Lake flood of 3,300 square miles, 4212 elevation in 1986/7, let alone the low of 1963. Today's Lake elevation is around 4195.5 and covers only 1,100 square miles, one third the Lake size of 20 years ago http://ut.water.usgs.gov/greatsaltlake/index.html

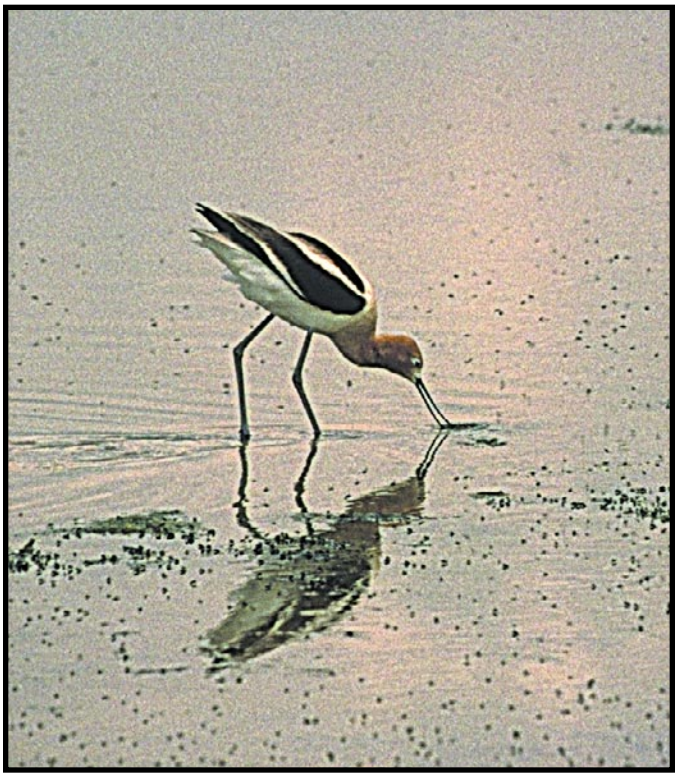
A whole human generation removed. A 3,300 square mile body of water, and what it did, almost forgotten.

What will happen in the next twenty years?

In the seven years I've been working on the Lake, the shore has widened considerably. It seems vast and empty, with only bits of tufa giving some texture. Very few wildlife I have observed near the Lake shore have adapted to use the newly exposed sand and mud to nest or feed. The wind tides prohibit living too close to the edge, and there hasn't been enough time for vegetation to grow to offer protection from predators.

I was out looking for a rare bird early one morning this June on the eastern most area of the ISSR (elevation around 4215-17). I scanned the tops of greasewood and grasses for any sign of movement. To my amazement over

Burrowing Owls by Bruce Thompson



American Avocet by Bruce Thompson

one hundred heads of birds were eyeing ME. Along with the expected meadow larks, burrowing owl, shrikes, and flitting sparrows were willets, curlews, pintails, mallards, gadwalls, and shovelers! Was this a one time thing? Was it because of the drought, or in spite of it? Have I been spending so much time on the Lake shore that I've missed something? I went back again the next week and they were still there, so I assumed these birds were using this area - this, non-lake upland dry-as-a-bone, area to nest. Of course, all birds and most other animals need dry land to nest. But waterbirds and upland birds using the same area? I wondered if they felt crowded.

Human populations also cycle. Our life expectancy has increased in the last 150 years. We can eat better food and stay healthy to lengthen our lives. We can mostly control our living space so the outside elements have little affect on our every day lives. And we can spread out and make room for ourselves - because we can.

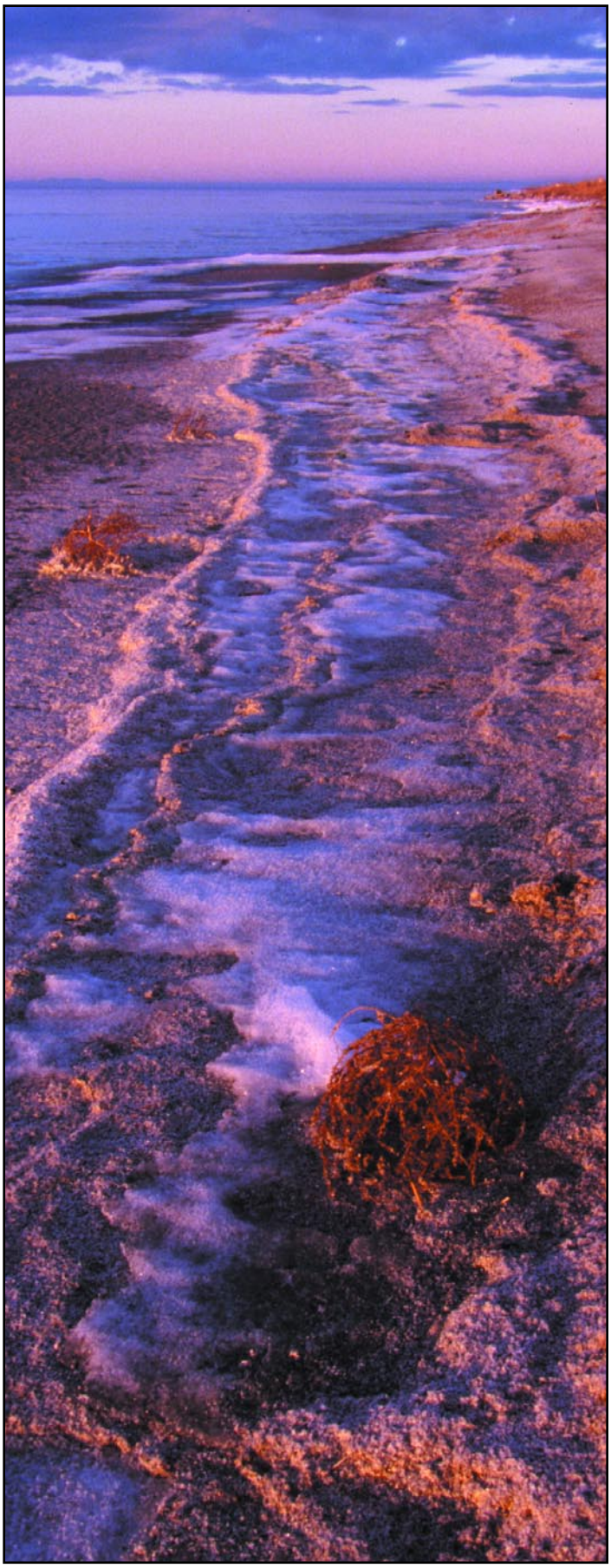
Most wildlife have little control over their environment. When their food and homes change or disappear, they either move, adapt, or die. Historically, some wildlife have been able to move freely to new homes, out lasting a wet or dry cycle, doing a type of short term adaptation. But true physiological adaptation takes much longer, and many generations. So when there is no where to move, and not enough time to adapt, wildlife species will die.

The Lake will come back - the weather cycle will circle back. The Lake may go even higher than it was in the mid 1980's. It may take twenty years, or 200 years, but it will come back.

Meanwhile, growth projections indicate that by 2050, there will be 5 million of us. We're planning on making room for our communities to meet this growth. And a part of that planning is to move closer and closer to the Lake, leaving fewer and fewer places for wildlife to go when environmental cycles either flood or dry up their habitat.

What will happen to this diversity of birds that nest, roost and feed in the uplands when we move in and change these areas? How will this impact affect the diversity of mammals and reptiles, insects and plants that live in these uplands?

And what will happen when the Lake floods again? Will we have made room for them too?



Causeway Sunrise by Bruce Andersen
baphoto@centurytel.net

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SUBMITTING MATERIAL FOR PUBLICATION

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).

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, we're 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. 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:

Stansbury Level (4445 ft), Bonneville Level (5250 ft.), Provo Level (4870 ft), and Gilbert Level (4275 ft).

Thank You to Our New and Renewed Members for Your Support

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