



WESTERN RESOURCE
ADVOCATES

January 31, 2011

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Director, Division of Water Quality
P.O. Box 144870
Salt Lake City, Utah 84114-4870
Via Email

Re: Comments on the 2010 305(b) and 303(d) State Water Quality Assessment Integrated Report.

Dear Walt:

Thank you for the opportunity to comment on the Division of Water Quality (DWQ) 2010 305(b) and 303(d) State Water Quality Assessment Integrated Report (Report). I submit these comments on behalf of FRIENDS of Great Salt Lake, Utah Chapter of the Sierra Club, Utah Rivers Council, Utah Waterfowl Association, South Shores Wetland & Wildlife Management, League of Women Voters of Utah and League of Women Voters of Salt Lake, Western Wildlife Conservancy and Great Salt Lake Yacht Club (collectively FRIENDS). We hope that DWQ will thoroughly consider these comments as it assesses Utah streams and lakes to determine if these waters are supporting their beneficial uses and as it considers making changes to its assessment protocols. These comments focus on aspects of the report that implicate Great Salt Lake, but also address issues that impact designation and protection of all Utah's waters .

Initially, FRIENDS hereby incorporates by reference its comments on the 2008 305(b) and 303(d) State Water Quality Assessment Integrated Report, submitted June 9, 2008. Exhibit A, attached. We greatly appreciate the amount of work undertaken by your agency to address many of the concerns we raised in our 2008 comments. These efforts demonstrate your commitment to protecting and maintaining the quality of Utah's waters and, in particular, Great Salt Lake. However, as much of that work is still in progress or otherwise inconclusive at this point, we reiterate those comments by incorporating them here.

Introduction

We have chosen to restate the local, national and international value of Great Salt Lake, its islands, and its wetlands. This value cannot be overstated and deserves repeating. Overall, 257 avian species use the Great Salt Lake ecosystem. Of these, 112 species are exclusively associated with the lake's varied wetland areas, while 117 species reportedly nest on the lake's periphery or on its islands. At least 33 species of shorebirds representing 2-5 million individuals use Great Salt Lake annually. In addition, up to 5

million waterfowl migrate through the Lake each year, stopping along routes that take them elsewhere in North America or to Central and South America. Approximately 30 percent of the waterfowl migrating along the Pacific Flyway depend upon the Great Salt Lake wetlands. For these migrants, the Lake provides a critical food supply, allowing them fuel up for the rest of their migrations, sometimes doubling their body weight before they leave. In recognition of its role in these international flights, Great Salt Lake is designated as one of only 19 sites in the Western Hemisphere Shorebird Reserve Network.

The importance of Great Salt Lake to the birds of the Americas is borne out by the sheer numbers that depend on its resources, including:

- 80 percent of the world's population of Wilson's phalaropes,
- The largest staging concentration of eared grebes in North America,
- The world's largest breeding population of white-faced ibis and California gulls,
- Over half of the entire breeding population of snowy plovers west of the Rocky Mountains,
- More than three quarters of the entire western population of tundra swan,
- One of the three largest breeding colony of American white pelicans, and
- One of the ten largest wintering populations of bald eagle in the lower 48 states.

The Lake boasts several protected areas including the Bear River Migratory Bird Refuge, Farmington Bay Waterfowl Management Area, Nature Conservancy Great Salt Lake Shorelands Preserve, Audubon Gilmore Sanctuary and Lee Creek Natural Area. Not surprisingly, hundreds of thousands of bird watchers comb the shores of Great Salt Lake to be rewarded by incredible views of feeding, flying and nesting birds that journey thousands of miles to gorge on the bounty of our nation's largest inland "sea." The Lake also attracts recreationists enjoying other water-based activities such as swimming, sailing, rowing, floating, wading and kayaking. Others hike, ride horseback and mountain bike to enjoy scenery, solitude and wildlife. Great Salt Lake also supports a robust community of waterfowl enthusiasts who not only enjoy hunting but are working to preserve and protect Utah's waterfowl, its unique and rich habitat and its rich heritage.

Farmington Bay, in particular, has enormous biological and recreational value. Surveys reveal that Farmington Bay provides habitat for more than 1% of the estimated North American population for 12 avian species. Counts found 81,000 American avocets, comprising 18.2% of that population, more than 47,000 black-necked stilts (31.4% of the population), over 108,000 Wilson's phalaropes (7.2%), 19,000 California gulls (3.2%); more than 8,000 cinnamon teal (3.5%); and over 7,000 white-faced ibis (4.9%).

The open water of Farmington Bay also has extensive use as documented by the Great Salt Lake waterbird surveys. For example, species counts on the open water of Farmington Bay during the waterbird surveys from 1998-2001 found 30,230 Franklin

gulls, 2,178 northern pintail, 51, 606 American avocet, 4,023 black-necked stilt, 37,620 California gulls, 10,481 Wilson's phalarope and 16,476 eared grebe. Single day counts from Farmington Bay in 2005 found numbers of American avocet greater than 65,000, phalaropes (Wilson's and Red necked) greater than 670,000, western sandpiper greater than 41,000, and waterfowl greater than 34,000.

Recognizing the importance of Great Salt Lake, not only to Utah, but to the Nation and the World, DWQ has designated the beneficial uses of each bay. Utah Admin. Code r. 317-2-6.5. Gilbert Bay is designated for "frequent primary and secondary contact recreation, waterfowl, shorebirds, and other water-oriented wildlife including their necessary food chain." Utah Admin Code r. 317-2-6.5(a). The three other bays: Gunnison, Bear River, and Farmington are "protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water oriented wildlife including their necessary food chain. Utah Admin. Code r. 317-2-6.5(b)-(d). Finally, DWQ has designated all Great Salt Lake's transitional shoreline waters as "protected for infrequent primary and secondary contact recreation, waterfowl, shorebirds and other water oriented wildlife including their necessary food chain." Utah Admin. Code r. 317-2-6.5(e). The Farmington Bay Waterfowl Management Area has among its beneficial uses the protection "of waterfowl, shore birds and other water- oriented wildlife . . . including the necessary aquatic organisms in their food chain," Utah Admin. Code r. 317-2-6.3(d) (use designations)

As DWQ has acknowledged in these designations, clean water is critical to maintaining the health of the Great Salt Lake ecosystem and protecting recreation there. Water of high quality is necessary to keep the Lake's wetlands functioning and the processes working to ensure an ample safe food supply for the millions of birds that depend upon it. Clean water is also necessary to protect recreation in and around Great Salt Lake – whether it involves swimming, bird watching, ducking hunting, wading or sailing.

Legal Background

Here, we also reiterate the legal background for our comments, adding citations to additional legal provisions and providing additional analysis. As declared by Congress, the goal of the Clean Water Act is "to restore and maintain the chemical, physical, **and** biological integrity of the Nation's waters." 33 U.S.C. § 1251(a) (emphasis added). This means that the Act protects **each** of the three elements – chemical, physical and biological health – and that a failure to meet any of these standards is a violation of the Act. To this end, Congress proclaimed as a national goal that the "discharge of pollutants into navigable waters be eliminated by 1985." 33 U.S.C. § 1251(a)(1). The Clean Water Act utilizes a two-pronged approach to prevent pollution and restore the Nation's waters. Point source discharges of pollutants – "end of pipe" conveyances from factories, sewage treatment plants, industrial wastes and the like – are regulated through the National Pollution Discharge Elimination System (NPDES) permit program detailed in Section 402. *See* 33 U.S.C. § 1342. Through the NPDES program, the U.S. Environmental Protection Agency (EPA) ensures that polluters institute technology-based and water

quality-based controls at each point source, monitor effluent levels and adhere to quantified pollution levels in their discharges as set by permit.

The second prong of the Clean Water Act's pollution control strategy is embodied in Section 303, which requires the establishment and implementation of ambient water quality standards to assess and control pollution from all sources, including point sources and the pervasive problem of non-point source pollution, such as wastes from agricultural and unpermitted sources of urban run-off, in addition to end-of-pipe pollution regulated under the NPDES program. Water quality standards must include several key components. Each state must first designate uses (fishing, swimming, drinking, etc.) for each water body, and then develop ambient water quality criteria to protect and restore those uses, plus an antidegradation policy to ensure protection of all existing and designated uses, and to maintain existing high levels of water quality. Water quality standards must be set at a level to protect designated uses from all sources of pollution, point and non-point sources. 33 U.S.C. § 1313 (a)-(c); 40 C.F.R. § 130.3.

Based on federal law, a state must establish “[w]ater quality criteria sufficient to protect the designated uses.” 40 C.F.R. § 131.6(c). Under these provisions, even without a showing of a violation of numeric standards, a waterbody must be listed on the 303(d) list if it is not meeting its beneficial uses. 33 U.S.C § 1313(d)(1)(A) (“Each state shall identify those waters within its boundaries for which effluent limitations . . . are not stringent enough to implement *any water quality standard* applicable to such waters”) (emphasis added)). DWQ must protect all existing and designated uses for each water body, and the water quality established for the water body must be sufficient to protect each of the water's existing and designated uses. 40 CFR 131.12 (commonly known and the “anti-degradation” rule). Moreover, as a general matter, where the quality of the waters exceeds levels necessary to protect beneficial uses, “that quality shall be maintained and protected[.]”

In addition, subpart (d) of § 303 obligates states to identify waters that are impaired (*e.g.* that do not meet water quality standards) after point source controls are imposed. 33 U.S.C. § 1313 (d)(1)(A). The state must then prioritize each of these water quality limited segments (WQLS), according to the “severity of the pollution and uses to be made of such waters.” *Id.* States must then develop, in accordance with the priority ranking of the WQLSs, a total maximum daily load (TMDL) as suitable for such calculation “at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.” 33 U.S.C. § 1313(d)(1)(C). A TMDL includes best estimates of pollution from non-point sources and natural background sources, pollution from point sources, and a margin of safety to account for future sources of pollution. 40 C.F.R. § 130.2(i). In other words, TMDLs establish the maximum amount of pollutants a water body can receive on a daily basis without violating the state's water quality standards.

In turn, water quality standards “must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use” of a

particularly water body. 40 C.F.R. § 131.11(a)(1). Water quality standards are typically expressed as numeric limitations, 40 C.F.R. § 131.11(b) (“In establishing criteria, States should: (1) Establish numeric values, which can be supplemented by “narrative standards.” 40 C.F.R. § 131.11(b)(2). Indeed, relying solely on narrative criteria to protect designated uses is appropriate only “where numerical criteria **cannot** be established. . . .” 40 C.F.R. § 131.11(b)(2) (emphasis added). Moreover, where the State relies on narrative criteria for toxic pollutants, such as mercury, to protect beneficial uses, the State must “identify[] the method by which the State intends to regulate point source discharges of toxic pollutants. . . .” 40 C.F.R. § 131.11(a)(2).

To protect the State’s most important water-based ecosystem, the State of Utah relies almost entirely on a narrative standard that applies to all waters of Utah, and in all cases but the Great Salt Lake, serves to supplement numeric criteria. That narrative standard states:

It shall be unlawful, and a violation of these regulations, for any person to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum or other nuisances such as color, odor or taste; or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by bioassay or other tests performed in accordance with standard procedures.

Utah Admin. Code r. 317-2-7.2. The Farmington Bay Waterfowl Management Area , which has among its beneficial uses the protection “of waterfowl, shore birds and other water- oriented wildlife . . . including the necessary aquatic organisms in their food chain,” is protected by the applicable numeric standards. Utah Admin. Code r. 317-2-6.3(d) (use designations); Utah Admin. Code r. 317-2-13.11 (designating Farmington Bay Waterfowl Management Area); see also r. 317-2-13 (numeric standards for 3D).

All Segments of Great Salt Lake are Impaired

States are required to identify either entire water bodies or discrete water body segments as impaired based on evidence of water quality impairment or impairment of existing or designated uses. An existing use is any use “actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.” 40 CFR § 131.3(e). Designated uses “are those uses specified in water quality standards for each water body or segment whether or not they are being attained.” 40 CFR §131.3(f). As shown in more detail below, there is clear evidence that several discrete segments of Great Salt Lake, if not the Lake as whole, are impaired and require listing as such.

Lack of Numeric Water Quality Standards Cannot Justify the Refusal to List Great Salt Lake as Impaired.

Although there is only one proposed numeric water quality criterion for Great Salt Lake at this time, the Lake is protected by a narrative standard. If that narrative standard is not being met, DWQ must list those segments of the Lake, or the Lake as a whole, as impaired under 303(d). If DWQ does not list Great Salt Lake as impaired where the narrative water quality standard is being violated, then the narrative standard is ineffective. If the narrative standard is ineffective, the Lake will have no water quality protection and DWQ will be violating its duties under the Clean Water Act of restoring and maintaining the “the chemical, physical, and biological integrity of the Nation’s waters.” 33 USC § 1251(a). Moreover, because water quality standards consist of both designated uses and water quality criteria to protect those uses, the state must list water bodies as impaired whenever there is evidence of impairment of existing and designated uses.

Although full compliance with section 303 of the Clean Water Act requires development and adoption of a full suite of numeric water quality criteria for Great Salt Lake, it can be appropriate for DWQ to rely on the narrative standard as a benchmark for use attainment until numeric standards can be established. For non-toxic pollutants, narrative criteria based on biomonitoring methods are appropriate to supplement numeric criteria, or in the interim until numeric criteria can be established. 40 C.F.R. § 131.11(b)(2). After numeric standards are adopted for the Lake, narrative criteria should still play a role under the Act, as EPA has determined that narrative criteria are necessary to comply with section 303(c)(2)(A) of the Act, which requires standards to protect public health or welfare, enhance the quality of water, and further serve the purposes of the Act. EPA, *Water Quality Standards Handbook* 6-3 (2d ed. 1993) at 3-24. The use of the narrative standard requires DWQ to develop a methodology or criteria for implementing those standards so that it can be objectively determined whether those standards have been violated. For narrative standards applied to toxic pollutants, the State must ensure that the standard is sufficient to protect beneficial uses. EPA rules also require that where a state adopts narrative toxicity criteria to protect designated uses, the State must also identify procedures for implementing those criteria. 40 C.F.R. § 131.11(a)(2). The State must explain how it will develop specific limits on point source discharges to ensure that the narrative standard is met. *Handbook* at 3-24 to 3-26.

As stated above, missing from DWQ’s narrative standards are any clear procedures for implementing the standards so that it can be objectively determined whether the standards is being met or violated. How specific discharges will be limited/regulated so as to comply with these standards has similarly never been clearly established. DWQ cannot simply rely on vague narrative standards when there is no way to measure whether beneficial uses are being met. The agency is properly acting now to develop numeric standards, however in the interim, the agency cannot use the lack of numeric standards to justify not listing Great Salt Lake as impaired if its narrative standard is not being adequately met. By the same token, DWQ may not point to the lack of methodology associated with a narrative standard to prevent the listing the Great Salt

Lake as impaired. The methodology for the narrative criteria is necessary for DWQ to adequately assess the impacts of individual proposed discharges into Great Salt Lake during permit proceedings until numeric criteria are established, but an impairment listing will still be appropriate whenever there is credible evidence that the water body is impaired.

To make conclusions regarding impairment of Great Salt Lake beneficial uses, DWQ relies on the weight of evidence approach where the agency identifies critical direct and indirect indicators needed to attain beneficial uses. DWQ identifies thresholds for these indicators and uses a preponderance of the evidence test to make a conclusion. Under the weight of evidence approach, there is no need to offer definitive proof. Rather, the data and information needs only to show that the beneficial use at issue is **at risk**. As a result, where a use is at risk, DWQ should not require more than evidence of impairment before taking appropriate remedial action. *See*, 2006 Integrated Report Guidance, Section V: Five-Part Categorization of Waters, at 47.¹

In sum, based on one or more methods that DWQ presents in the Report and based on the agency's own data as well as data from other credible sources, Great Salt Lake is impaired. As a result, the agency must immediately take action to improve water quality in the Lake. Moreover, DWQ must ensure that any decision tree it proposes relative to Great Salt Lake adequately protects this important ecosystem, errs on the side of immediate action at the sign of any risk to impairment, is enforceable, and does not delay action when direct and indirect indicators suggest non-impairment.

Data & Information Show Great Salt Lake is not Meeting its Narrative Standard.

Based on any interpretation or analysis of the narrative standard, the excessive quantities of algae, nutrients, and other contaminants in the open waters of Farmington Bay and other open waters indicate that the beneficial uses of Great Salt Lake, including the primary contact use, are not being protected. Algae blooms, hypoxic conditions, and excess quantities of criteria pollutants mean that the public cannot and should not use portions of the Lake for primary contact recreation. The narrative standard, on its face, prohibits Lake conditions that would cause undesirable aquatic life to proliferate. Such conditions have continued to exist for considerable time. The algae problem, particularly in Farmington Bay, has caused eutrophic and hypoxic conditions that allow algae to flourish and deplete the Bay of oxygen, therefore preventing beneficial uses from being met.

DWQ's assertion that Great Salt Lake is within category 5C (insufficient data to assess) is not supportable based on the fact that DWQ currently possesses sufficient data to require that Great Salt Lake be listed as impaired. Even based on a weight of evidence approach, which is insufficiently protective, existing objective information

¹water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/upload/2005_08_11_tmdl_2006IRG_report_2006irg-sec5.pdf.

indicates that water quality is well-below acceptable standards as established in the narrative standard. *Specific segments of the Lake are clearly impaired, as shown below:*

Existing Data on Mercury Proves that Narrative Standards have been Violated and Uses are Impaired due to the Known Adverse Human Health Impacts.

FRIENDS would first like to acknowledge and thank DWQ for its focus on mercury in Great Salt Lake. Plainly, the relevant appendices to the Report represent significant and quality work undertaken to determine the impact of mercury on the Great Salt Lake ecosystem. We also appreciate that DWQ recognizes mercury contamination as a serious issue. Further, FRIENDS is pleased to see that DWQ is working to develop numeric water quality standards for mercury, which along with development of other water quality criteria for all other pollutants present in the lake, are essential for compliance with the State's obligations under section 303(c) of the CWA. In the interim, FRIENDS hopes DWQ continues to make strides to develop a specific narrative standards for all segments of Great Salt Lake, which meet the requirements of 40 C.F.R. 131.11(a)(2).

Under the current narrative standard, a waterbody is impaired when it is contaminated to such an extent that poor water quality leads to undesirable physiological responses in desirable resident fish or other desirable aquatic life, or undesirable human health effects. Existing data on mercury shows that mercury levels within Great Salt Lake exceed safe levels by a significant margin. Great Salt Lake in particular is known as a local hot spot for excessive quantities of toxic mercury.

In light of these troubling realities, as well as the strong and repeated evidence that mercury poses a risk to Great Salt Lake birds, we urge DWQ to list Great Salt Lake as impaired. While we appreciate that DWQ believes that certain scientific questions are left unanswered, the existing evidence requires a finding of impairment. The levels of toxic mercury in the Lake, combined with DWQ's recent findings, as well as repeated studies by its sister agencies favors a finding of impairment. All of this evidence points to the same conclusion. At the same time, the importance of the ecosystem values put at risk by mercury, and an appropriate approach that errs on the side of protection of human health and the environment, requires that the Lake be declared as impaired.

Waters Impaired due to Atmospheric Mercury Contamination Are Impaired.

EPA guidance requires water bodies impaired by mercury to be listed as a category five water (impaired under 303(d)). This guidance also allows those bodies to be listed as 5m waters where other pollution controls may be established in addition to TMDLs in order to reduce the amount of atmospheric mercury contamination. This is because EPA's position is that a TMDL cannot directly address atmospheric mercury. *Listing Waters Impaired by Mercury Under Clean Water Act Section 303(d): Voluntary Subcategory 5m for States with Comprehensive Mercury Reduction Programs*, EPA

Guidance Document, issued 2007.² However, states cannot use the complexity of crafting TMDLs to address atmospheric sources of mercury as a reason not to list a water as impaired or not to establish a mercury-reduction program for the impaired water body. *Id.* at 1-4; 9. Although the 5m category is voluntary, the listing of waters as impaired by atmospheric mercury is mandatory. *Id.* Also, EPA recommends that states have an existing comprehensive mercury management program before taking advantage of the 5m listing. *Id.* at 4.

The Great Salt Lake Duck Consumption Advisory is Equivalent to a Fish/Shellfish Advisory and Provides Evidence that the “Fishable” Designation of Great Salt Lake is Impaired.

EPA believes that fish and shellfish consumption advisories “based on waterbody specific information demonstrate impairment of CWA section 101(a) ‘fishable’ uses.” *EPA Guidance Document: Use of Fish & Shellfish Advisories and Classifications in 303(d) & 305(b) Listing Decisions* at 1.³ Therefore, these sorts of advisories are proof that a waterbody is impaired for at least one of its designated uses.

Great Salt Lake’s duck consumption advisory is equivalent to a fish or shellfish consumption advisory. While Great Salt Lake does not have game fish, it does have waterfowl that are hunted for sport. These birds are water-oriented species of wildlife. The basic concept of ‘fishable’ is that the animals reliant on a waterbody’s ecosystem are safe for human consumption. Consuming waterfowl from Great Salt Lake is clearly an existing use as defined by EPA regulations, and a consumption advisory is a per se example of use impairment. Great Salt Lake ducks are not safe for human consumption because of the levels of mercury they contain, and therefore a Clean Water Act fundamental use designation, “fishable,” is impaired by mercury.⁴ For this reason any segments of the Lake that have active duck-consumption advisories in place must be listed as impaired due to mercury contamination. The agency may decide whether to take advantage of the voluntary 5m classification explained above, but must list mercury-impaired segments of Great Salt Lake as impaired.

Hydromodification of the Great Salt Lake Constitutes a Use Impairment.

EPA guidance states that hydromodified waters are likely impaired due to their hydromodification. *National Measures to Control Non-Point Source Pollution from Hydromodification*, US EPA Office of Water (2007).⁵ A water body is hydromodified any time the “hydrologic characteristics” of the waterbody are altered. *Id.* at 1-1. When hydromodification segments a waterbody or isolates certain sections of a cohesive water

²http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/upload/2007_03_08_tmdl_mercury5m_Mercury5m.pdf.

³http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/mercury/upload/2000_10_24_standards_library_shellfish.pdf.

⁴ www.waterfouladvisories.utah.gov.

⁵ http://www.epa.gov/owow/NPS/hydromod/pdf/Hydromod_all_web.pdf

body, that water body is likely to be impaired by non-point source pollution. *Id.* EPA suggests that states identify all hydromodified waters and take measures to prevent non-point source pollution and mitigate the effects of the hydromodification on the waterbody. *Id.* at 1-2, *et seq.* Any time hydromodification impairs any of the waterbody's designated uses, the water is impaired by that hydromodification. *Id.* at 1-2. EPA lists the most common causes of beneficial use impairment that occur due to hydromodification as "nutrients, sediment, pathogens (bacteria), metals, pesticides, oxygen-depleting materials, and habitat alterations." *Id.* at 1-2; *see also generally, id.* at Chapter 6.

As demonstrated elsewhere in these comments, sections of Great Salt Lake are impaired. Further, most of the impaired sections have been hydromodified, either by the railroad causeway, the Antelope Island causeway, or the extensive diking of the lake for mineral extraction evaporation reservoirs and other purposes by Great Salt Lake Minerals, U.S. Magnesium, Morton Salt and other entities. DWQ must take all appropriate action to alleviate the effects of hydromodification on Great Salt Lake and its various bays so that the hydromodification does not further impair the bays' designated uses.

Aquatic Ecosystem Impairment in Gunnison Bay is a Per Se Use Impairment.

Gunnison Bay's aquatic ecosystem is impaired because it is not meeting its beneficial uses. Before the railroad causeway was construed, the Gunnison Bay aquatic ecosystem supported brine flies and brine shrimp as well as five different types of blue and blue-green algae. The commercial harvesting of adults and eggs of brine shrimp was carried out to provide food for topical fish. *Changes in lake levels, salinity and the biological community of the Great Salt Lake (Utah, USA), 1847-1987*, Stephen (1990) at 143-144. After the completion of the railroad causeway in 1959, Gunnison Bay salinity concentrations have rose to and stayed at elevated levels, altering the type of organisms which can survive the new ecosystem. The brine shrimp industry moved to the southern portion of Great Salt Lake because it was no longer economically feasible to continue operations in Gunnison Bay. *Id.* at 145. Currently the salinity level found in Gunnison Bay is 28%. *Great Salt Lake*, United States Geological Survey (2007).⁶

The high salt concentration found in Gunnison Bay has decreased the ability of the water to absorb oxygen. Stephen (1990) at 144. At current salinity levels, the only organisms found in Gunnison Bay are brine flies (found along the shoreline), small pockets of brine shrimp (found along the breach in the causeway and culverts), and photosynthetic sulfur bacteria. Also, red algae can be found in the waters north of the causeway. The sulfur bacteria accounts for 180,000 tons to 2 million tons of the biomass found in Gunnison Bay. It is this bacterium which lends the distinct reddish-purple tint for which Gunnison Bay is known.⁷

⁶ pubs.usgs.gov/wri/wri994189/PDF/WRI99-4189.pdf.

⁷ <http://ut.water.usgs.gov/greatsaltlake/salinity/>.

Under the Great Salt Lake beneficial use classification, Gunnison Bay's beneficial uses are to (1) protect for infrequent primary and secondary contact recreation and (2) protect waterfowl, shore birds and other water-oriented wildlife including their necessary food chain. Each of these protected beneficial uses is discussed briefly below. These designations are appropriate given that the Clean Water Act defines "*existing uses*" are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards." 40 CFR 131.3(e).⁸ Plainly, in the early 1980s and after, Gunnison Bay did meet its designated uses, providing important and widespread habitat for brine shrimp, brine flies and waterbirds including erred grebes and being "swimmable."

The first beneficial use of Gunnison Bay for primary and secondary contact recreation is impaired. This is due to three different factors. First, because of the high salinity level found in Gunnison Bay recreational enthusiast do not want immerse themselves in the water. More so than other segments of the Lake, the high salinity level burns their eyes, ears, and any other sensitive areas of the body. Second, the presence of high levels of sulfur bacteria and red algae makes the water in Gunnison Bay appear reddish-purple, and makes the waters appear dirty, polluted and unfit recreational use. Finally, the sulfur bacteria, as mentioned above, make up the majority of the biomass found in Gunnison Bay. This bacterium emits a rotten egg like smell. This bacterium contributes to the perception that the Gunnison Bay is polluted and not safe to use for recreation. Therefore, because these factors deter people from using Gunnison Bay for primary and second recreation, Gunnison Bay is impaired.

The second beneficial use of Gunnison Bay, the protection of avian species, water-oriented wildlife and their food chain, is also impaired. This arises from the fact that organisms found in the South Arm cannot survive in the high salinity level found in Gunnison Bay. The high salinity level makes it very difficult for brine shrimp, blue and blue-green algae, and plankton to reproduce and grow in its waters. Many avian species and wildlife rely on these organisms as a food source. The brine flies found in and around Gunnison Bay primarily migrate from the south part of Great Salt Lake. Thus, Gunnison Bay is use-impaired because it cannot support the organisms that the avian and wildlife species rely on as a main food source.

Other Areas of the Great Salt Lake Are Impaired.

The areas of Great Salt Lake that have been diked and sequestered for mineral harvesting and other industrial purposes are also impaired. Currently, ten producing mineral leases, totaling 171,644 acres, operate within Great Salt Lake sovereign lands. For example, Great Salt Lake Mineral Company currently operates mining reservoirs that cover 43,000 acres (21,000 acres in Clyman Bay and 22,000 acres in Bear River Bay) in and along the shores of the Great Salt Lake. See Army Corps of Engineers Final Scoping

⁸ "States may remove a designated use which is not an existing use[.]" 40 C.F.R. 131.10(g)

Comment (2007) at 5. This company is currently seeking to expand its facility by 91,000 acres.

These portions of the Lake have been fundamentally altered in a manner that obliterates designated or existing uses. They support no desirable lifeform and are not swimmable. Because these significant portions of Great Salt Lake have been so hydrologically altered as to completely eliminate existing and designated uses, DWQ should undertake efforts to identify these segments of the Lake and list them as use-impaired. This is particularly true where the hydrological modifications have been made after 1975, such as in Clyman Bay.

The Wildlife and Recreation Uses of the Open Waters of Farmington Bay Are Impaired.

We reiterated that the open water of Farmington Bay is impaired because this waterbody does not adequately support waterbirds and aquatic organisms and is not swimmable. This is particularly true because these waters are plagued by eutrophic conditions. In response, DWQ noted that to list Farmington Bay as impaired would be premature, in part, because “[i]f nutrients are a threat, then reductions should not be implemented without understanding how N:P ratios influence cyanobacteria blooms, which represent a separate yet related threat to lake biota.” DWQ’s response does not properly distinguish between listing a water as impaired and then identifying and addressing the cause of that impairment. DWQ’s reasons for not listing Farmington Bay as impaired are relevant to the later action – creating a TMDL for the Bay. However, the agency does not have to know the appropriate level of nutrients for Farmington Bay to know that the Bay is impaired because every summer the Bay is clogged with severe algae blooms and other highly undesirable growths. Therefore, DWQ is putting the cart before the horse in believing that it needs to know how to correct an impairment in order to list a particular water – Farmington Bay – as impaired.

The Wetlands of Farmington Bay.

FRIENDS appreciates DWQ’s willingness to meet and discuss the impounded wetlands of Farmington Bay, and would like to thank DWQ for reaching a mutually agreeable compromise to find a more efficient and scientifically sound method for accessing impounded wetlands. However, FRIENDS would like to note that per our agreement, DWQ is behind schedule in formulating a new assessment method for those impounded wetlands, and for establishing involvement of stakeholder groups. FRIENDS is eagerly awaiting more information, but notes that the agreement was based on adherence to a timetable for finalizing and implementing these assessment tools.

If a Category 3 Listing is Appropriate for Great Salt Lake, DWQ Cannot Issue UPDES Permits for the Lake Until there is Sufficient Data to Make an Attainment Decision.

If there is truly not sufficient information to make a listing determination for one or more of the five segments comprising Great Salt Lake (a point which FRIENDS does not concede here), or Great Salt Lake as a whole, then the agency cannot continue to issue new UPDES permits for Great Salt Lake. The agency claims that it is fulfilling its obligations under the Clean Water Act. However, it is not possible to issue UPDES permits for discharges into Great Salt Lake under 33 USC § 1342 if DWQ does not have adequate data to determine when discharges may threaten Great Salt Lake's beneficial uses, or when a UPDES permit has the potential to cause impairment of the Lake. In the case that a category 3 listing is appropriate for one or more segments of Great Salt Lake, DWQ must not issue UPDES permits in those segments of the Lake until sufficient data exist to determine whether the Lake is impaired and whether a discharge will further impair the Lake or violate the water quality standards.

Numeric Water Quality Standards for the Great Salt Lake

FRIENDS appreciates DWQ's efforts to establish numeric water quality criteria for Great Salt Lake. FRIENDS agrees with DWQ that accurate, protective numeric water quality standards for the Great Salt Lake will help determine impairment, and protect the Lake's beneficial uses. FRIENDS also appreciates DWQ's efforts to establish numeric ambient water quality standards for Great Salt Lake in order to comply with 33 USC § 1313(a)-(c) & 40 CFR § 130.3. 33 USC § 1313(a)-(c) requires DWQ to promulgate numeric water quality criteria for Great Salt Lake. It is essential for DWQ to establish numeric criteria for the Great Salt Lake, criteria that are now more than 40 years overdue, in order to comply with section 303.

In the Report, DWQ states that “[t]o characterize the hydrology and geochemistry for each Bay (Classes 5A – 5E), post flood conditions (from 1995 onwards) will be used to develop numeric criteria and assessment methods for the GSL.” Report at 2.699. This plan of action fails to meet the purposes of the Clean Water Act. Numeric criteria are necessarily designed to protect designated uses. Post flood conditions may not be representative of hydrology and geochemistry necessary to meet beneficial uses.

Reporting Requirements

FRIENDS agrees that segmenting Great Salt Lake is appropriate and in compliance with EPA guidance documents and recommendations. *See 2006 Integrated Report Guidance Appendix: Data Elements for 2006 Integrated Water Quality Monitoring and Assessment Report & Documentation for Defining and Linking Segments to the National Hydrography Dataset.*⁹ However, segmenting the Lake does not obviate the need to list

⁹http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/upload/2005_08_11_tmdl_2006IRG_report_2006irg-appendix-2.pdf.

Great Salt Lake, or individual impaired segments, as not meeting beneficial uses under 303(d), category 5.

DWQ meets all the EPA information and reporting requirements to explain the decision to segment a water body. *Id.* at A-5, A-6. However, DWQ does not meet the reporting requirements explaining why DWQ determined that any given waterbody is supporting its designated uses, how and when DWQ came to its conclusion regarding each designated use and listing all pollutants and non-pollutants that might be the cause of use impairment in the waterbody segment. *Id.* at A-5, A-6. Specifically, for each segment, DWQ must: 1) list each designated use; and, 2) designate that use as either fully supported, not supported, insufficient data to support a determination (but explaining how DWQ will rectify this insufficiency) or not assessed (with the reason for the lack of assessment and remediation measures). *Id.* at A-5. Once DWQ reports the attainment decision, it must then explain how and when the assessment took place, including data on the assessment date, type, confidence, all data used in the assessment, and the results of the assessment. *Id.* at A-5. Finally, DWQ must report a list of pollutants and non-pollutants that might be impairing one of more designated use, link the pollutant to the impairment, and report all the observed effects of pollution for each designated use segment (for instance: fish kill, change in algae color, absence of native aquatic life). *Id.* at A-5, A-6. DWQ fails to meet these reporting requirements for the five segments of the Great Salt Lake.

Category 4C

We are submitting more specific comments on category 4C because there is a real need to better utilize this category and to tie the category to policies and programs which address the problems of habitat and flow impairment.

Waters listed in category 5 – traditionally known as the 303(d) list – receive special attention for restoration, as they should. For example, category 5 waters receive a higher priority for funding and other resources in programs such as the 319 program. However, the practice of relegating waters not meeting their beneficial uses due to habitat or flow alteration to category 4C has meant these equally impaired systems do not receive this attention and hence languish in impairment.

We request that the agency invest in developing a more thorough list of waters impaired by habitat and flow alterations, and begin to direct policies and programs to restore the beneficial uses of those waters. For purposes of these comments, we will focus on the first part of that request – developing a better list of 4C waters.

However, the reason we are concerned with improving category 4C is tied to the second part of that request – the need to better implement restoration efforts. In brief, we suggest a stronger category 4C list should be tied to policy changes such as prioritizing 4C waters for DWQ funding programs and sister agency funding programs, 401 water quality certifications placed on individual and general 404 wetland and stream alteration

permits (for example, requiring individual certification of stream alteration permits in habitat impaired river segments), and more.

We look forward to discussing these implementation ideas with agency staff, but for these comments will focus on the need to better develop category 4C.

Placement in Category 4C

According to discussions and email correspondence with State agency staff, there is no clear procedure for placing waters in category 4C. Staff state in part: “Our listings in this category were based on outside reports, usually reports from CUP or other water development agencies that e.g., conclude habitat is or will be severely limited.”¹⁰ This is an appropriate approach, but far too limited in its application.

We request that the agency expand its efforts to gather relevant information on 4C waters and develop a simple process for placing waters in 4C. For example, on page 2.23 a chart summarizing the causes of non-support in streams lists only 100 miles of stream as impaired by flow alterations, with only three of those miles due to low flow alterations. Similarly, a chart on page 2.27 lists hydromodification as the source of non-support in only three stream miles. This data is clearly not capturing even a fraction of the true flow impairments in Utah.

At the very least, we ask that the agency use the habitat assessment data you collect through your own bioassessment process to populate category 4C with segments in poor condition. An additional approach to better documenting 4C waters would be to partner with the Utah Division of Wildlife Resources regional offices to document their data in a way that can be brought into the 4C category. Preliminary discussions with State office staff suggest this information is readily available – although not in a form applicable to category 5 listings, it could be documented in a manner appropriate for 4C categorization.

Which directs us to the need to describe the process for deciding whether a water should be listed in the 4C category. For several reasons, category 4C listings should not require the same rigor and intense structure as category 5. Category 4C listings do not have the regulatory ramifications of category 5 – they do not trigger development of a Total Maximum Daily Load (with the associated costs and agency time), nor do they have direct regulatory impacts on UPDES permitting. In addition, much of the data needed to demonstrate a habitat or flow impairment is quite different and more qualitative than that used to document a chemical or biological impairment.

However, there is a need for some information on how the agencies such as the Division of Wildlife Resources, the public and others can submit information in support of a 4C categorization. We request the agency establish a short description of the types

¹⁰ Chris Bittner, Utah Division of Water Quality, 1/25/2011 email.

of information appropriate for 4C categorization, and actively recruit that information for future listing cycles.

Discrepancies within the 2010 report for 4C

As discussed with agency staff, there are some discrepancies within the draft 2010 report for category 4C. The chart on page 2.21 identifies only four 4C segments, for a total of 128 river miles. However, if the reader moves through each of the basin chapters one finds 22 stretches totaling nearly 600 miles (including 4 new stretches since the draft 2008 report). Discussions with staff indicate that the basin listings are the correct listings, and that the chart is the result of a sorting bug within the database which only shows the 4 segments which are ONLY 4C and not also category 5.

We request the final report correct the chart on page 2.21 and also provide a summary chart identifying all 4C segments in one place, for ease of tracking and use for policy matters.

Delisting of Parleys Creek between 2006 and 2010

We cross referenced the 2006 4C category listings with the 2010 4C category listings. The only stretch which was delisted was Parleys Creek. No explanation is provided, and given the unchanged nature of use and habitat restoration needs in the stretch, we believe this stretch may have been mistakenly omitted from the 4C category in the draft 2008 and 2010 reports. We request the agency return the segment to 4C, or provide an explanation for why it was removed.

Delistings between 2006 and 2010

While no other river stretches appear to have been delisted between 2006 and 2010, certain pollution sources have been removed from the list for stretches still listed for a different pollution source. For example, the following segments were listed for just one problem on the draft 2008/2010 report, but were listed for two (missing problem noted here in parentheses) on the 2006 report:

- Beaver-2 (noxious aquatic plants)
- Diamond Fork-1 (other habitat alterations)
- Sixth Water Creek (other habitat alterations)
- Uinta River-3 (other habitat alterations)

We request that the agency provide information that these pollution issues were resolved in these segments or reinstate them in category 4C.

Category 3B

Delay in listing for lakes and reservoirs

The draft 2010 Integrated Report states:

Lakes and reservoirs that have been assessed as not supporting a beneficial use for one monitoring cycle are included in Category 3B. If a lake or reservoir is assessed as impaired for two consecutive monitoring cycles it is listed on the 303(d) list.¹¹

Discussions with State agency staff suggest the “monitoring cycle” referenced here is actually the two-year Integrated Report cycle. However, there is some uncertainty that this would not in practice mean the 5-year rotating basin monitoring cycle, as new monitoring data to document “two consecutive monitoring cycles” would likely not be available until monitoring teams are again rotated through a basin.

Regardless of the two or five year delay, this system is unacceptable. As a practical matter, the State is changing the water quality criteria for lakes and reservoirs illegally by requiring two consecutive findings of criterion violation in order to list. If the State wishes to apply this approach, they would need to change the water quality criteria. This fact alone means waters in category 3B should be moved to Category 5. The addition of the two to five year delay in taking action (beyond monitoring), if that is the reality of implementation, only adds insult to injury.

Therefore, we request that the agency move waters in Category 3B into Category 5.

Comments to EPA

Based on the public notice it appears that DWQ intends to send its 303(d) proposal to EPA without first considering public comments on the agency’s analysis. The primary benefit of such comments is that they can be used by DWQ to improve the analysis and the list. In this way, when the list/analysis is sent to EPA it will include responses to public input. To send the analysis without careful consideration of public comments will render the public process largely inconsequential or ceremonial in terms of aiding the agency in its analysis. Such an approach violates the Clean Water Act.

Request for Notice

Finally, we request that you notify us when DWQ has finalized the 305(b)/303(d) Integrated Reports of both 2008 and 2010, and advise us of our right to appeal under the Utah Administrative Procedures Act relative to that action.

¹¹ Utah Division of Water Quality, draft *2010 Integrated Report*, page 17

FRIENDS reserves the right to supplement comments to both the 2008 Integrated Report and the 2010 Integrated Report based on DWQ's final response to comments from the 2008 report and final submission of the 2008 report to EPA.

Thank you again for the opportunity to comment on the 2008 and 2010 Integrated Reports, and for all you do to protect Utah's waters. Please let us know of any action that you take relative to both 2008 and 2010 Integrated Reports, including when and in what form DWQ submits them to EPA.



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