

USE ATTAINABILITY ANALYSIS: Great Salt Lake, Utah

A **Use Attainability Analysis (UAA)** is a structured scientific assessment of the factors affecting the attainment of uses specified in Section 101(a)(2) of the Clean Water Act (the so called "fishable/swimmable" uses). The factors to be considered in such an analysis include the physical, chemical, biological, and economic use removal criteria described in EPA's water quality standards regulation (40 CFR 131.10(g)(1)-(6)).

Under **40 CFR 131.10(g)** states may remove a designated use which is not an existing use, as defined in § 131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:

1. Naturally occurring pollutant concentrations prevent the attainment of the use; or
2. Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or
3. Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
4. Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or
5. Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or
6. Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.

In 2007-2008 a Great Salt Lake Assessment Workgroup under took a project to determine if Great Salt Lake was impaired. The members of the workgroup were comprised from members of EPA Region 8 and from the Utah Division of Water Quality. These discussions lead to a staff recognition within the Division of Water Quality that the waters of Great Salt Lake be segmented as follows [changes in the standards are indicated by strike-out [for removal] and underline [for additions] as follows:

6.5 Class 5 -- The Great Salt Lake. [~~Protected for primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary aquatic organisms in their food chain, and mineral extraction.~~]

Class 5A Gilbert Bay

Geographical Boundary - All open waters at or below 4,208-foot elevation south of the Union Pacific Causeway, excluding all of Farmington Bay south of the Antelope Island Causeway and salt evaporation ponds.

Beneficial Uses - Protected for primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

Class 5B Gunnison Bay

Geographical Boundary - All open waters at or below 4,208-foot elevation north of the Union Pacific Causeway and west of the Promontory Mountains, excluding salt evaporation ponds.

Beneficial Uses - Protected for secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

Class 5C Bear River Bay

Geographical Boundary - All open waters at or below 4,208-foot elevation north of the Union Pacific Causeway and east of the Promontory Mountains, excluding current existing salt evaporation ponds.

Beneficial Uses - Protected for secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

Class 5D Farmington Bay

Geographical Boundary - All open waters at or below 4,208-foot elevation east of Antelope Island and south of the Antelope Island Causeway.

Beneficial Uses - Protected for secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain. Assessment criteria are dependent upon salinity concentration.

Class 5E Transitional Wetlands along the Great Salt Lake Shoreline Geographical Boundary - All wetlands below 4,208-foot elevation to the current lake elevation of the open water of the Great Salt Lake receiving their source water from naturally occurring springs, streams, impounded wetlands, or facilities requiring a UPDES permit. The geographical areas of these transitional wetlands change corresponding to the fluctuation of open water elevation

Beneficial Uses - Protected for secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

The individual use classifications for areas within Great Salt Lake are shown below:

Bear River National Wildlife
Refuge, Box Elder County

~~[2B—3B—3D]~~

Open Water below 4,208

5C

Transational Wetlands 4,208 ft. to Open Water			5E
Open Water above 4,208 ft.	2B	3B	3D

Bear River Bay

Open Water below 4,208 ft.			5C
Transitional Wetlands 4,208 ft. to Open Water			5E
Open Water above 4,208 ft.	2B	3C	

Farmington Bay Waterfowl
Management Area, Davis and
Salt Lake Counties

[2B—3C 3D]

Open Water below 4,208			5C
Transational Wetlands 4,208 ft. to Open Water			5E
Open Water above 4,208 ft.	2B	3C	3D

Farmington Bay

Open Water below 4,208 ft.			5D
Transitional Wetlands 4,208 ft. to Open Water			5E
Open Water above 4,208 ft.	2B	3C	3D

Gilbert Bay

Open Water below 4,208 ft.			5A
Transitional Wetlands 4,208 ft. to Open Water			5E
Open Water above 4,208 ft.	2B	3C	

Gunnison Bay

Open Water below 4,208 ft.			5B
Transitional Wetlands 4,208 ft. to Open Water			5E
Open Water above 4,208 ft.	2B	3C	

Howard Slough Waterfowl
Management Area, Weber County

[2B—3C 3D]

Open Water below 4,208			5C
Transational Wetlands 4,208 ft. to Open Water			5E
Open Water above 4,208 ft.	2B	3C	3D

Locomotive Springs Waterfowl
Management Area, Box Elder County

[2B—3C 3D]

Open Water below 4,208			5C
Transational Wetlands 4,208 ft. to Open Water			5E

Open Water above 4,208 ft.	2B	3C 3D
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Ogden Bay Waterfowl Management
Area, Weber County

[2B—3C 3D]

Open Water below 4,208		5C
Transational Wetlands 4,208 ft. to Open Water		5E
Open Water above 4,208 ft.	2B	3C 3D

Public Shooting Grounds Waterfowl
Management Area, Box Elder County

[2B—3C 3D]

Open Water below 4,208		5C
Transational Wetlands 4,208 ft. to Open Water		5E
Open Water above 4,208 ft.	2B	3C 3D

Salt Creek Waterfowl Management
Area, Box Elder County

[2B—3C 3D]

Open Water below 4,208		5C
Transational Wetlands 4,208 ft. to Open Water		5E
Open Water above 4,208 ft.	2B	3C 3D

Stewart Lake Waterfowl Management
Area, Uintah County 2B 3B 3D

Timpie Springs Waterfowl
Management Area, Tooele County

[2B—3C 3D]

Open Water below 4,208		5C
Transational Wetlands 4,208 ft. to Open Water		5E
Open Water above 4,208 ft.	2B	3C 3D

It will be noted that the classification of Gilbert Bay include a 3A classification, while the other areas include 3B (secondary recreation). This change is justified because it fits nicely into the revised classification for secondary recreation that is being proposed as a part of the triennial review as indicated below:

6.2 Class 2 -- Protected for recreational use and aesthetics.

- a. Class 2A -- Protected for **frequent** primary contact recreation ~~[such as swimming.]~~ **where there is a high likelihood of ingestion of water or a high degree of bodily contact with the water. Examples include, but are not limited to, swimming, rafting, kayaking, diving, and water skiing.**
- b. Class 2B -- Protected for **infrequent primary contact recreation. Also protected for** secondary contact recreation ~~[such as boating, wading, or similar uses.]~~ **where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.**

Downgrading Use Classifications from Primary to Secondary Recreation:

The Gilbert Area is the only area of Great Salt Lake that has managed areas for swimming. There are showers and picnic and camping areas. Of extreme importance are the issues of showers. Bathers shower themselves after swimming in this high saline water for hygiene purposes. The only location where this is available is in Gilbert Bay. The use of other “non swimming areas” in Great Salt Lake for primary recreation is highly unlikely. Even though Gilbert Bay is managed for swimming activities there is also a “low likelihood of ingestion of water or a low degree of bodily contact with the water”. Nevertheless, the Division feels continuing with a primary recreation beneficial use is appropriate for Gilbert Bay.

Downgrading the open water areas of the wildlife management areas have numeric criteria according to the beneficial uses, e.g., 2B. These areas are defined by political/geographical boundaries. This beneficial use classification is associated with fresh water environments. The parameter to determine compliance is E. coli. E. coli is not recommended as a test organism for saline environments. This holds true especially for Great Salt Lake with a salinity of 1.0% to 3.5%. Therefore, the narrative for protection for recreational uses as described in the use classification 5A, 5B, 5C, and 5D are appropriate and also fit into the scheme of the present and proposed standards.

Downgrading by Removal of 3C or 3D:

The open water areas of the wildlife management areas have numeric criteria according to the beneficial uses indicated, e.g., 3C or 3D. These beneficial use classifications are associated with fresh water environments. This rule making will eliminate this erroneous use classifications and their associated numeric criteria since these use classifications do not apply to the open waters of Great Salt Lake due to its high level of salinity (1.0-3.5%). The Division has just concluded a comprehensive study to determine an appropriate selenium numeric standard for the Gilbert Bay, use classification 5A. That value is a tissue based standard of 12.5 mg/kg dry wt.

As more numeric criteria are developed for the open waters of Great Salt Lake, these will be added to the Standards of Quality for Waters of the State for the appropriate location(s) within the Lake.