USGS
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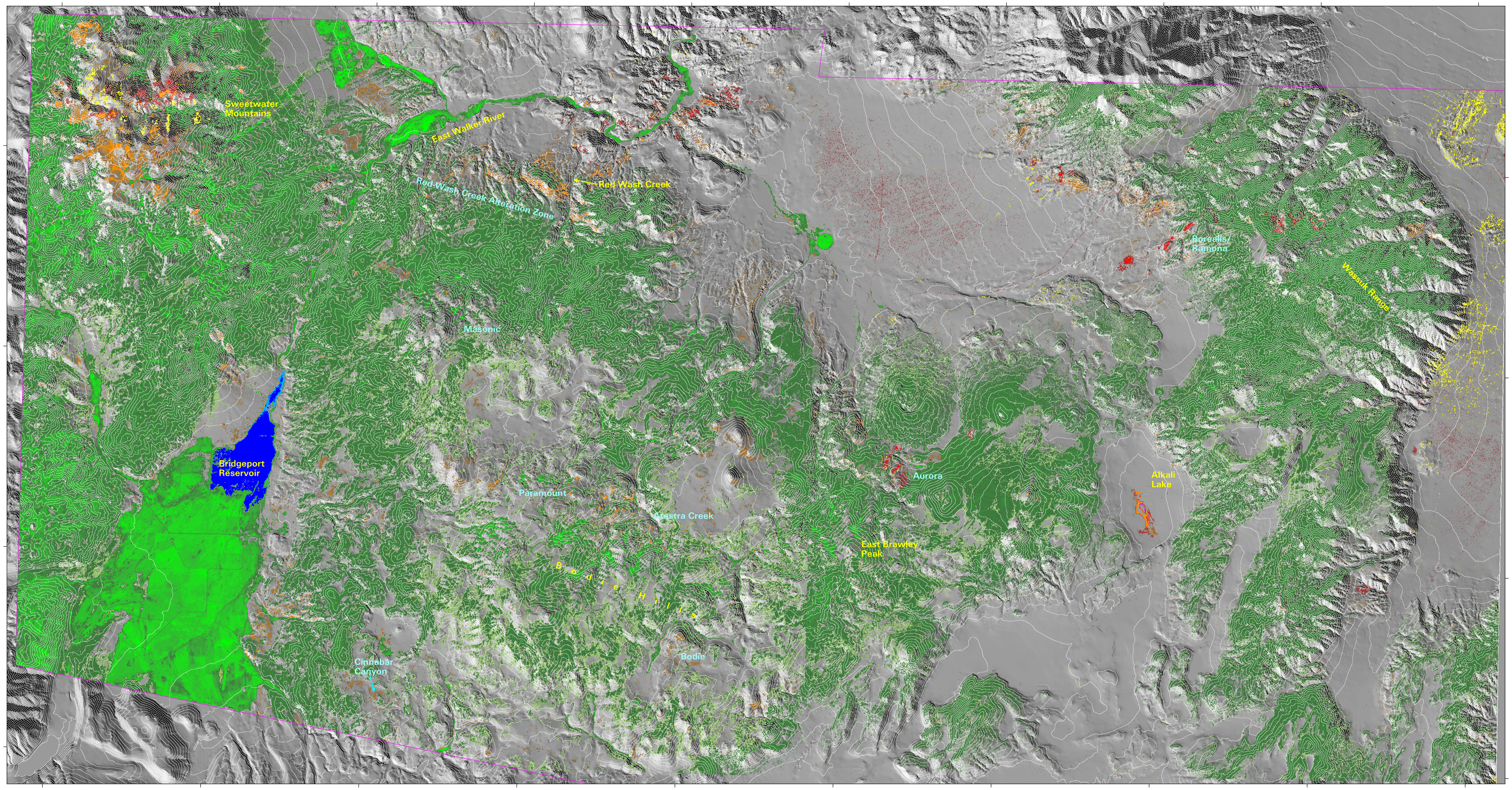
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

SCIENTIFIC INVESTIGATIONS MAP 3104
SHEET 2 OF 4
Version 1.0
Pamphlet accompanies map



ASTER scene information:

West scene:
Scene ID AST_L1A.003:2008798944
Acquired August 12, 2000

East Scene:
Scene ID AST_L1B.003:2024614684
Acquired June 20, 2004

Material mapping performed using techniques described by Rockwell (2009). Mapping has been field verified only in selected areas.

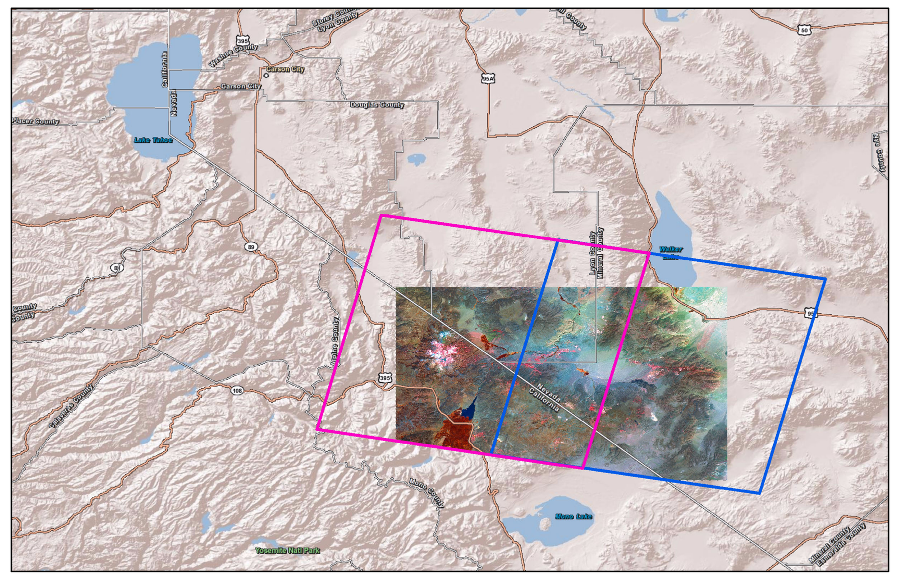
ASTER data orthorectified using a Projective Transform to orthorectified Landsat TM data and a 1/3 arc second digital elevation model (≈10 m resolution) from USGS National Elevation Dataset (NED). NED and Landsat data provided by USGS Seamless Data Distribution System.

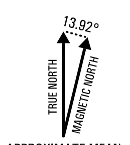
Contours and shaded relief image generated from NED 1/3 arc second data. Contour interval 40 m.

Universal Transverse Mercator, Zone 11 north, Clarke 1866 spheroid, 1927 North American Datum.

Mines, mining districts, and altered areas indicated in pale cyan.

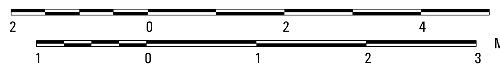
Index map showing location of study area and ASTER scene footprints





APPROXIMATE MEAN DECLINATION, 2009

Scale



1 : 62 000

Contour interval = 40 meters

Explanation for ASTER spectral mapping:

Iron-bearing minerals

- C — Ferric iron minerals, including jarosite, goethite, and hematite
- C — Low-abundance ferric iron minerals, mainly oxides and (or) hydroxides (may include sparse senescent or dry brown/yellow vegetation)
- Sericite +/- chlorite (+/- carbonate)
- Possible copiapite, melting snow in Sweetwater Mountains, or iron-bearing muds in Alkali Lake

C - Continuous stretch applied. Bright shades of color indicate greater absorption feature depth and higher degree of fit to laboratory reference spectra. Feature depth may correlate with mineral abundance given constant grain size. For vegetation, darker shades indicate lower chlorophyll content and (or) plant density.

Vegetation

- C — Green vegetation
- Dry/green vegetation
- Dry, non-photosynthetic vegetation (for example, grasses)

Water

- Deep, low turbidity
- Shallow and (or) turbid, +/- chlorophyll
- Shallow/turbid and (or) mud

Lines indicate limits of ASTER data coverage analyzed for this study.

MINERAL AND VEGETATION MAPS OF THE BODIE HILLS, SWEETWATER MOUNTAINS, AND WASSUK RANGE, CALIFORNIA/NEVADA, GENERATED FROM ASTER SATELLITE DATA

MAP OF IRON-BEARING MINERALS, VEGETATION, AND WATER

By

Barnaby W. Rockwell

2010