

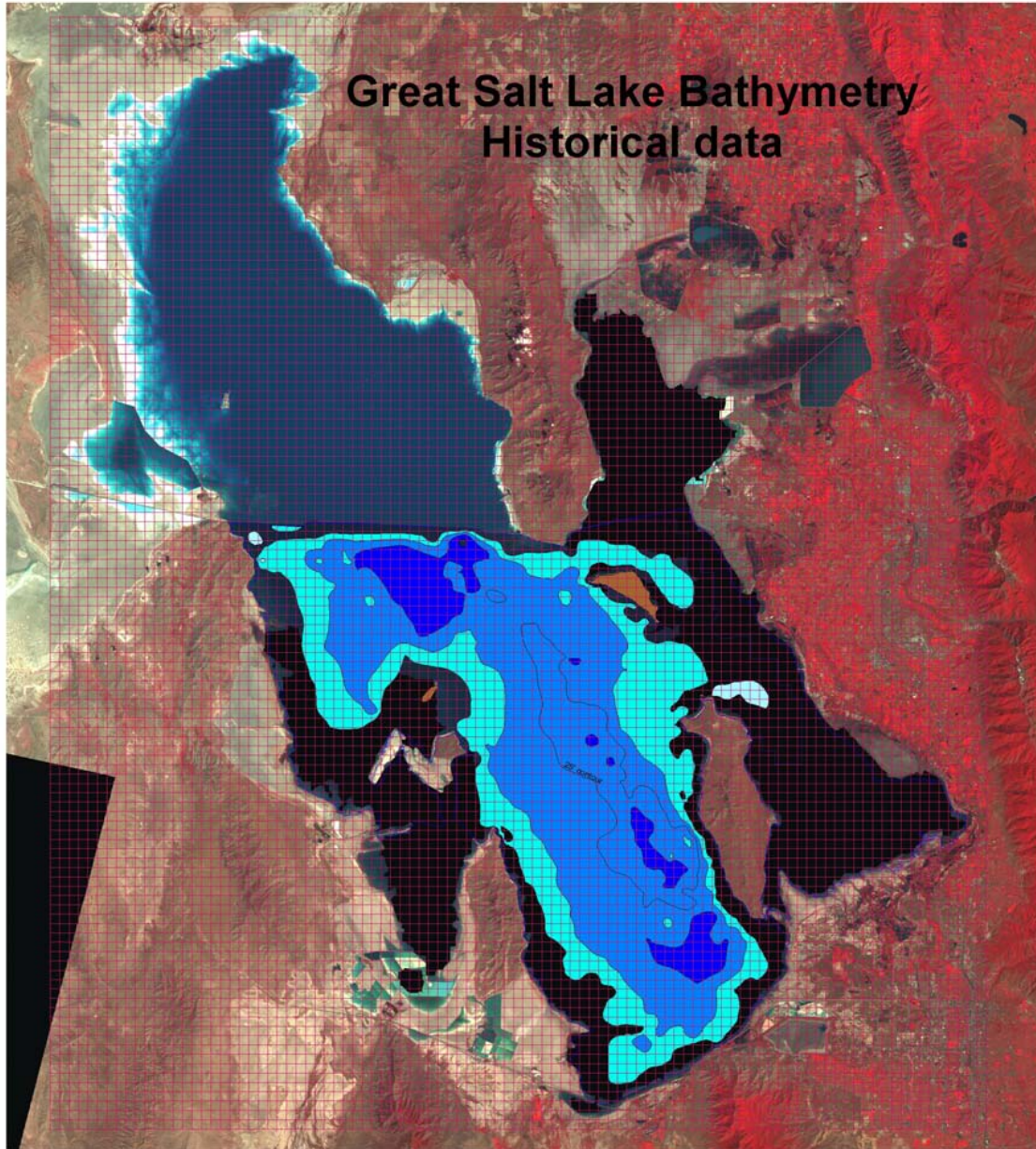
An Integrated Approach to Understanding the Physical and Chemical Characteristics of Great Salt Lake

A Cooperative Study between Utah Department of Natural
Resources, Division of Wildlife Resources
and U.S. Geological Survey

Primary Objectives

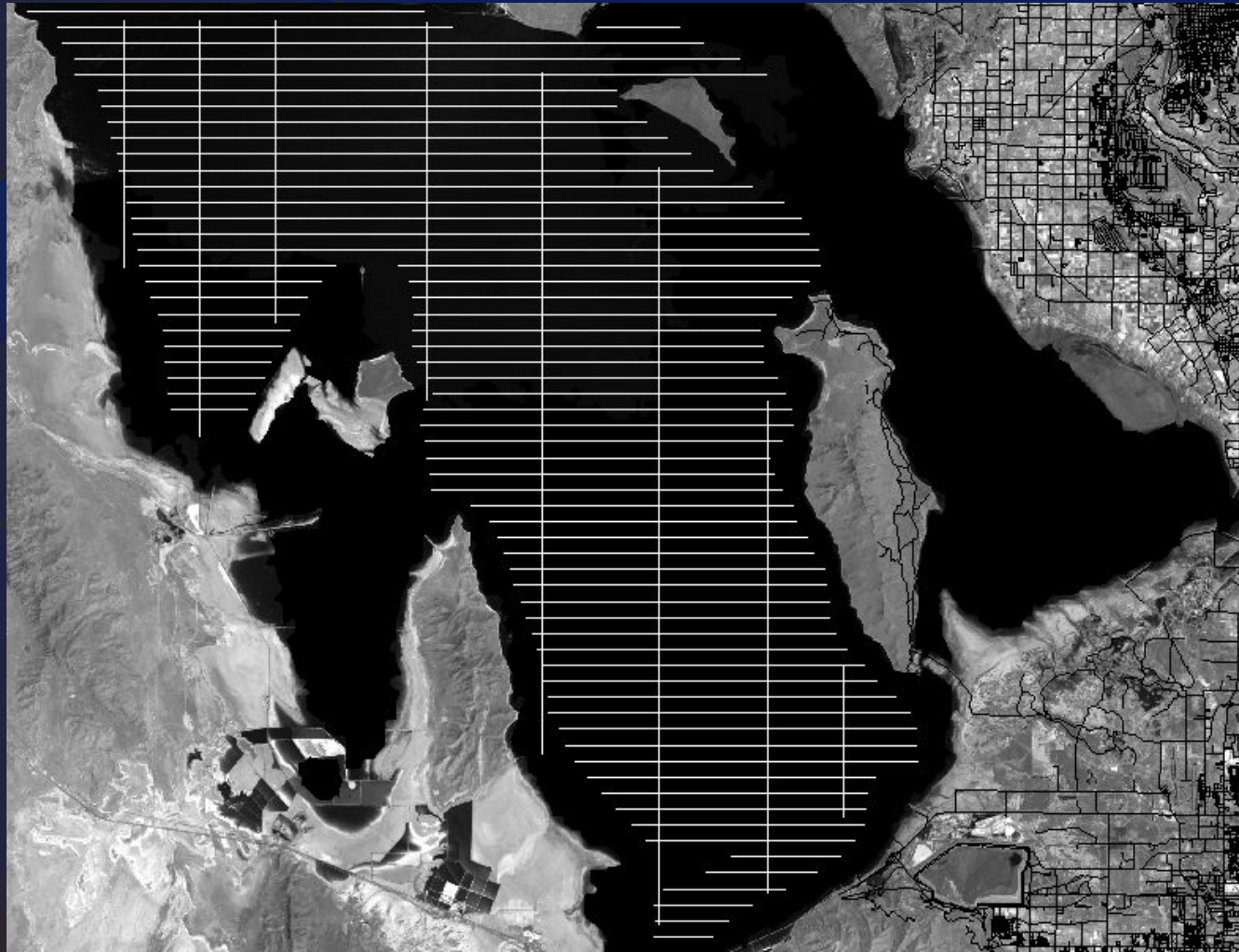
- Define the physical constraints, circulation, and mixing rates of Great Salt Lake
- Determine the nutrient (nitrogen and phosphorus species) budget
- Quantify the occurrence and distribution of anthropogenic heavy metals, trace elements, and synthetic organic compounds

Great Salt Lake Bathymetry Historical data



3 0 3 6 9 12 15 18 21 24 27 30 Miles

Great Salt Lake Bathymetry



Great Salt Lake Bathymetry

- Physical Parameters of the lake/water
 - High density brine (9-26+ percent NaCl)
 - High sound velocities
 - High coefficient of friction
 - Electrically conductive
 - Shallow Water
 - Access limitations
 - Short timing intervals
 - “Surf”s up”

Great Salt Lake Bathymetry

- Equipment Issues
 - Most equipment not designed for GSL Conditions
 - Shallow/high speed depths
 - High density water (physical issues)
 - Speed of sound corrections
 - Boat engine issues
 - Needed to keep it as simple as possible (corrosion problem)

Global Positioning System



Depth Finder



Computer Navigation/Logging

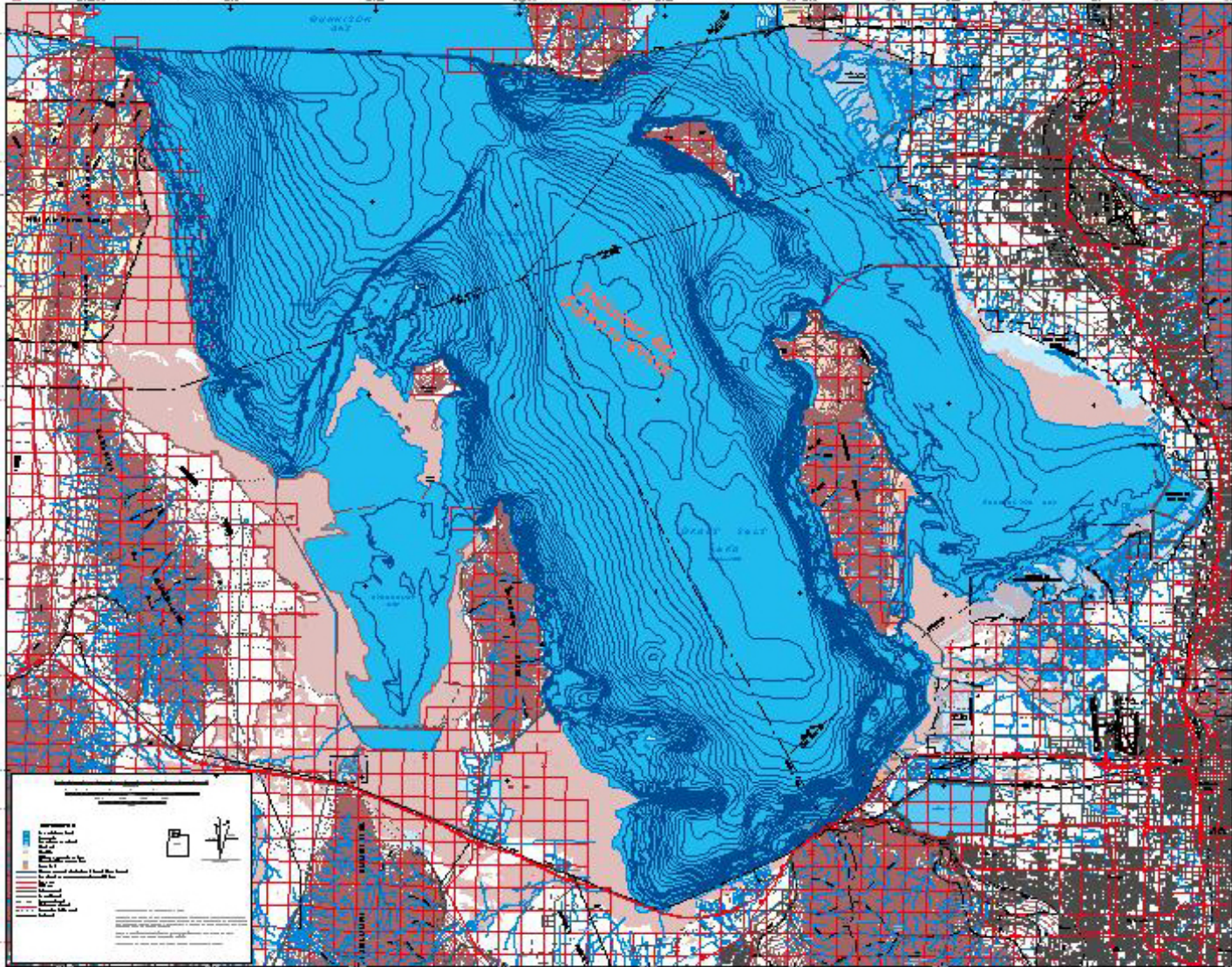


Data Collection

- 1,690 km of data
- 7,600,000 original points
- 2,040,000 after cleanup
- 381,000 after filter and average

Great Salt Lake Bathymetry

- Data products
 - Bathymetric map of South part of Great Salt Lake
 - Bottom materials available (map?)
 - Structures (faults, mounds, etc.) map
 - Assists in U. of U. work
 - Area/Volume/Elevation table
 - Digital data for future use
 - Visualization/modeling/circulation control/etc.



Legend

- Contour Interval: 100 feet
- Spot Elevation: 100 feet or more
- Spot Elevation: 500 feet or more
- Spot Elevation: 1000 feet or more
- Spot Elevation: 2000 feet or more
- Spot Elevation: 3000 feet or more
- Spot Elevation: 4000 feet or more
- Spot Elevation: 5000 feet or more
- Spot Elevation: 6000 feet or more
- Spot Elevation: 7000 feet or more
- Spot Elevation: 8000 feet or more
- Spot Elevation: 9000 feet or more
- Spot Elevation: 10000 feet or more
- Spot Elevation: 11000 feet or more
- Spot Elevation: 12000 feet or more
- Spot Elevation: 13000 feet or more
- Spot Elevation: 14000 feet or more
- Spot Elevation: 15000 feet or more
- Spot Elevation: 16000 feet or more
- Spot Elevation: 17000 feet or more
- Spot Elevation: 18000 feet or more
- Spot Elevation: 19000 feet or more
- Spot Elevation: 20000 feet or more
- Spot Elevation: 21000 feet or more
- Spot Elevation: 22000 feet or more
- Spot Elevation: 23000 feet or more
- Spot Elevation: 24000 feet or more
- Spot Elevation: 25000 feet or more
- Spot Elevation: 26000 feet or more
- Spot Elevation: 27000 feet or more
- Spot Elevation: 28000 feet or more
- Spot Elevation: 29000 feet or more
- Spot Elevation: 30000 feet or more
- Spot Elevation: 31000 feet or more
- Spot Elevation: 32000 feet or more
- Spot Elevation: 33000 feet or more
- Spot Elevation: 34000 feet or more
- Spot Elevation: 35000 feet or more
- Spot Elevation: 36000 feet or more
- Spot Elevation: 37000 feet or more
- Spot Elevation: 38000 feet or more
- Spot Elevation: 39000 feet or more
- Spot Elevation: 40000 feet or more
- Spot Elevation: 41000 feet or more
- Spot Elevation: 42000 feet or more
- Spot Elevation: 43000 feet or more
- Spot Elevation: 44000 feet or more
- Spot Elevation: 45000 feet or more
- Spot Elevation: 46000 feet or more
- Spot Elevation: 47000 feet or more
- Spot Elevation: 48000 feet or more
- Spot Elevation: 49000 feet or more
- Spot Elevation: 50000 feet or more

Geographic Map of the South and West of Oahu, Hawaii, of the
Federal U.S. Census and David V. Allen
1998