



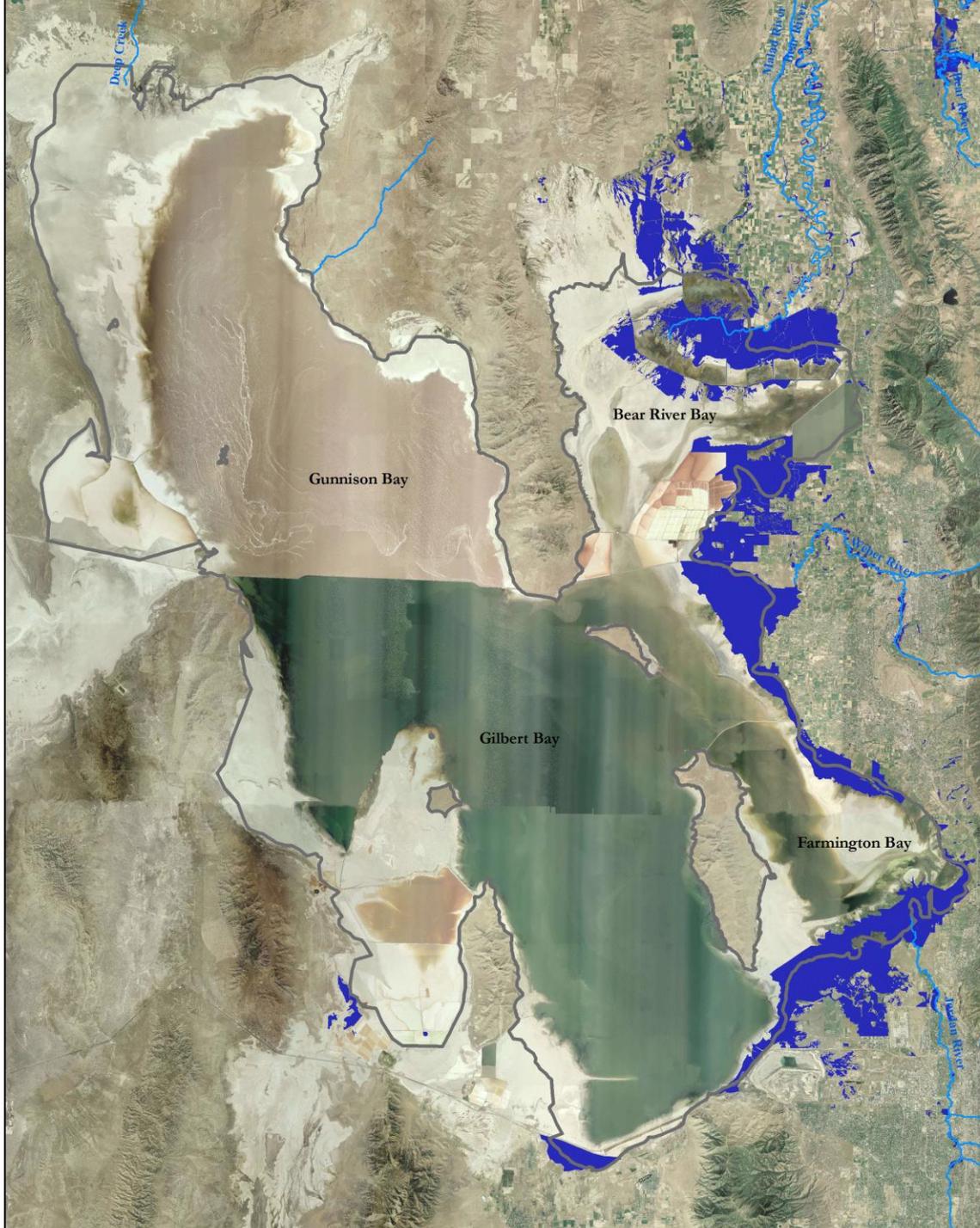
PROTECTING GREAT SALT LAKE: MEETING THE WATER QUALITY CHALLENGE

Photo courtesy of Charles Uibel, greatsaltlakephotos.com

Utah Department of Environmental Quality / Division
of Water Quality (UDWQ) 

Overview

- The Unique Great Salt Lake
- Need for a Great Salt Lake Water Quality Strategy
- Overview of the Water Quality Strategy
 1. Approach to Develop Numeric Water Quality Criteria
 2. Strategic Monitoring and Research Plan
 3. Wetland Program Plan
 4. Public Outreach Plan
 5. Resource Plan
- Ongoing Activities Related to the Strategy
- What Happens Next



Lake Level Fluctuations (1985 to 2009)



Clean Water Act and Utah Water Quality Act Requirements

- Identify **Beneficial Uses** for Water Bodies
- Identify **Water Quality Standards** to meet **Beneficial Uses**
- Regulate **Point Source Discharges**
- **Monitor** Water Quality
- **Assess** waters (305b Integrated Report) and **List** (303d list) waters that do not meet **Water Quality Standards**
- Identify sources and reductions needed (**TMDL**) and prepare a plan to reduce pollutants

Beneficial Uses

- Description of how the water will be used by humans and other organisms
- Great Salt Lake (Class 5)
 - ▣ Primary and Secondary Contact Recreation
 - ▣ Wildlife Protection

Great Salt Lake

Classification:

5A – Gilbert Bay

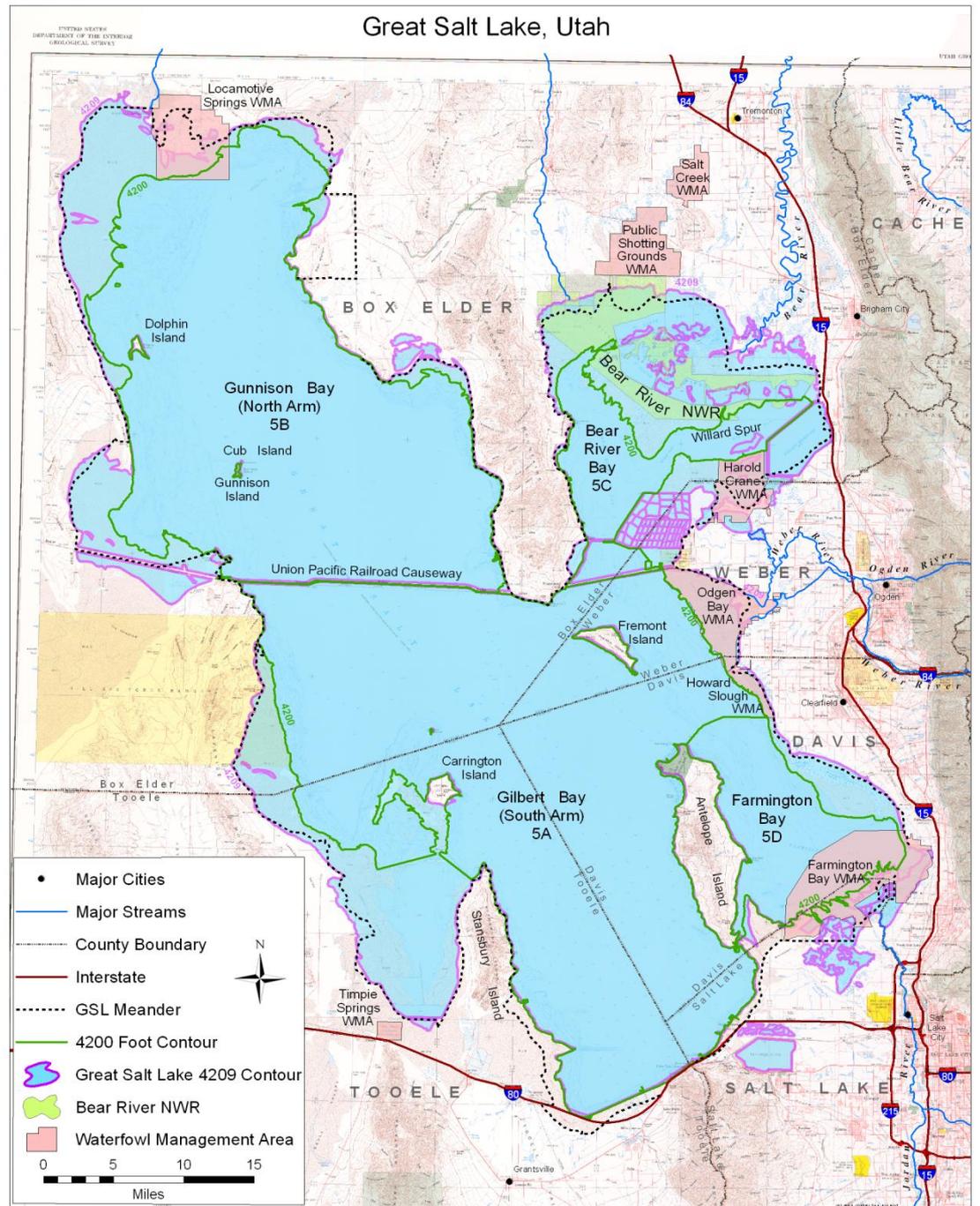
5B – Gunnison Bay

5C – Bear River Bay

5D – Farmington Bay

5E – Transitional

Wetlands



Water Quality Standards

- Numeric Criteria- Precise measurable level of a particular chemical or conditions allowable in a water body
 - ▣ Example: Lead criteria to protect aquatic organisms - 2.5 ug/L (4 day average)
 - ▣ Gilbert Bay has Great Salt Lake's only numeric criterion: Selenium
- Narrative Criteria: Narrative statement (e.g., “free from”) that establishes water quality goals

UPDES Industrial and Municipal Permits



- Mineral Extraction
- Industrial
- Publicly Owned Treatment Works
- Stormwater

Need for a Great Salt Lake Water Quality Strategy

- No clearly defined water quality criteria
- Permit limits based on technology based effluent limits
- Water quality decisions that may be over- or under-protective of the lake's beneficial uses
- Complications associated with analyzing saline waters
- Repeated appeals
- Difficult to estimate potential water quality effects of proposed developments

Need for a Great Salt Lake Water Quality Strategy

- Goal
 - ▣ Improve precision of UDWQ's decisions
 - ▣ Reduce regulatory uncertainty
 - ▣ Improve all's capacity to use the lake responsibly and be good stewards of lake water quality

- Proactive Approach to
 - ▣ Acquire new information
 - ▣ Fill knowledge gaps
 - ▣ Translate information into appropriate, scientifically sound, and transparent policy

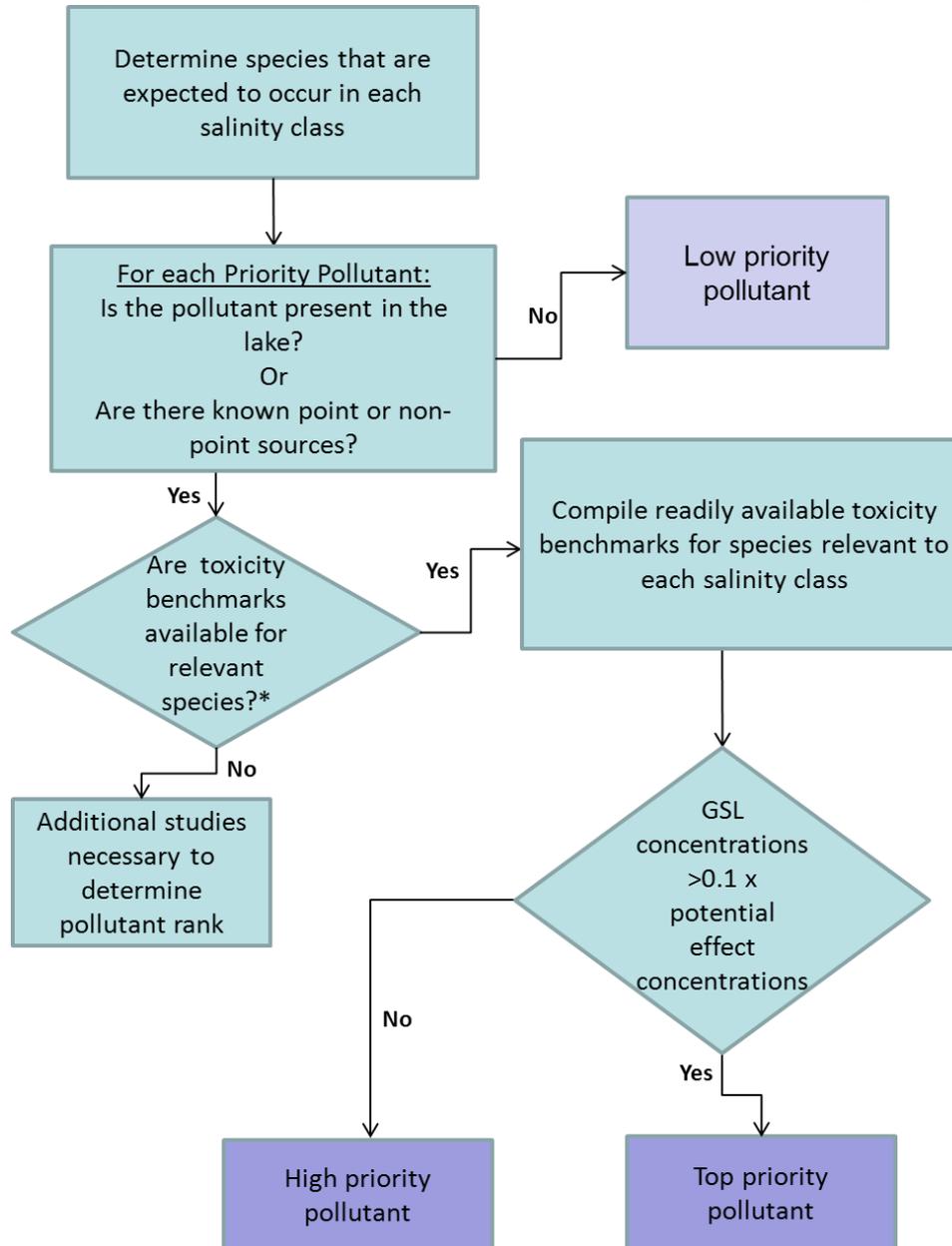
Core Components



Core Component 1: Developing Numeric Criteria

- Salinity based
 - Fresh Water
 - Marine
 - Hypersaline

Core Component 1: Prioritizing Pollutants



Core Component 1: Deriving Numeric Criteria

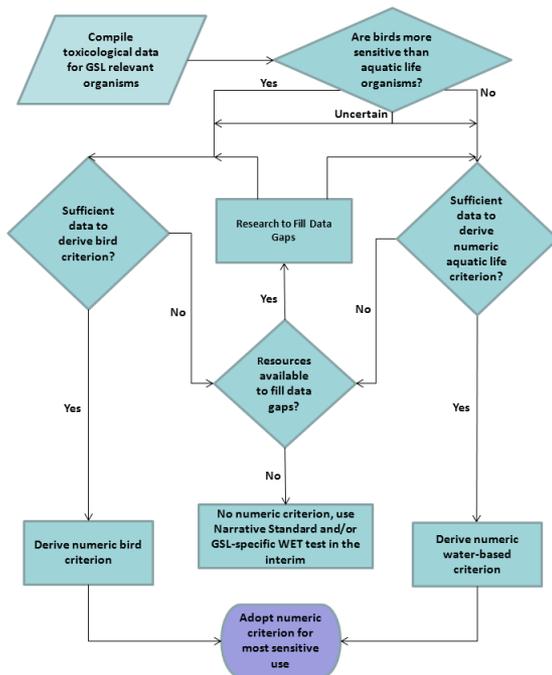
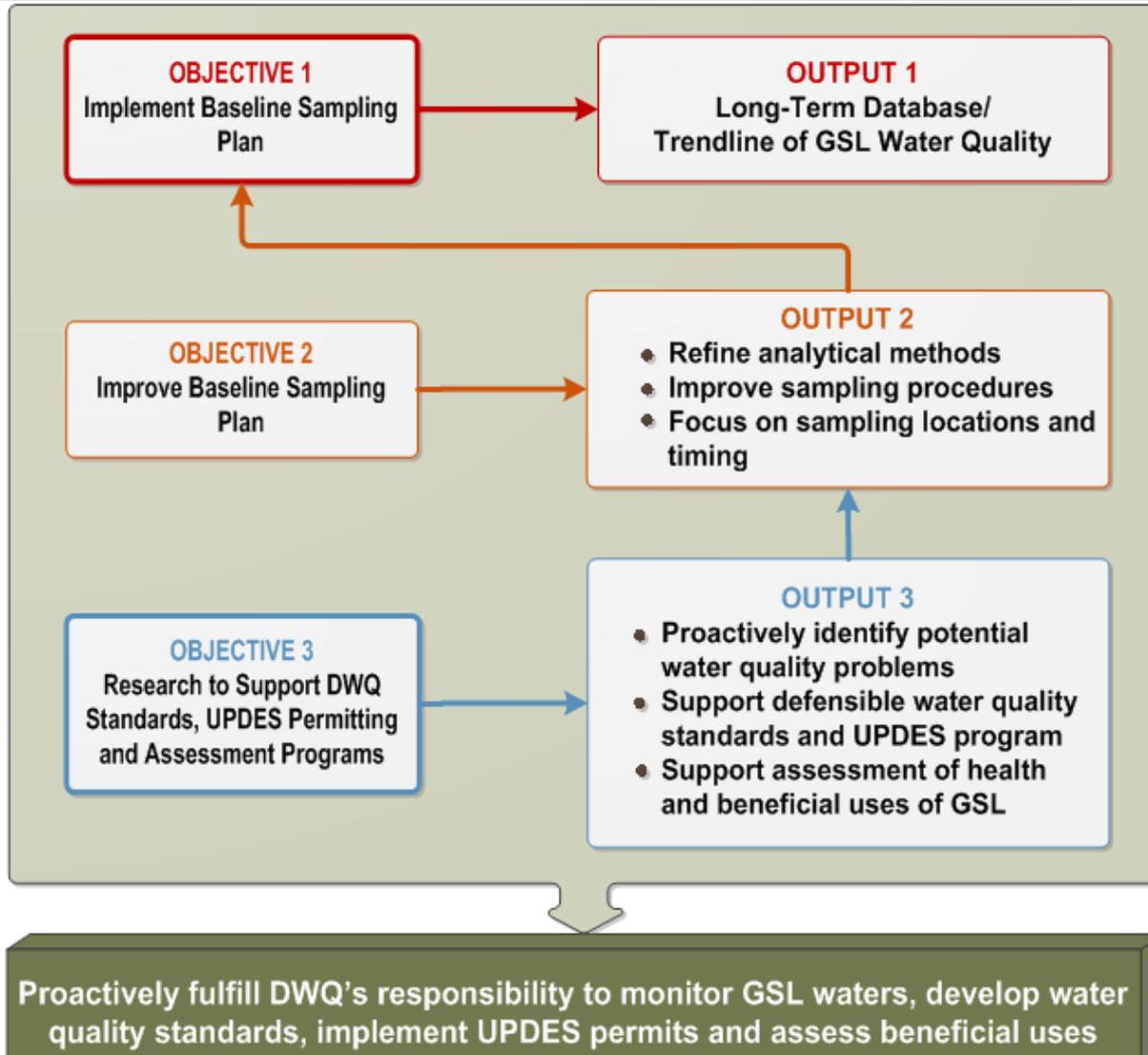


Figure 3 – Process for deriving numeric criteria for top and high priority pollutants

- Compile toxicological data for GSL relevant organisms
- Determine which is more sensitive, birds or aquatic life organisms
- If there is sufficient information, derive numeric criterion and adopt for most sensitive use
- If not, conduct research and determine resources available

Core Component 2: Strategic Monitoring and Research



Monitoring: Implement Baseline Sampling Plan

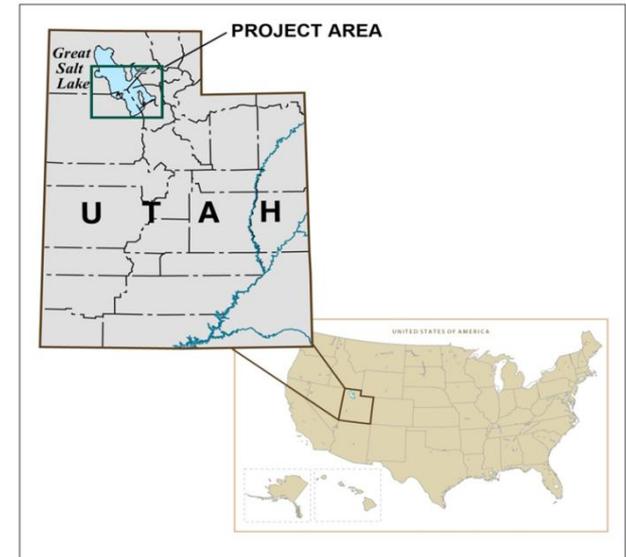
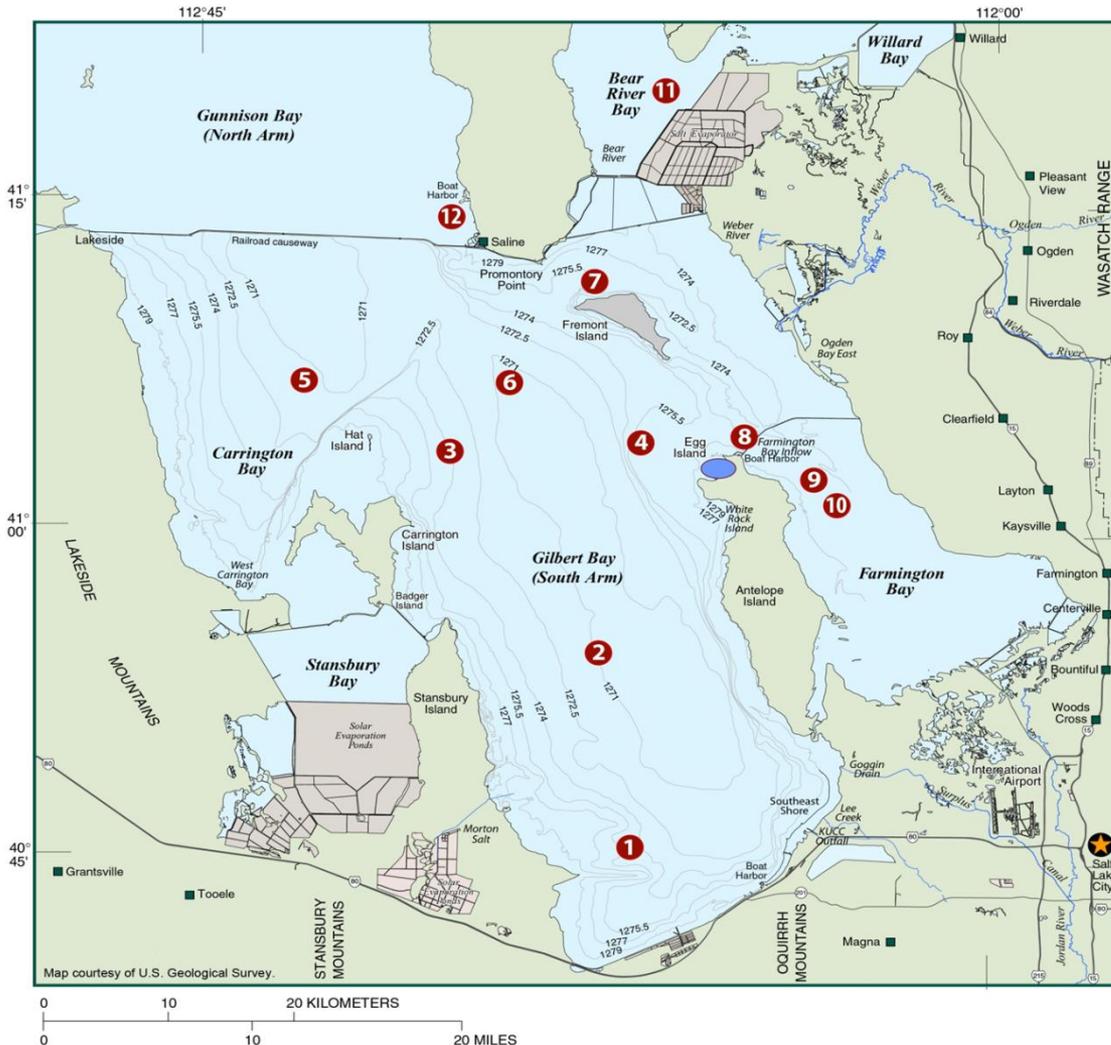


FIGURE 2-1
GSL Baseline Sampling Plan Study Area and Sampling Location
Great Salt Lake Water Sampling Plan

Monitoring: Improve Baseline Sampling Plan

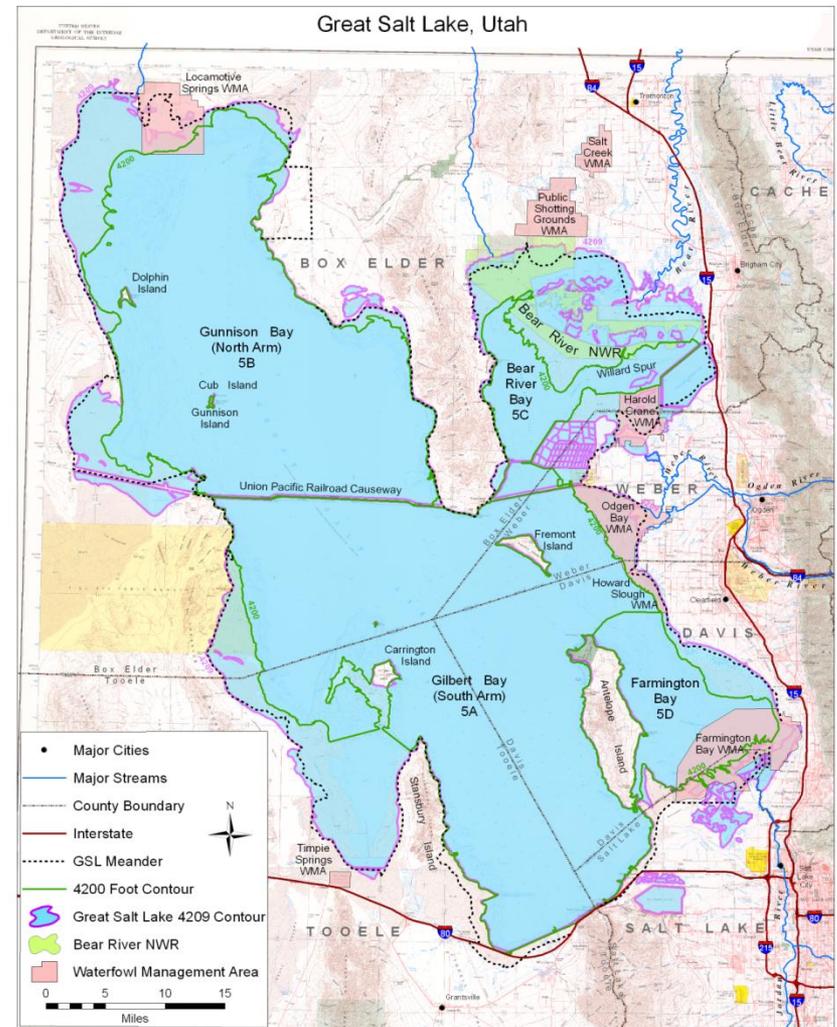
- Verify and Confirm
 - Sampling procedures
 - Laboratory analytical methods
 - Sampling locations
 - Time of sampling
 - Frequency of sampling
 - Contaminants to be monitored

Research to support UDWQ programs

- Support criteria development (i.e. Toxicity testing and Willard Spur Study)
- Support UPDES decisions (i.e. bird egg monitoring for Selenium and Mercury)
- Support beneficial use assessments (i.e. wetland assessment frameworks)

Core Component 3: Wetland Program Plan (under development)

- 360,000 acres of wetlands exist adjacent to the lake and are critical to the recreational and biological uses
- Applying existing numeric standards has been problematic
 - ▣ Based on political boundaries rather than ecological characteristics
 - ▣ Not all wetlands are protected
 - ▣ Not wetland specific
- Develop plan in collaboration with wetland stakeholders



Core Components 4 and 5: Public Outreach Plan and Resource Plan (under development)

- Public Outreach Plan
 - UDWQ will work with government, partners, stakeholders, and the general public by
 - Enhancing awareness
 - Building support
 - Leveraging partnerships
 - Securing resources

- Resource Plan:
 - Identify resource needs and prioritize
 - Maximize limited resources
 - Develop plan that summarizes short and long term resources to meet strategy objectives

What Happens Next

- April 18: Kickoff presentation by UDWQ to the Water Quality Board
- April 18 – May 2: Stakeholder meetings prior to the public comment period
- June 1 – July 16: Public comment period
- June 19: Open House
- After July 16: UDWQ prepares a summary of comments and revises strategy as appropriate
- August 22: UDWQ presents final strategy to the Water Quality Board for action

Comments welcomed!

- The Great Salt Lake Water Quality Strategy can be accessed at <http://www.waterquality.utah.gov/greatsaltlake/>
- Please send comments regarding the strategy to jgardberg@utah.gov



Great Salt Lake
provides its important
recreational, ecological
and economic benefits
for current and future
generations

Photo courtesy of Charles Uibel, greatsaltlakephotos.com

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