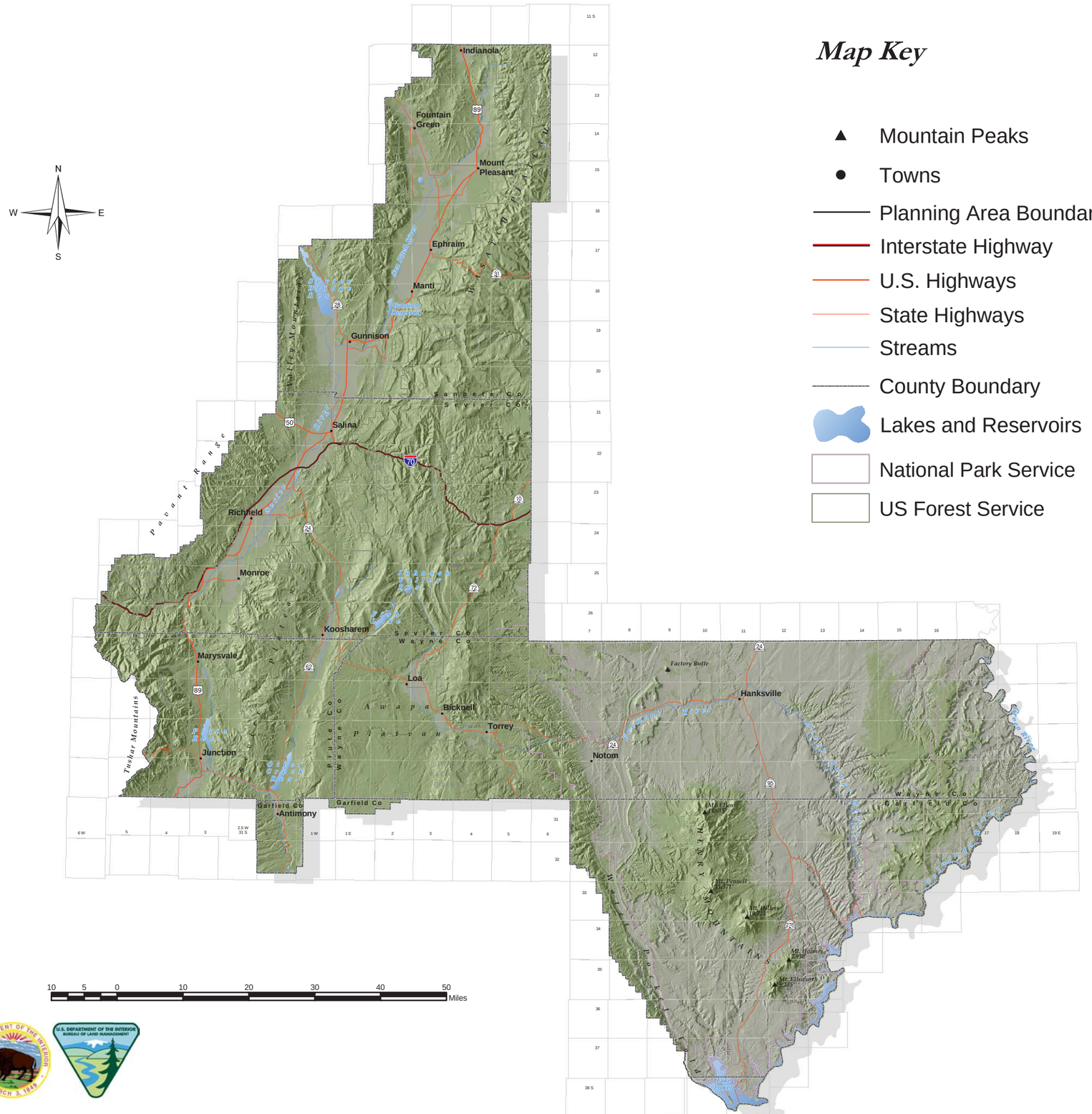
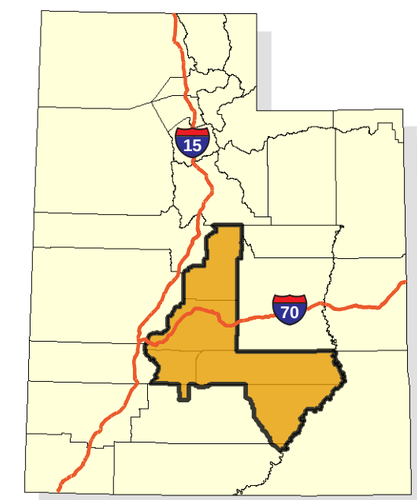
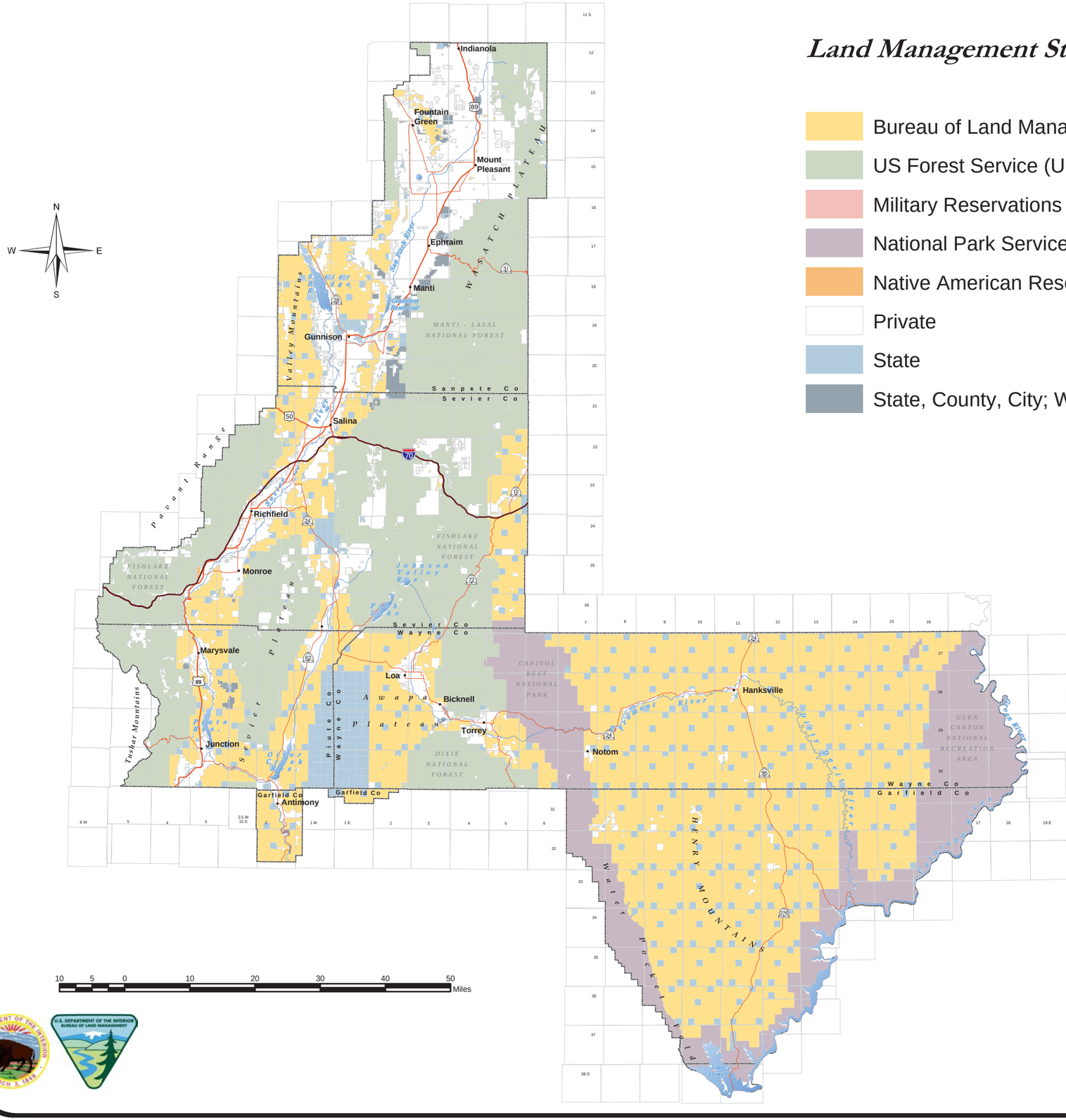


Map Key

- ▲ Mountain Peaks
- ● Towns
- Planning Area Boundary
- Interstate Highway
- U.S. Highways
- State Highways
- Streams
- County Boundary
- Lakes and Reservoirs
- National Park Service
- US Forest Service



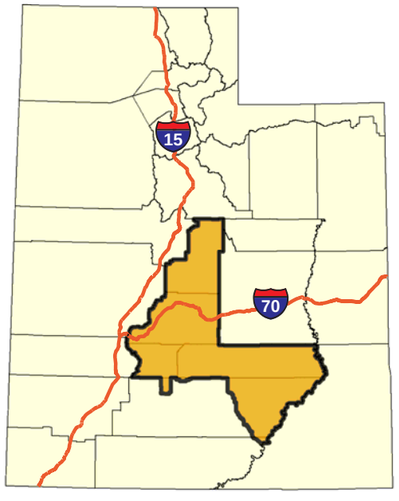
Map 1
General Location Map of the Planning Area



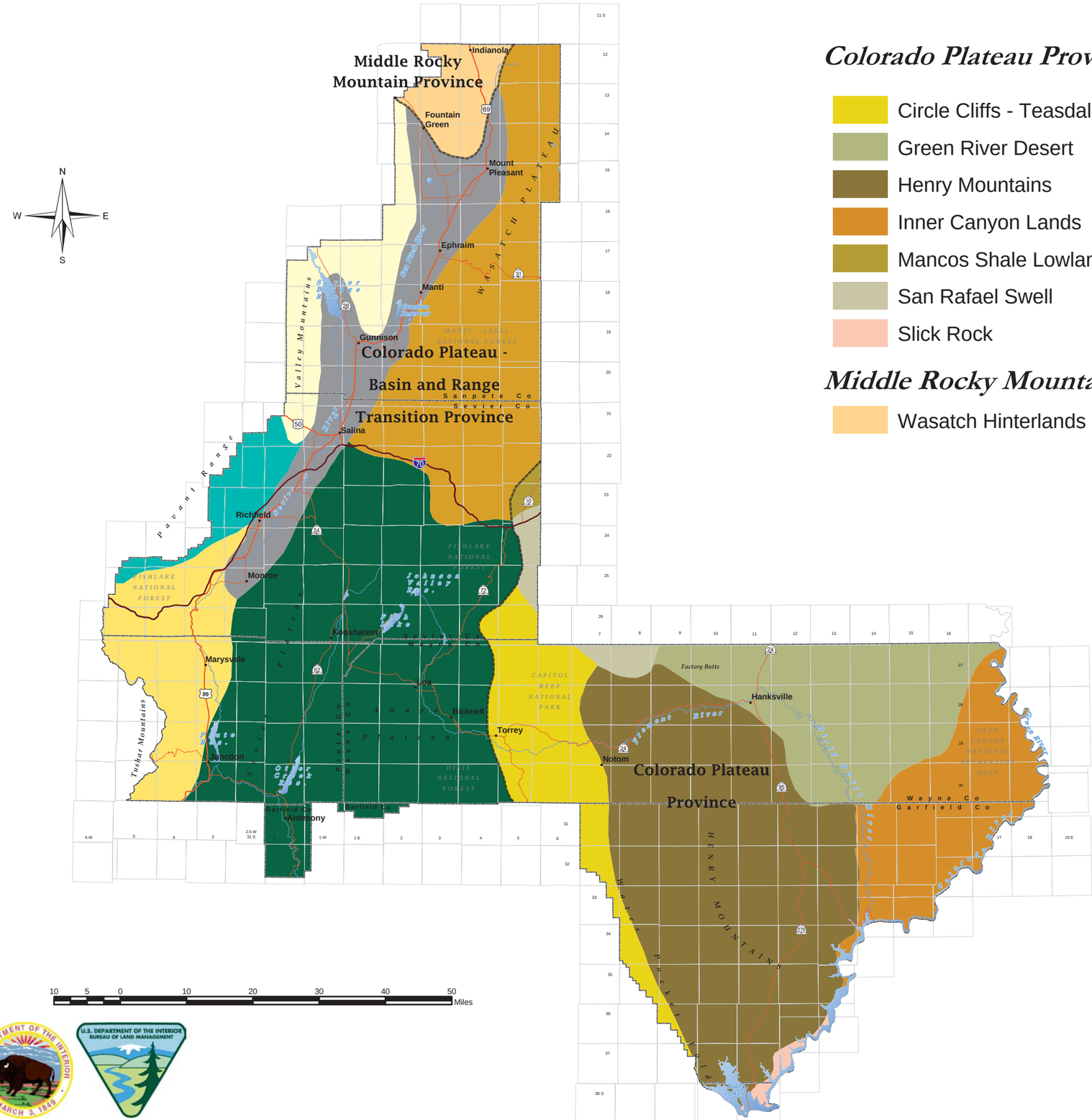
Land Management Status

- Bureau of Land Management (BLM)
- US Forest Service (USFS)
- Military Reservations and Corps of Engineers
- National Park Service (NPS)
- Native American Reservation
- Private
- State
- State, County, City; Wildlife, Park and Outdoor Recreation Areas

- Planning Area Boundary
- Interstate Highway
- U.S. Highways
- State Highways
- Streams
- County Boundary



Map 2
Land Management Status



Colorado Plateau Province

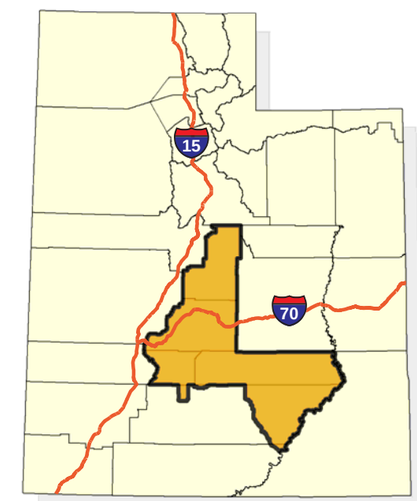
- Circle Cliffs - Teasdale Anticline
- Green River Desert
- Henry Mountains
- Inner Canyon Lands
- Mancos Shale Lowland
- San Rafael Swell
- Slick Rock

Middle Rocky Mountain Province

- Wasatch Hinterlands

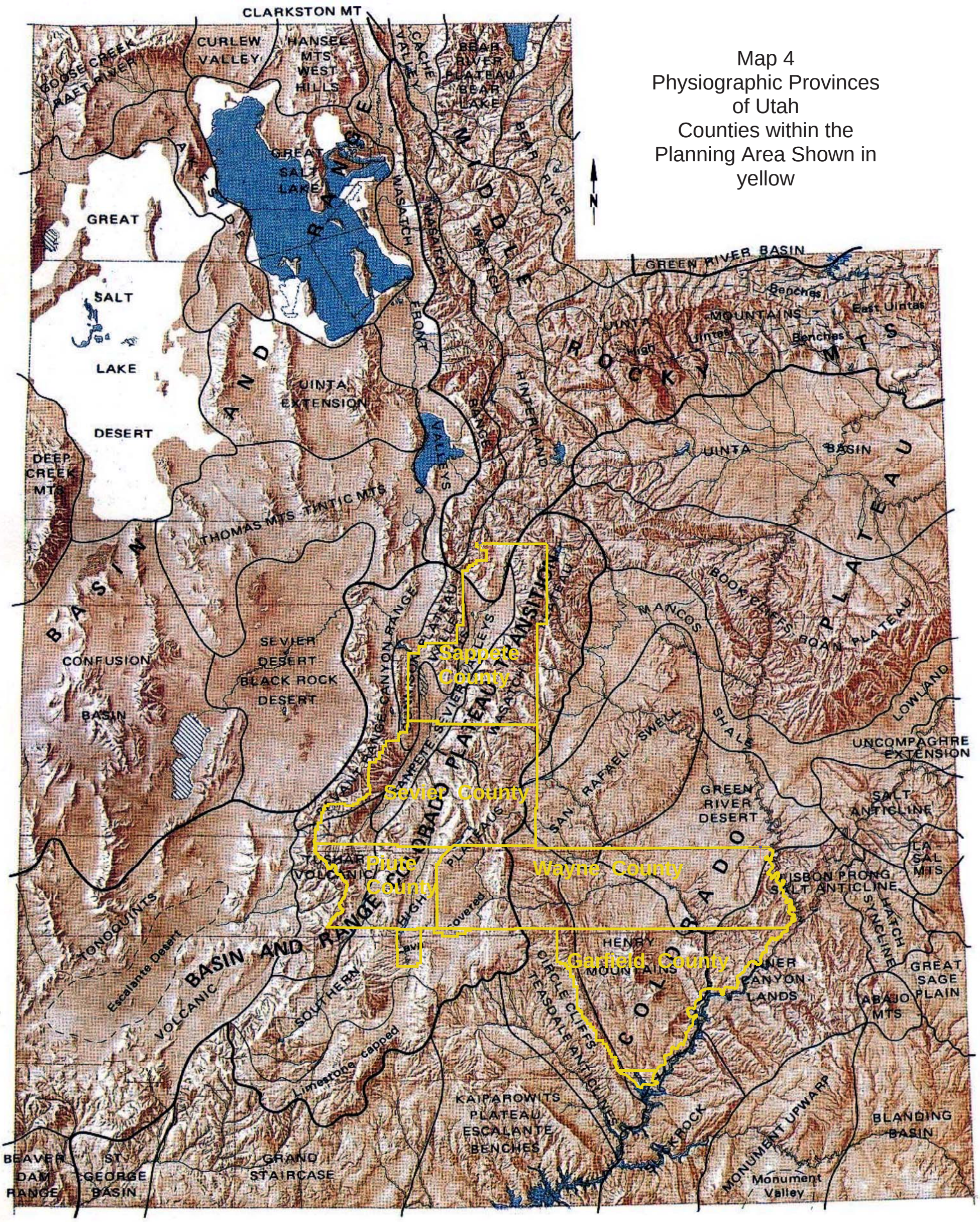
Colorado Plateau - Basin and Range Transition Province

- Gunnison Plateau - Valley Mountains
- Pavant Range - Canyon Range
- Southern High Plateau
- Sanpete - Sevier Valleys
- Tushar Volcanics
- Wasatch Plateau
- Planning Area Boundary
- Physiographic Province Boundary

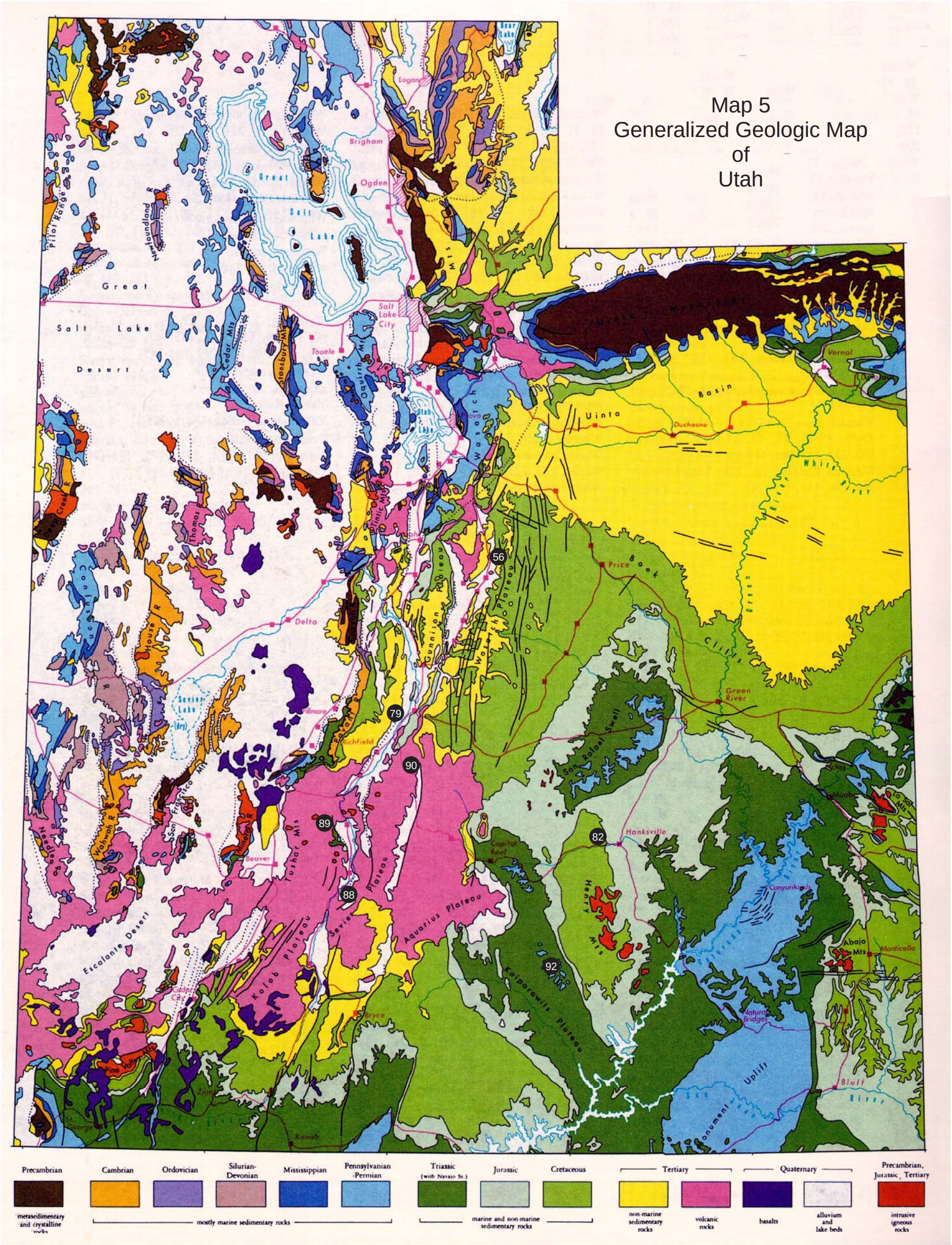


Map 3
Physiographic Provinces in the Planning Area

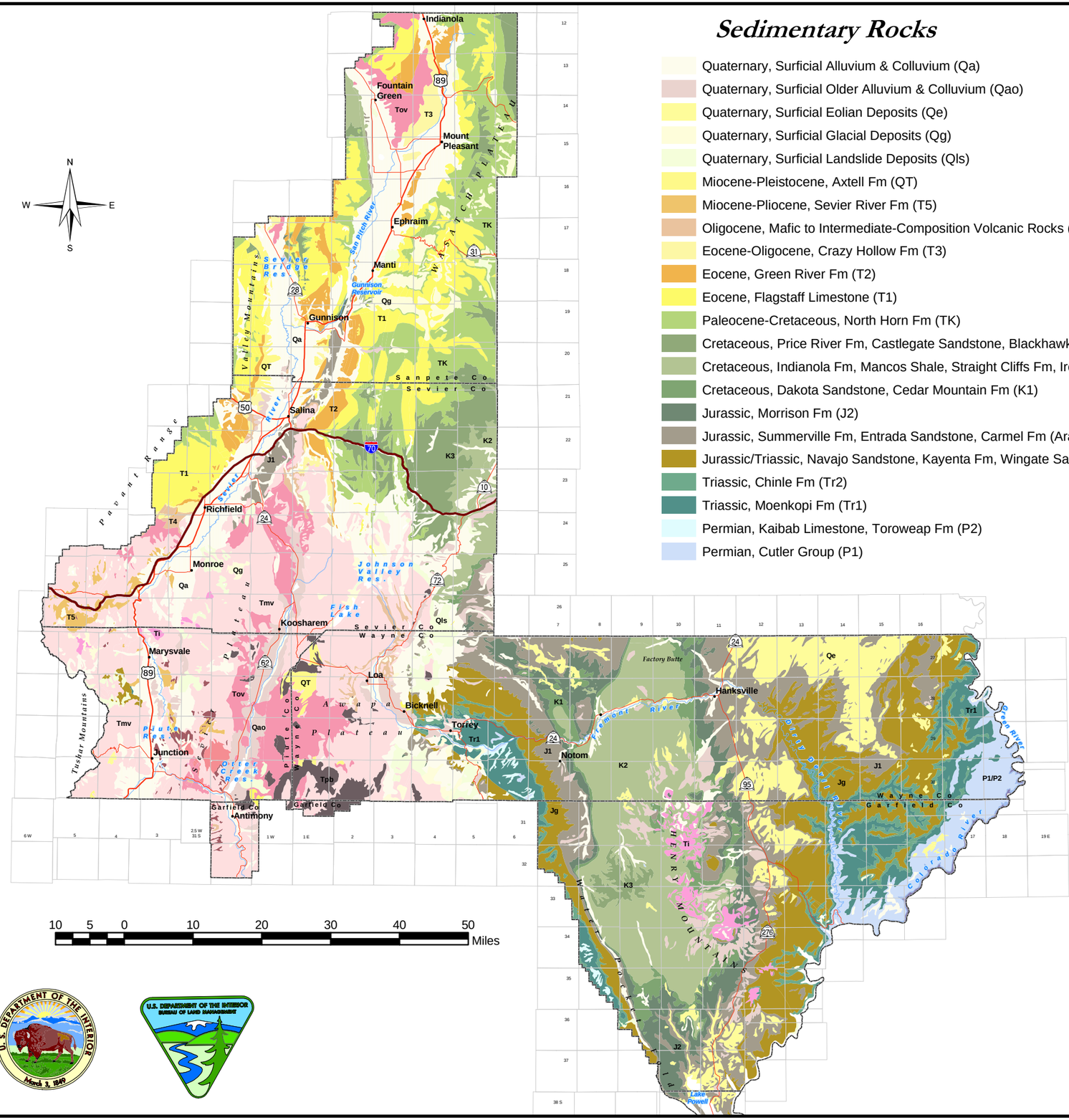
Map 4
Physiographic Provinces
of Utah
Counties within the
Planning Area Shown in
yellow



Source: Stokes, 1986



NOTE: Numbers correspond to Stratagraphic Sections. Stratagraphic Sections are taken from Hintze, 1988.
Map Source: Stokes 1986



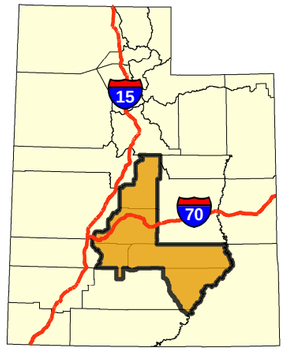
Sedimentary Rocks

- Quaternary, Surficial Alluvium & Colluvium (Qa)
- Quaternary, Surficial Older Alluvium & Colluvium (Qao)
- Quaternary, Surficial Eolian Deposits (Qe)
- Quaternary, Surficial Glacial Deposits (Qg)
- Quaternary, Surficial Landslide Deposits (Qls)
- Miocene-Pleistocene, Axtell Fm (QT)
- Miocene-Pliocene, Sevier River Fm (T5)
- Oligocene, Mafic to Intermediate-Composition Volcanic Rocks (T4)
- Eocene-Oligocene, Crazy Hollow Fm (T3)
- Eocene, Green River Fm (T2)
- Eocene, Flagstaff Limestone (T1)
- Paleocene-Cretaceous, North Horn Fm (TK)
- Cretaceous, Price River Fm, Castlegate Sandstone, Blackhawk Fm, Star Point Ss (K3)
- Cretaceous, Indianola Fm, Mancos Shale, Straight Cliffs Fm, Iron Springs Fm (K2)
- Cretaceous, Dakota Sandstone, Cedar Mountain Fm (K1)
- Jurassic, Morrison Fm (J2)
- Jurassic, Summerville Fm, Entrada Sandstone, Carmel Fm (Arapien Shale) (J1)
- Jurassic/Triassic, Navajo Sandstone, Kayenta Fm, Wingate Sandstone (Jg)
- Triassic, Chinle Fm (Tr2)
- Triassic, Moenkopi Fm (Tr1)
- Permian, Kaibab Limestone, Toroweap Fm (P2)
- Permian, Cutler Group (P1)

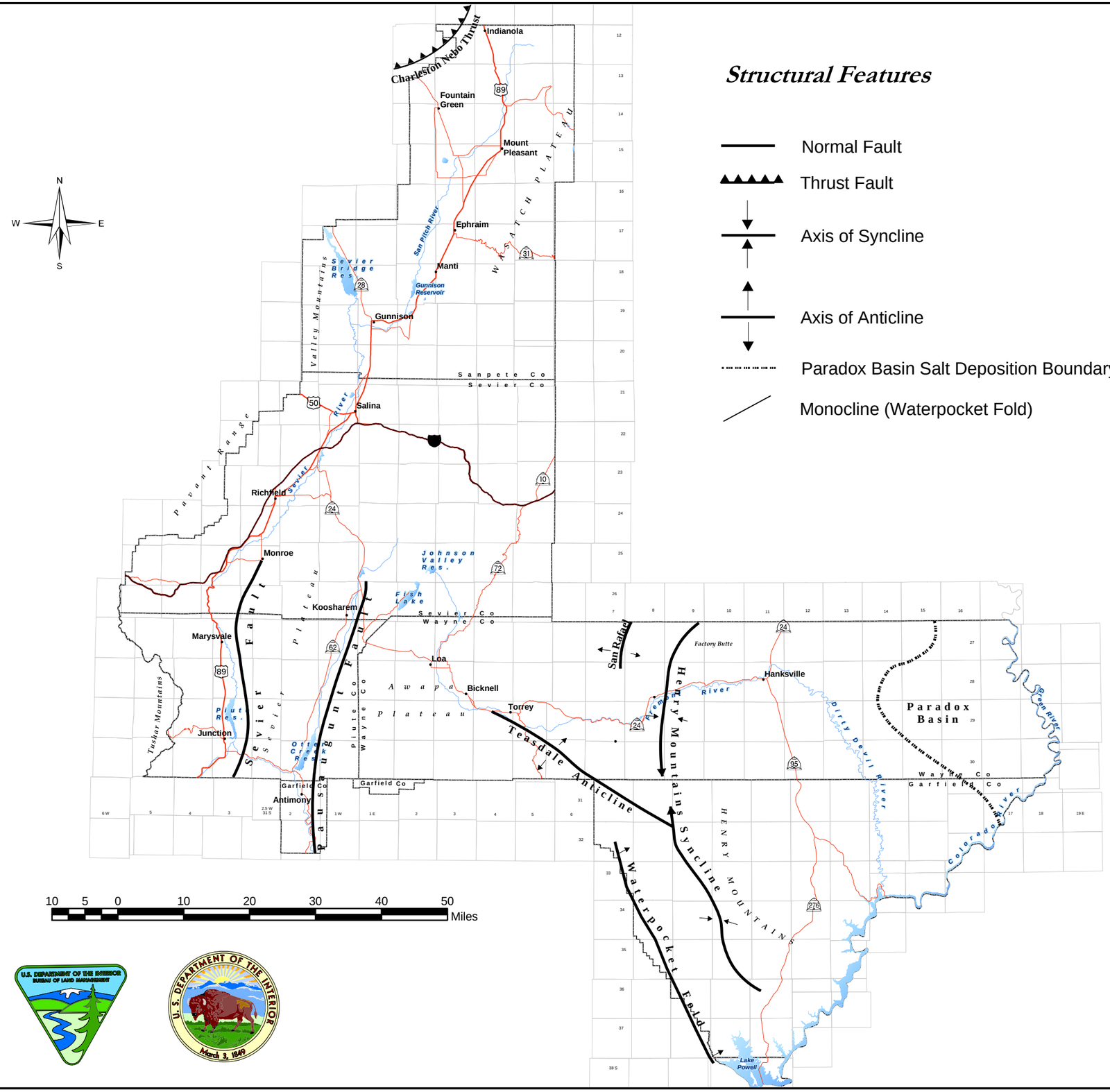
Igneous Rocks

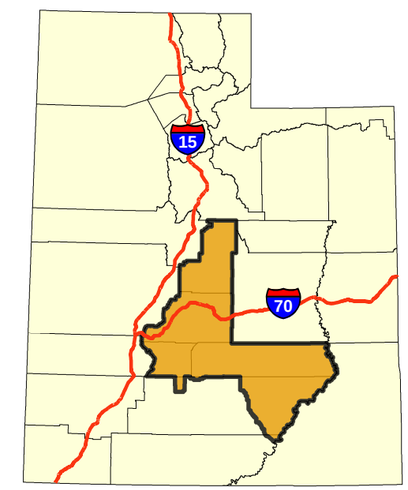
- Pliocene, Volcanic Rocks - Mostly Basalt (Tpb)
- Pliocence, Volcanic Rocks - Rhyolite (Tpr)
- Miocence, Volcanic Rocks - Basalt, Rhyolite, Andesite, Tuffaceous Rocks (Tmb)
- Miocence, Volcanic Rocks - Rhyolite (Tmr)
- Miocence, Volcanic Rocks - Undivided (Tmv)
- Oligocene, Volcanic Rocks - Undivided (Tov)
- Tertiary, Intrusive Rocks (Ti)

- Planning Area Boundary
- Interstate Highway
- U.S. Highways
- State Highways
- Streams
- County Boundary

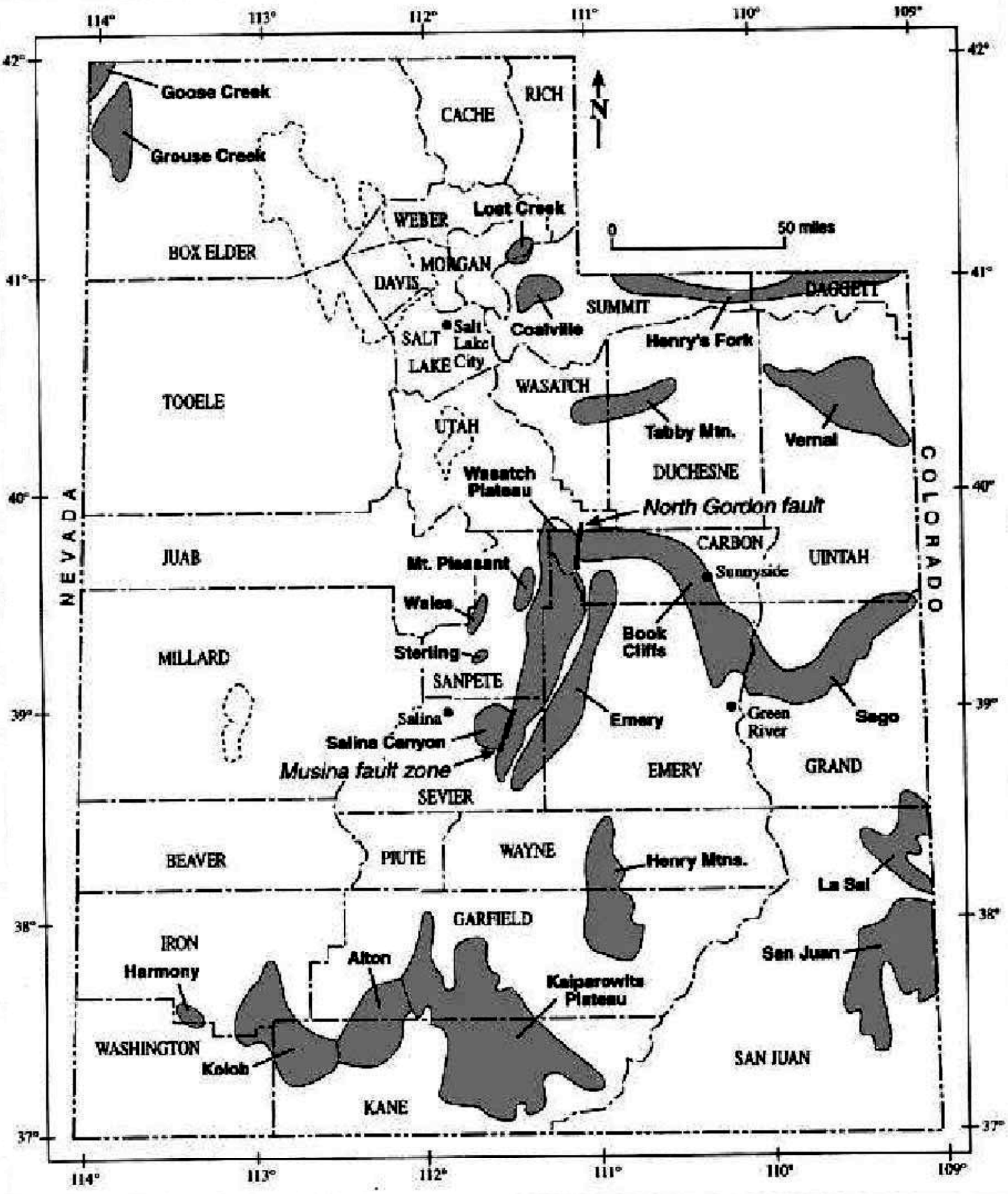


Map 6
Geologic Map of the Planning Area

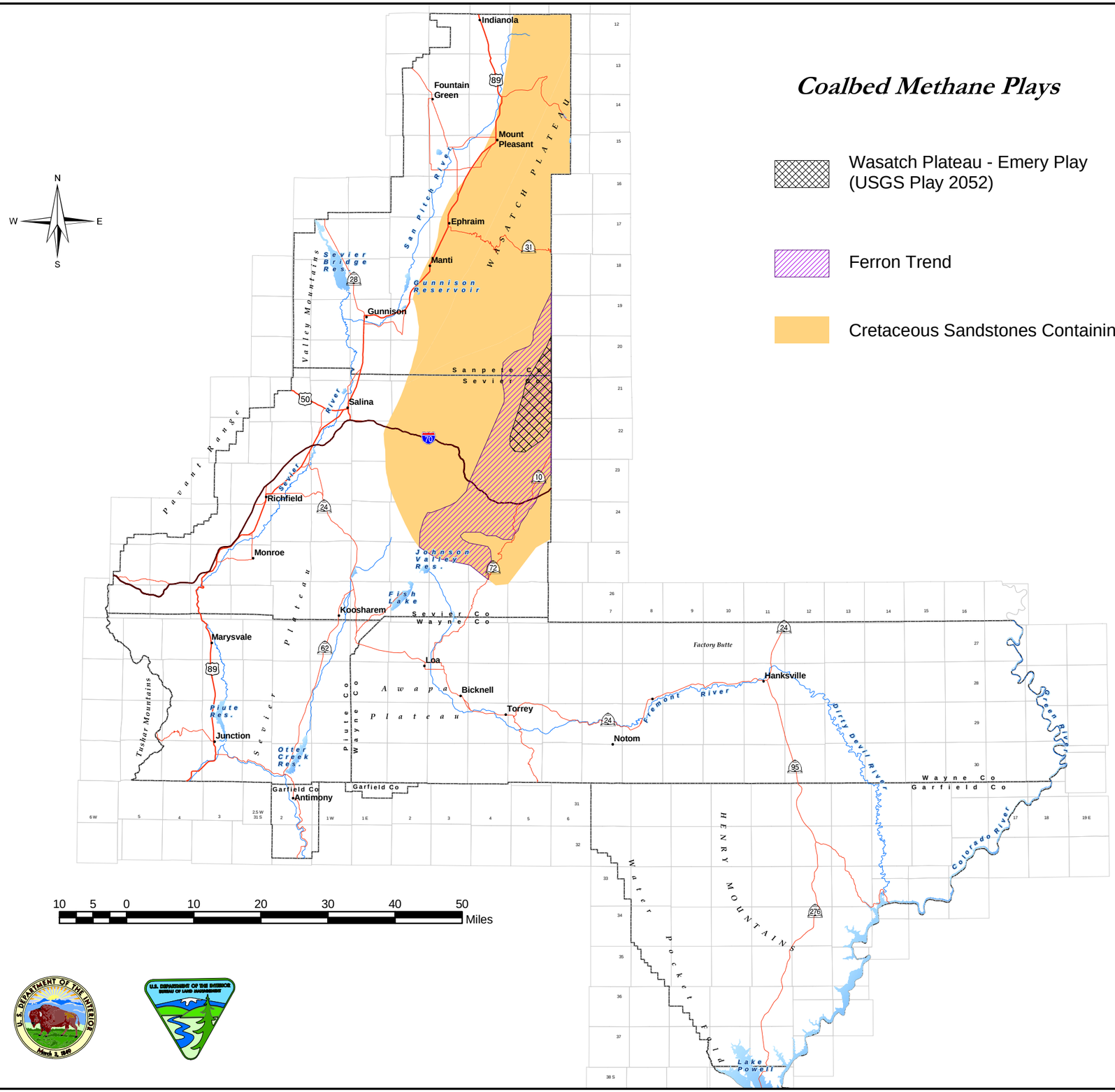


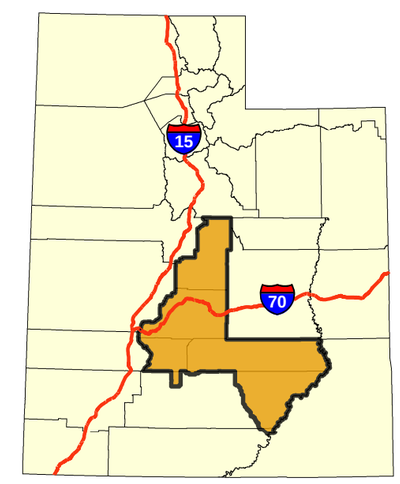


Map 7
Major Structural Features of the Planning Area



Map 8
Coal Fields of Utah





Map 9
CBM Plays in the Planning Area

Oil and Gas Provinces and Plays -1995

Paradox Basin Province

- Permo-Triassic Unconformity (2106)
- Fractured Interbed (2103)
- Salt Anticline Flank (2105) & Buried Fault Blocks (2101)
- Porous Carbonate Buildup (2102)
- Cretaceous Sandstone (2107)

Eastern Great Basin Province

- Late Paleozoic (1902)
- Sevier Frontal Zone (1907)

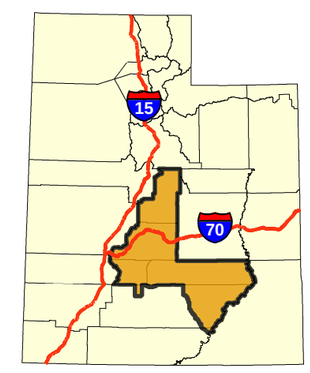
Northern Arizona Province

- Late Proterozoic and Cambrian (2403)

Leases and Wells

- Existing Oil and Gas Leases (Feb. 24, 2005)
- Pending Oil and Gas Leases (Feb. 24, 2005)
- Oil & Gas Wells (UDOGM) - P&A
- Oil & Gas Wells - Active

- Planning Area Boundary
- Interstate Highway
- U.S. Highways
- State Highways
- Streams
- County Boundary

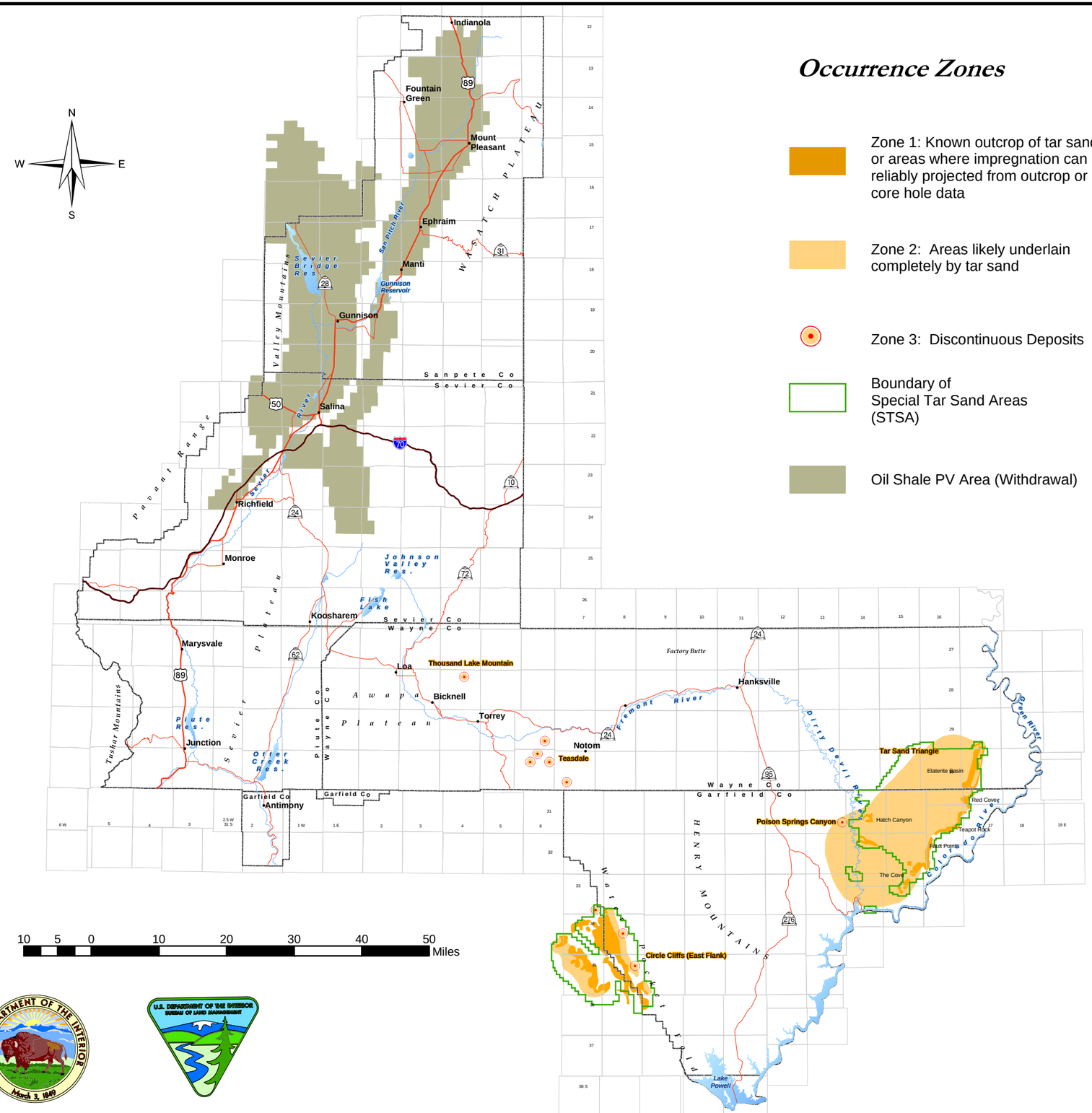


N
W E
S

Indianola
Fountain Green
Mount Pleasant
Ephraim
Manti
Gunnison
Salina
Wolverene Wells
Richfield
Monroe
Koosharem
Marysvale
Loa
Bicknell
Torrey
Junction
Antimony
Notom
Hanksville
Factory Butte
Sanpete Co
Sevier Co
Wayne Co
Garfield Co
Piute Co
Tushar Mountains
Paunsaugunt Plateau
Awapa Plateau
Henry Mountains
Waterpocket Fold
Lake Powell
Colorado River
Dirty Devil River
Fremont River
Sevier River
Otter Creek Res.
Piute Res.
Johnson Valley Res.
Fish Lake
Gunnison Reservoir
Sevier Plateau
Pavant Range
Wasatch Plateau

10 5 0 10 20 30 40 50 Miles

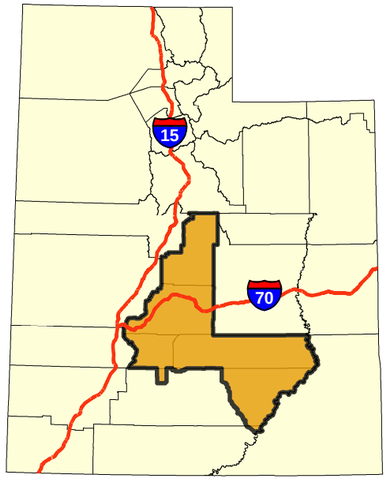
Map 10
Oil and Gas Plays, Leases, and Wells in the Planning Area



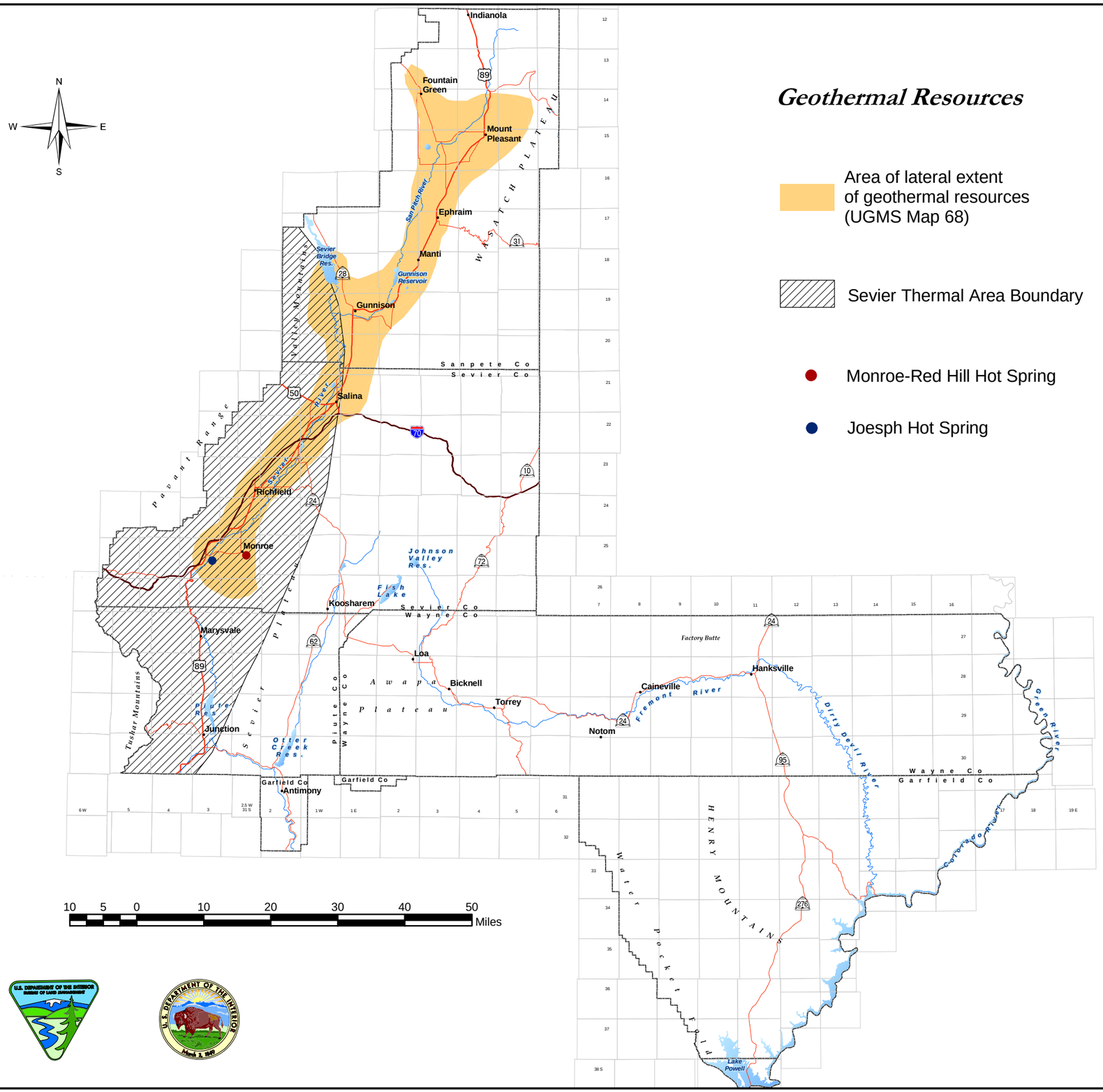
Occurrence Zones

- Zone 1: Known outcrop of tar sand, or areas where impregnation can be reliably projected from outcrop or core hole data
- Zone 2: Areas likely underlain completely by tar sand
- Zone 3: Discontinuous Deposits
- Boundary of Special Tar Sand Areas (STSA)
- Oil Shale PV Area (Withdrawal)

- Planning Area Boundary
- Interstate Highway
- U.S. Highways
- State Highways
- Streams



Map 11
Other Hydrocarbon Resource Accumulations and Occurrences in the Planning Area



Geothermal Resources

Area of lateral extent of geothermal resources (UGMS Map 68)

Sevier Thermal Area Boundary

Monroe-Red Hill Hot Spring

Joesph Hot Spring

Planning Area Boundary

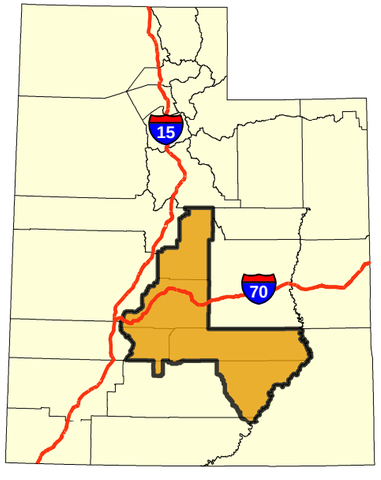
Interstate Highway

U.S. Highways

State Highways

Streams

County Boundary



Map 12
Geothermal Resources in the Planning Area

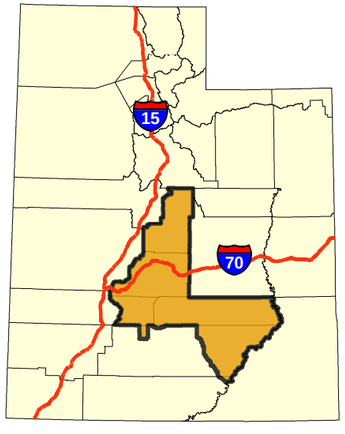
Gypsum and Salt Occurrences

Formations that may Contain Gypsum or Salt

Limit of Salt Deposition in Paradox Basin (Doelling, 1983)

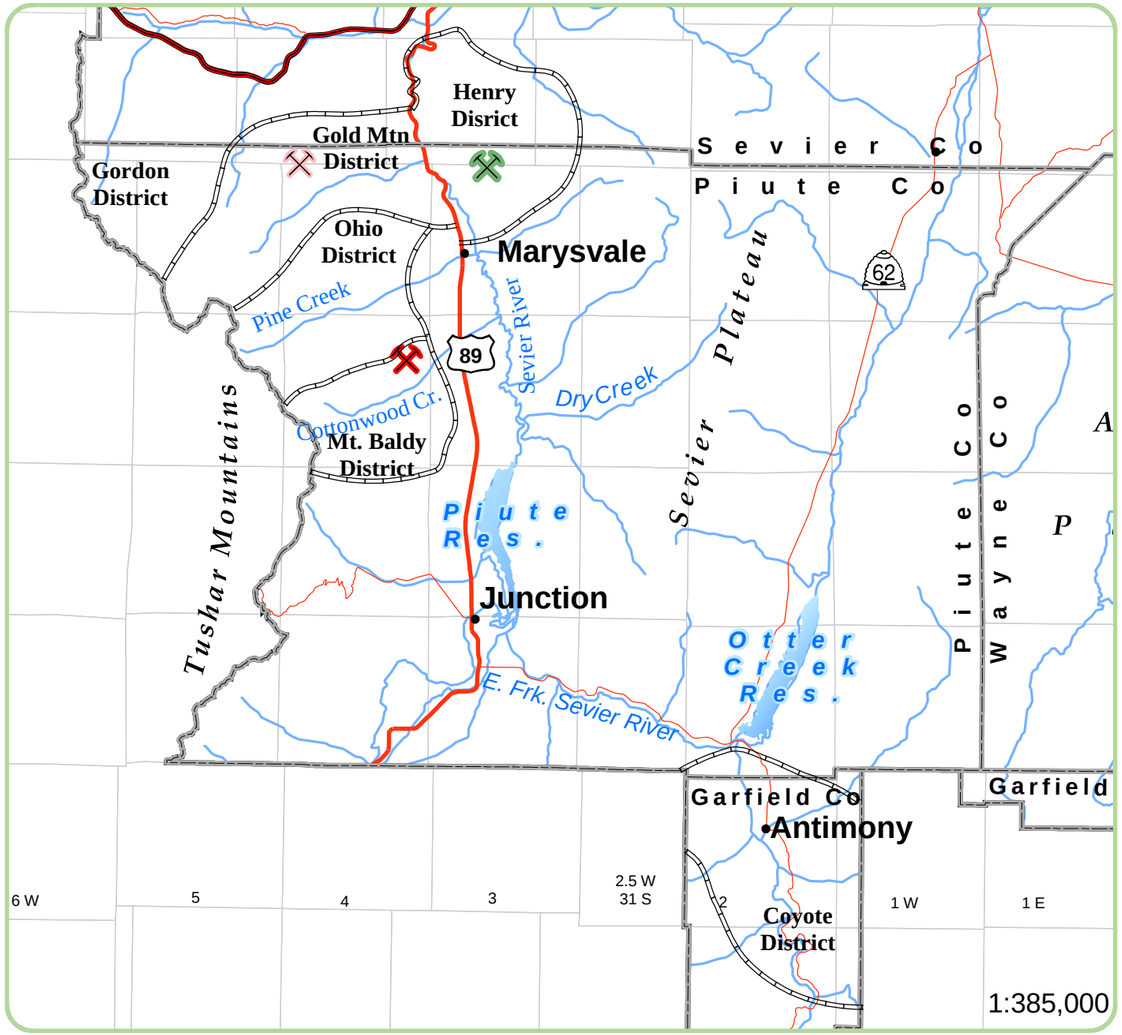
RCS Salt Mine

Planning Area Boundary
Interstate Highway
U.S. Highways
State Highways
Streams
County Boundary

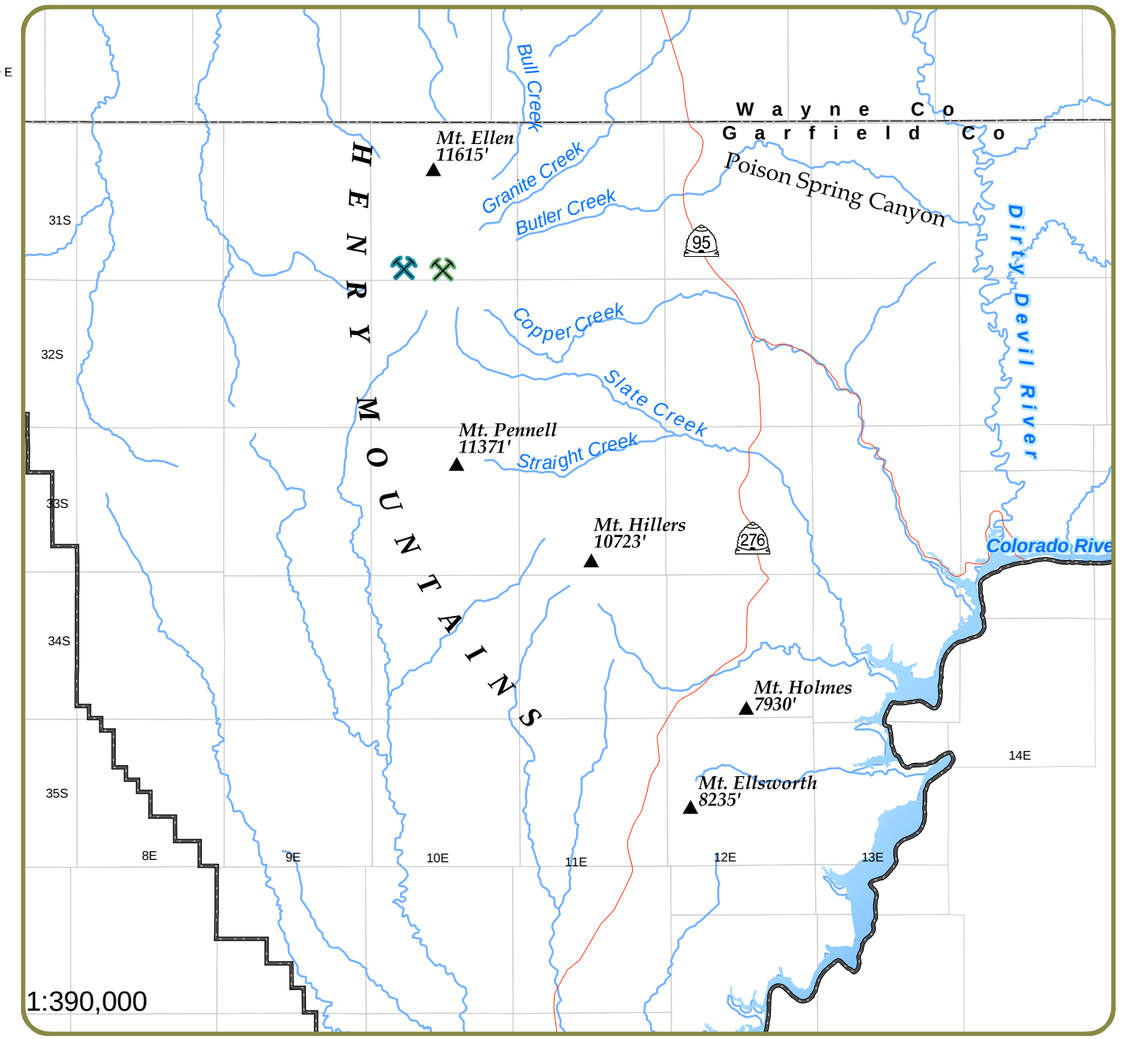


9 4.5 0 9 18 27 36 45 Miles

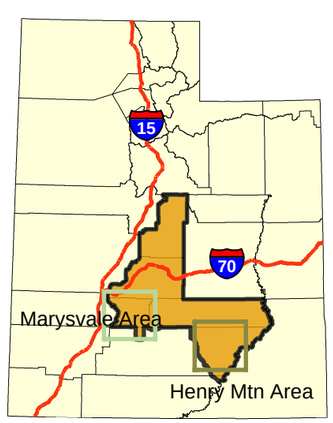
Map 13
Gypsum and Salt Occurrences in the Planning Area



Marysvale Area Map



Henry Mountains Area Map



Cultural and Other Features (Both Maps)

- Interstate Highway
- U.S. Highways
- State Highways
- Streams
- County/Field Office Boundary

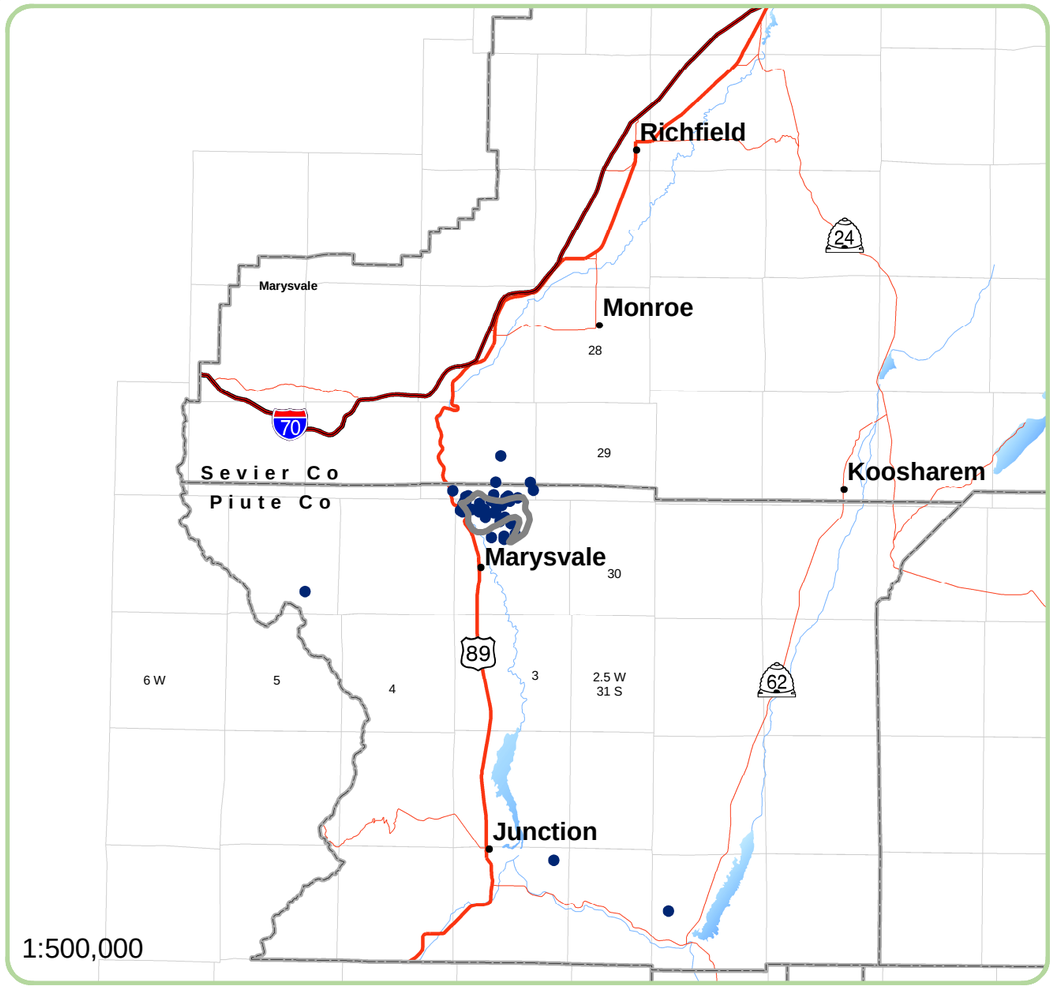
Henry Mountains Map

- Bromide Basin Mine
- Barton's Peck/Butler Wash Mine

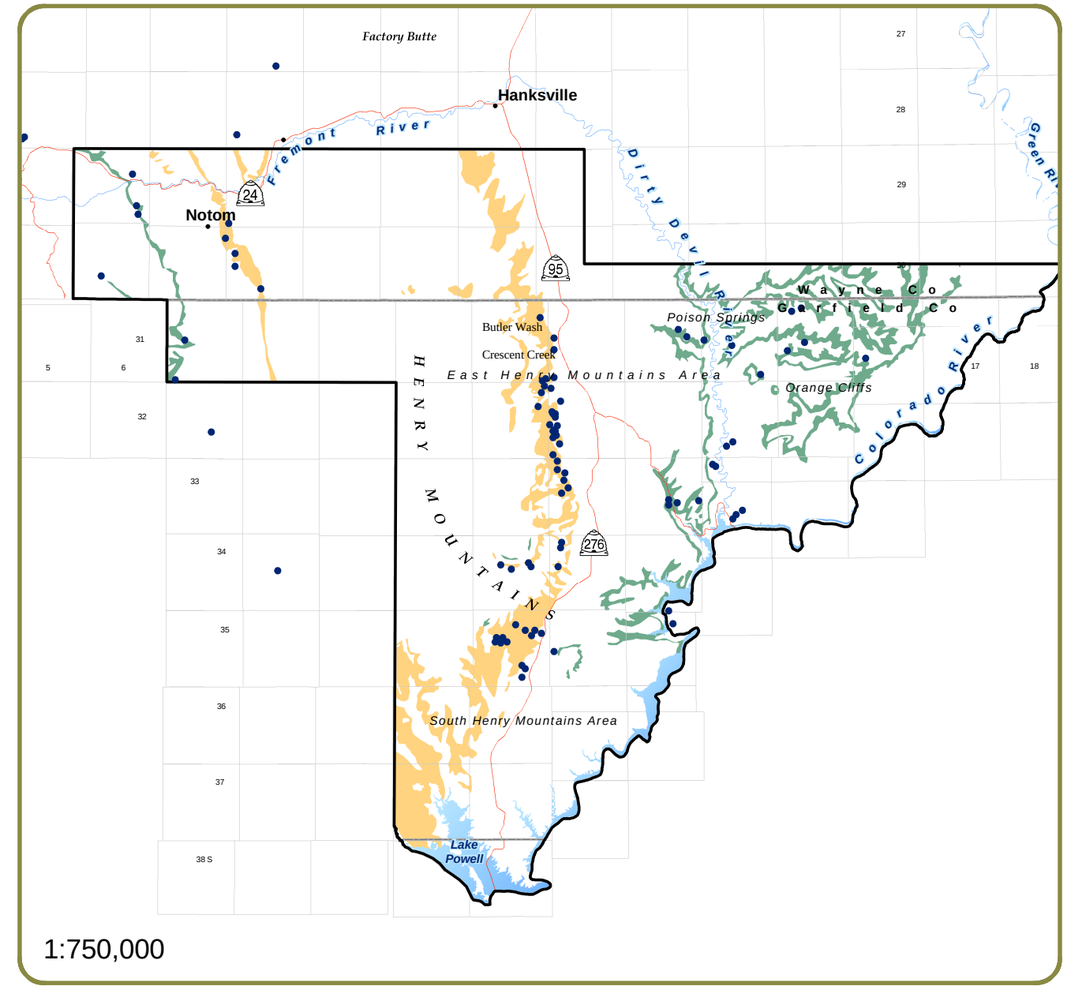
Marysvale Map

- Annie Laurie Mine
- Deer Trail Mine
- VCA Mine
- Mining District Boundary

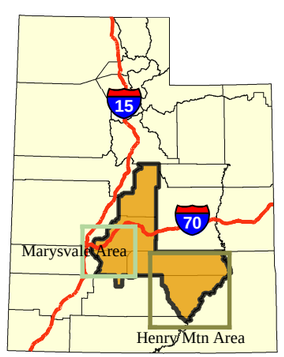
Map 14
Historic Mining Districts and Mines in the Henry Mountains and Marysvale Areas



Marysvale Area Map



Henry Mountains Area Map



Cultural and Other Features (Both Maps)

- Planning Area Boundary
- Interstate Highway
- U.S. Highways
- State Highways
- Streams
- County Boundary

Henry Mountains Map

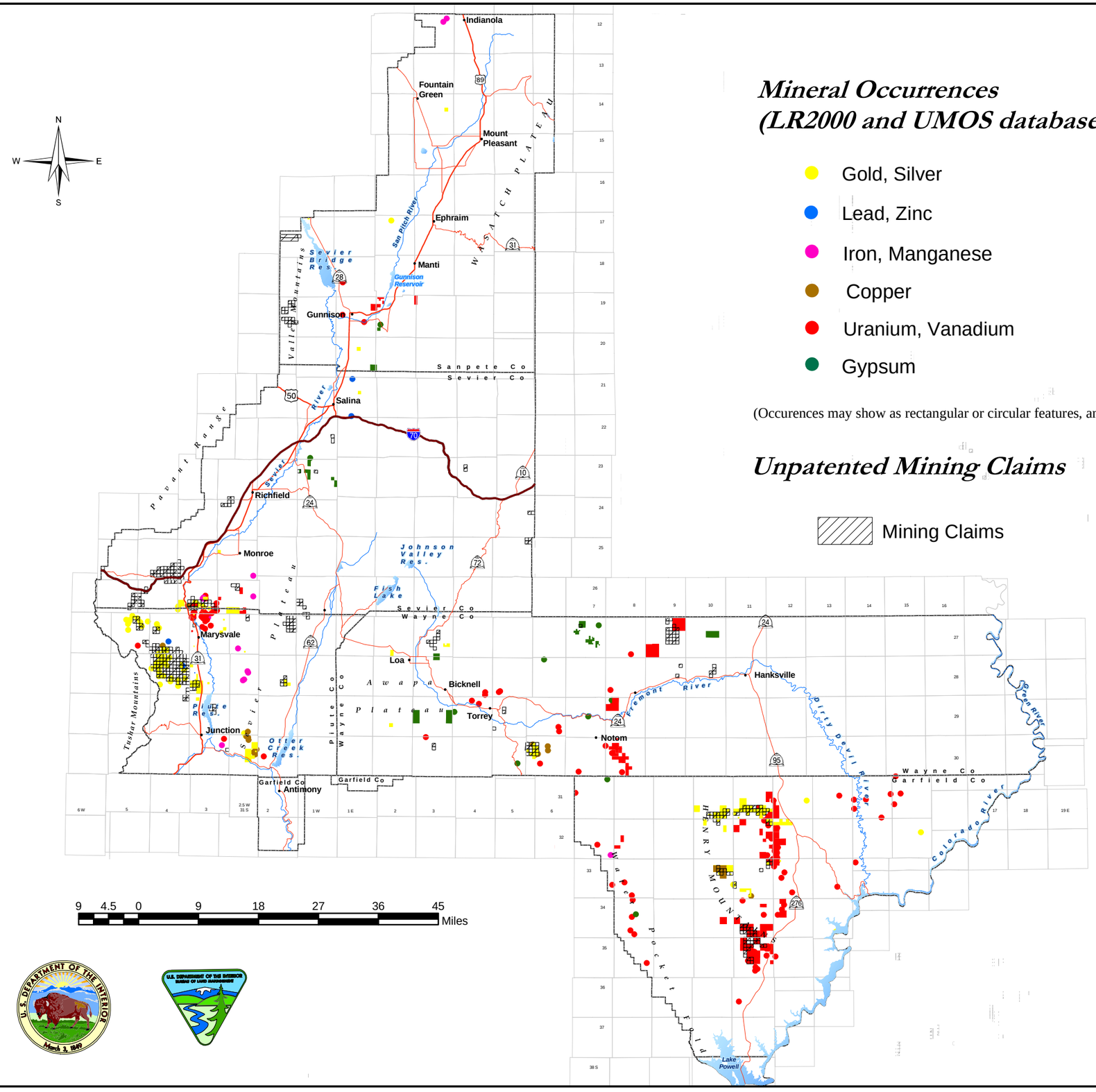
Formations Favorable to Uranium

- Morrison Formation (J2)
- Chinle Formation (Tr2)
- Uranium Occurrences

Marysvale Map

- Central Intrusion
- Uranium Occurrences

Map 15
Uranium Mines and Prospects in the Henry Mountains and Marysvale Areas



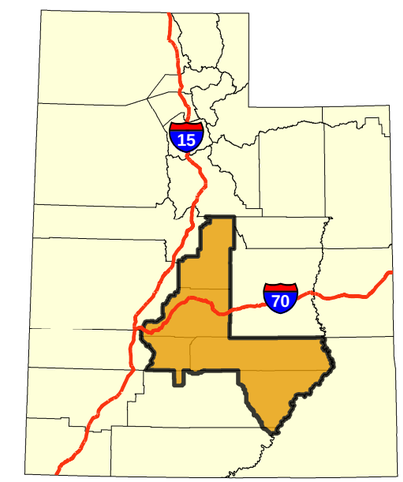
Mineral Occurrences (LR2000 and UMOS databases)

- Gold, Silver
- Lead, Zinc
- Iron, Manganese
- Copper
- Uranium, Vanadium
- Gypsum

- Interstate Highway
- U.S. Highways
- State Highways
- Colorado River
- County Boundary

(Occurences may show as rectangular or circular features, and are not to scale)

Unpatented Mining Claims



Map 16
Mineral Occurrences and Mining Claims in the Planning Area

Formations with Unconsolidated Sand and Gravel

- Alluvium & Colluvium (Qa)
- Older Alluvium & Colluvium (Qao)
- Glacial (Qg)
- Landslides (Qls)
- Eolian (Qe)

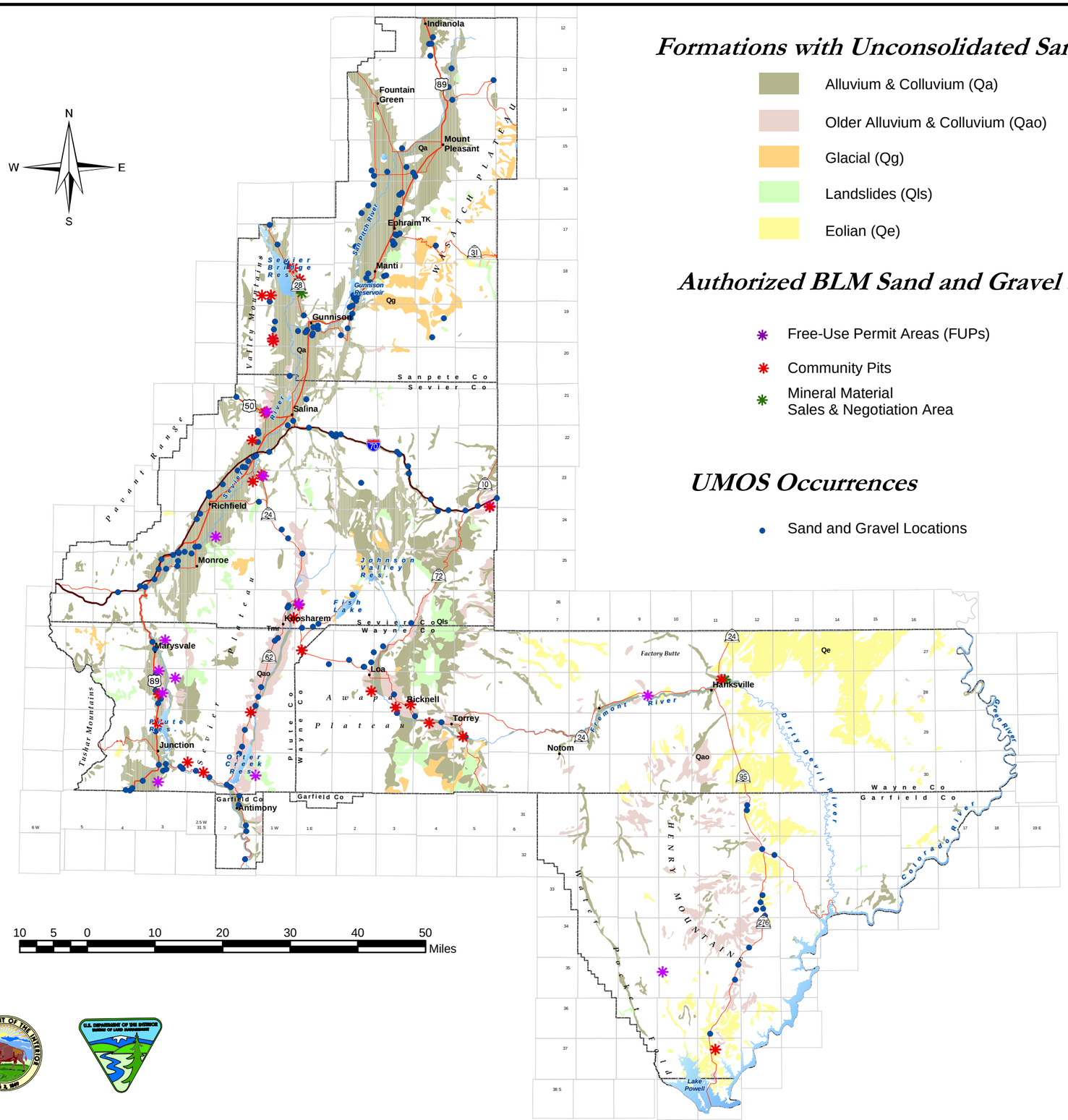
Authorized BLM Sand and Gravel Sites

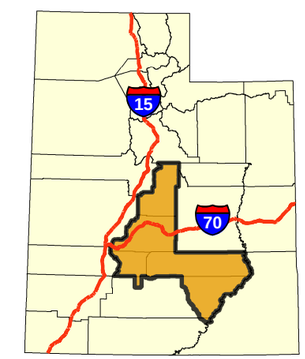
- Free-Use Permit Areas (FUPs)
- Community Pits
- Mineral Material Sales & Negotiation Area

UMOS Occurrences

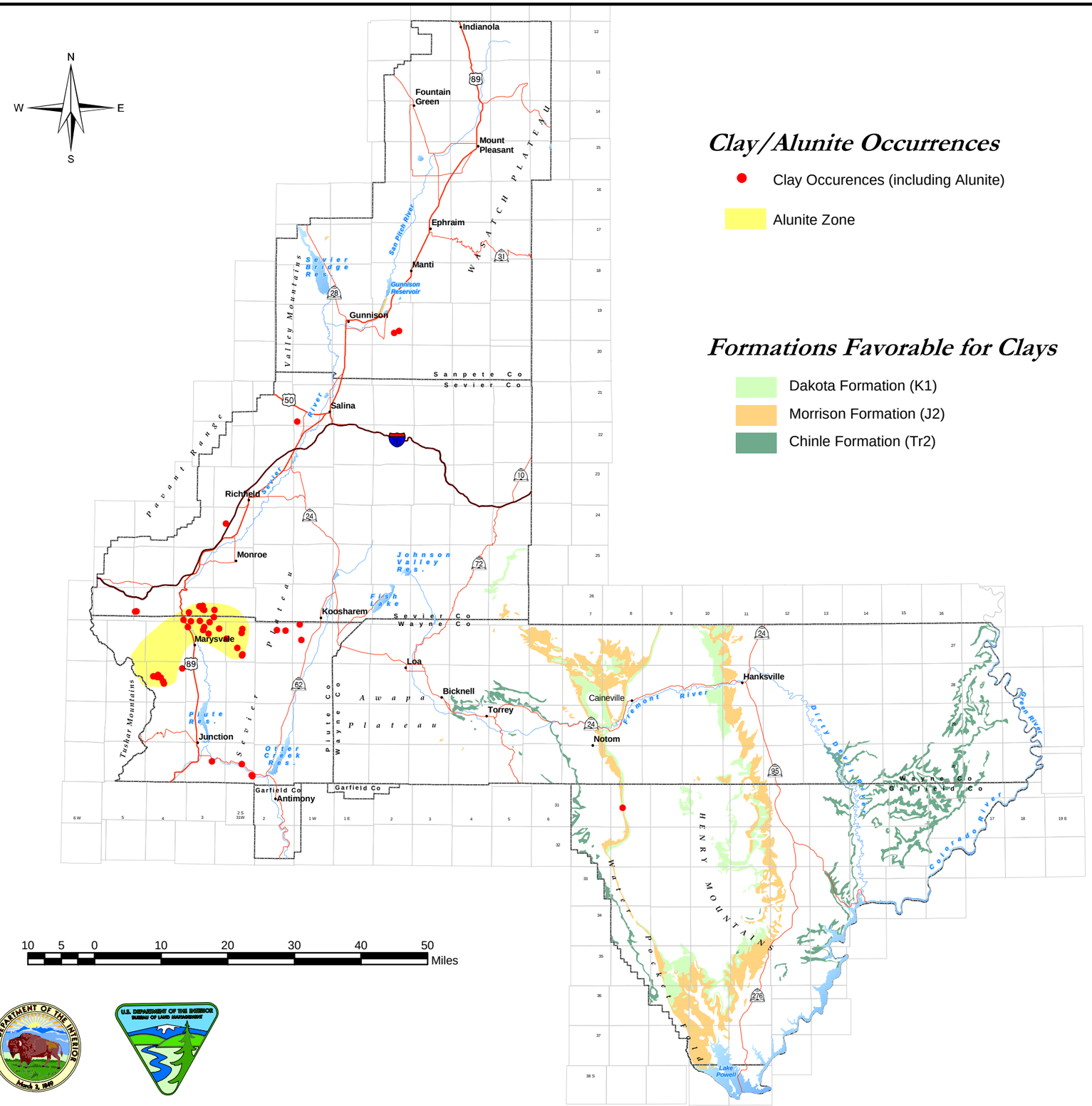
- Sand and Gravel Locations

- Planning Area Boundary
- Interstate Highway
- U.S. Highways
- State Highways
- Streams
- County Boundary





Map 17
Uconsolidated Quaternary Sand and Gravel Operations in the Planning Area



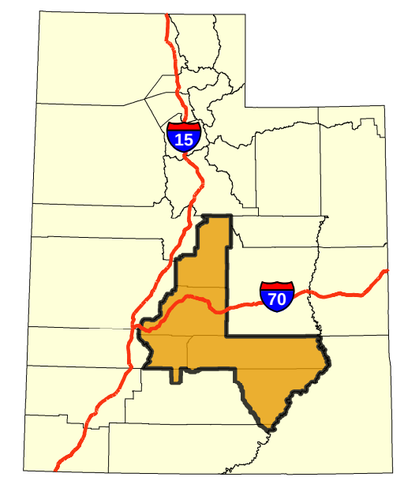
Clay/Alunite Occurrences

- Clay Occurences (including Alunite)
- Alunite Zone

Formations Favorable for Clays

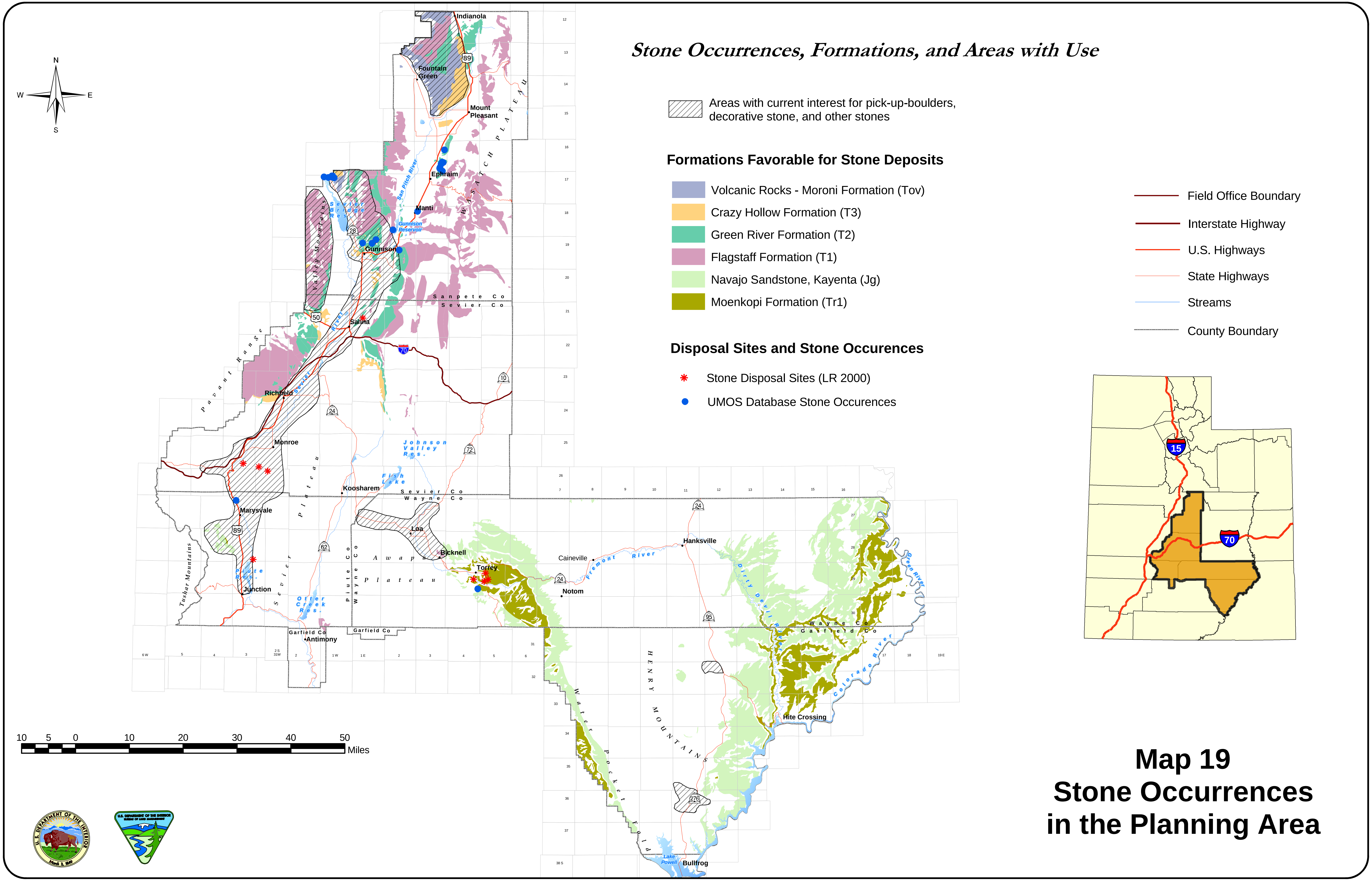
- Dakota Formation (K1)
- Morrison Formation (J2)
- Chinle Formation (Tr2)

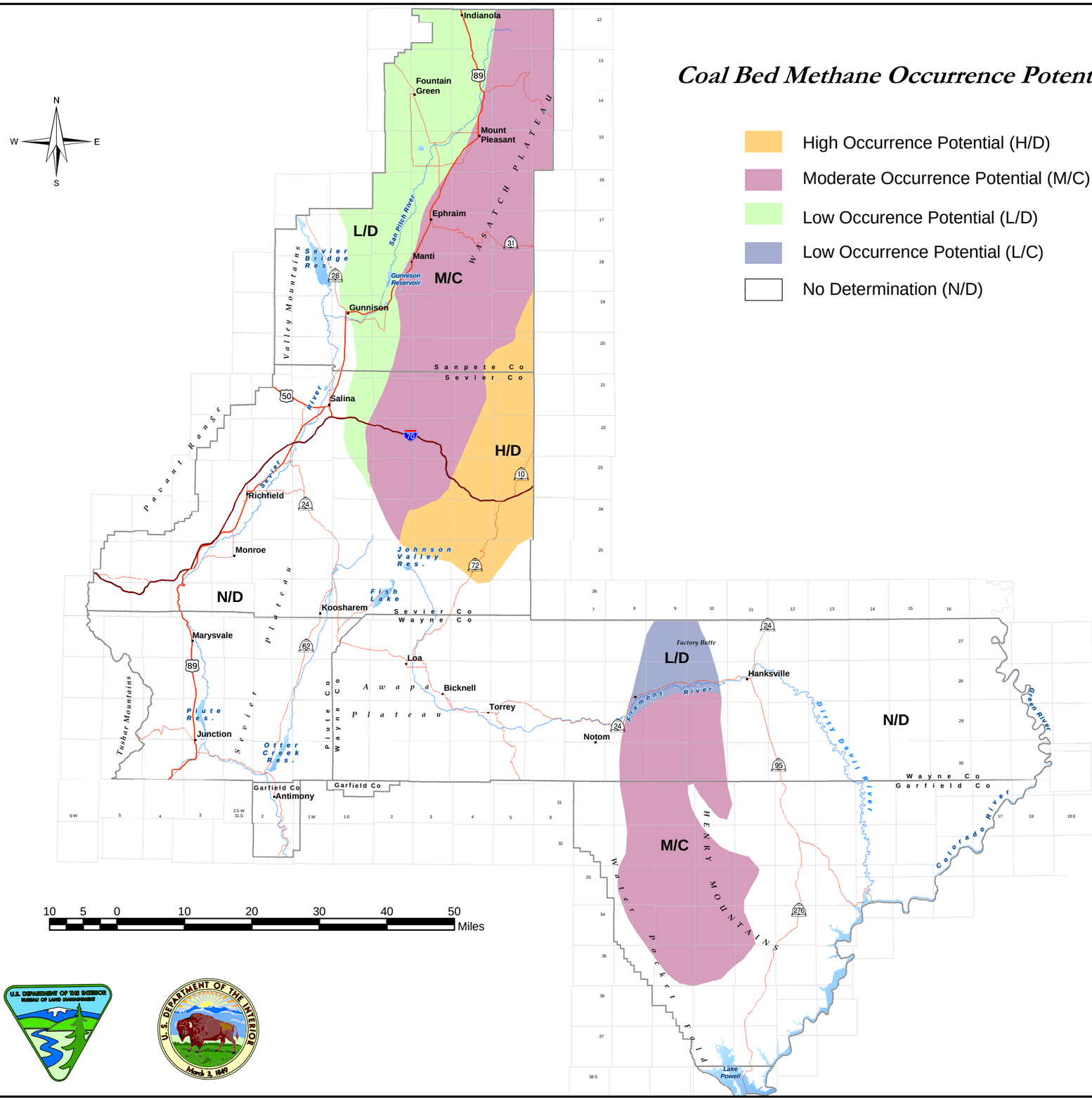
- Field Office Boundary
- Interstate Highway
- U.S. Highways
- State Highways
- Streams
- County Boundary

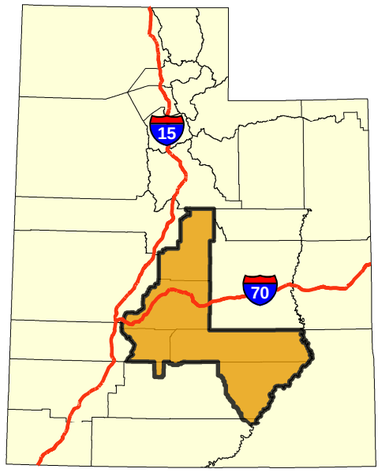


Map 18
Clay (including Alunite) Occurrences and Mines in the Planning Area

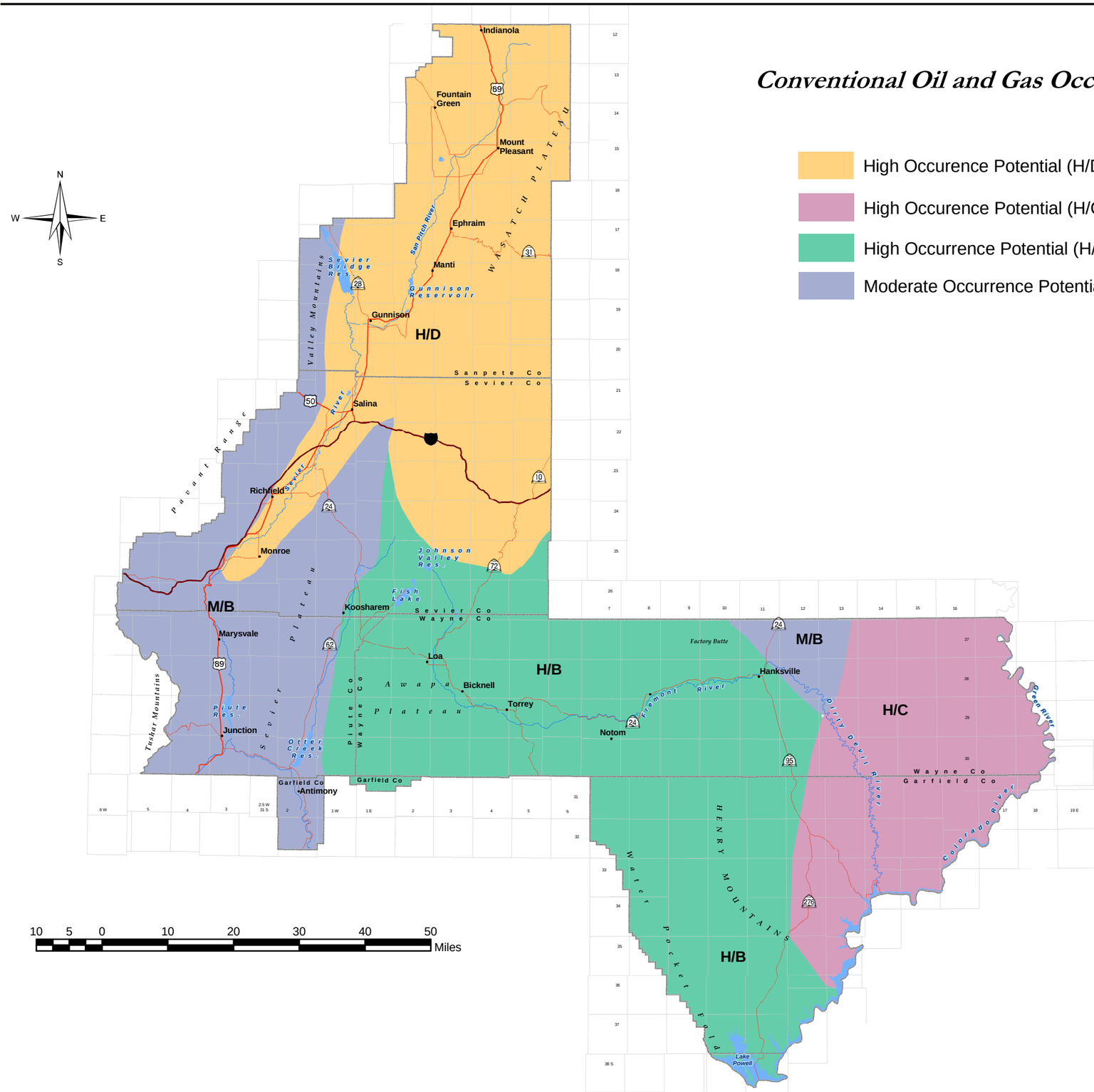
Map 19
Stone Occurrences in the Planning Area







Map 20
Coal Bed Methane Occurrence Potential in the Planning Area

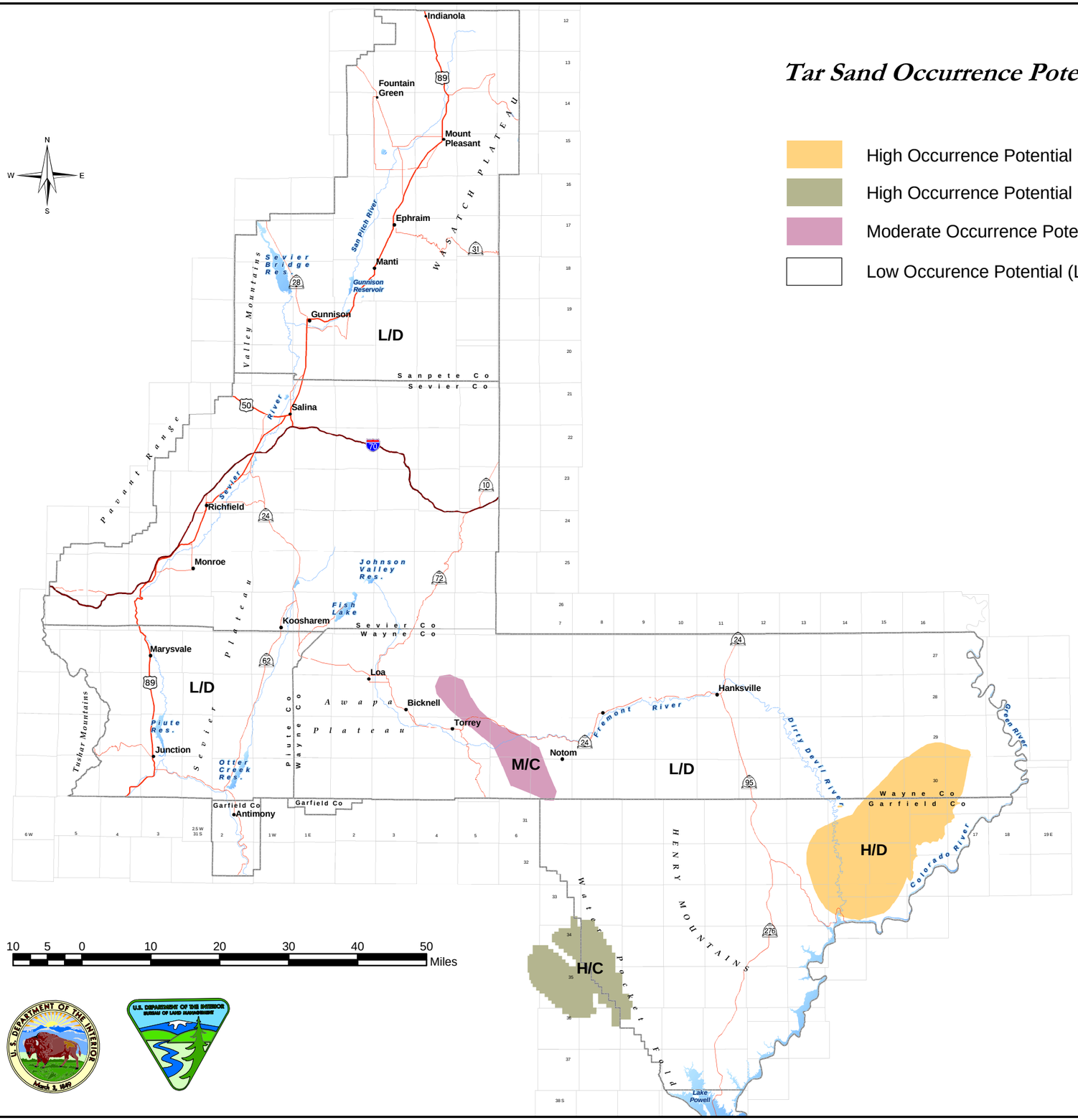


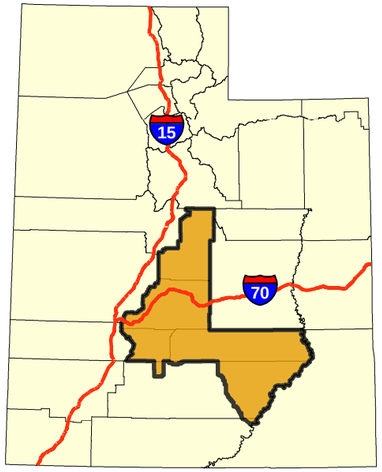
Map 21
Conventional Oil & Gas Occurrence Potential in the Planning Area

Tar Sand Occurrence Potential

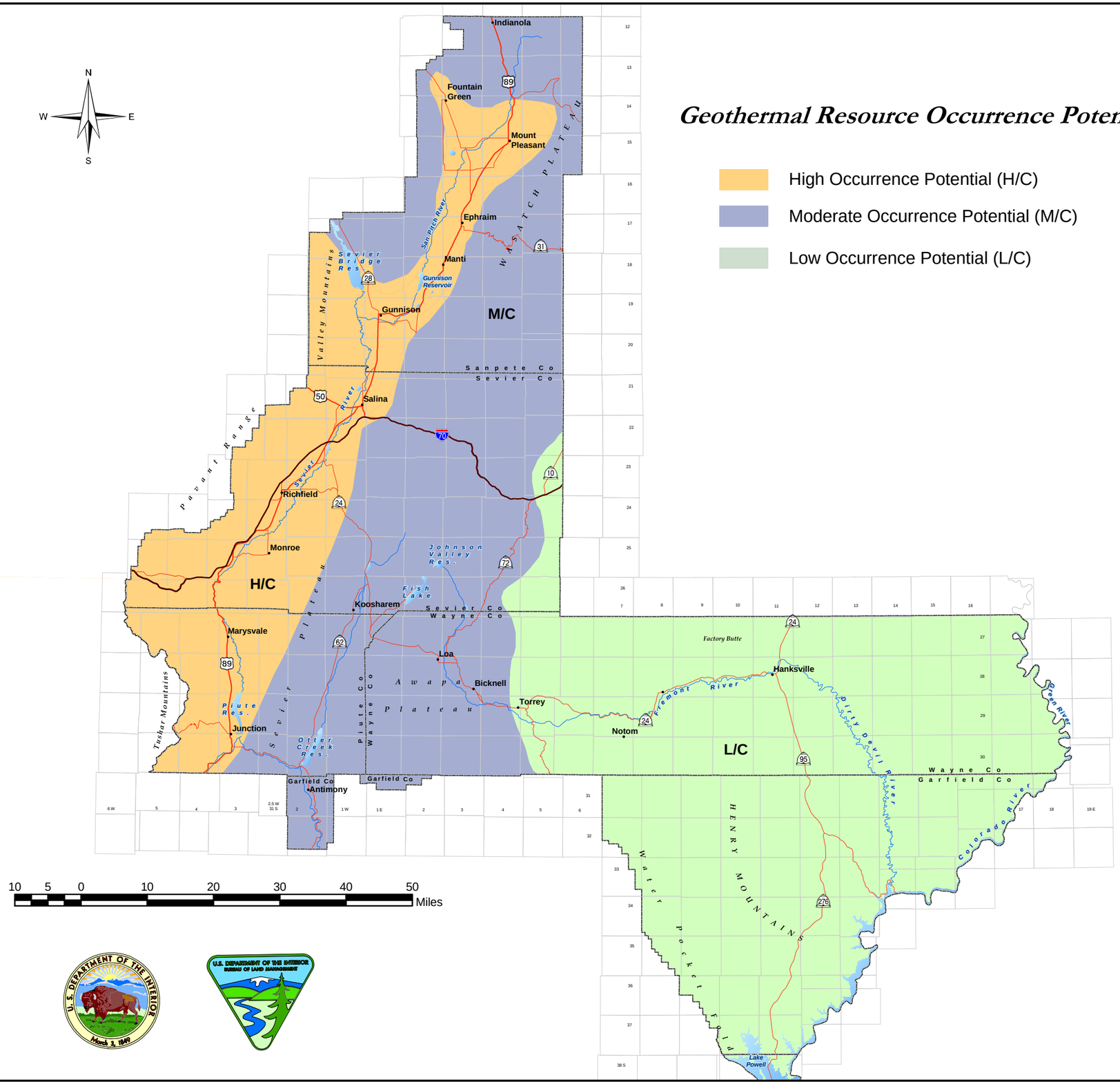
- High Occurrence Potential (H/D)
- High Occurrence Potential (H/C)
- Moderate Occurrence Potential (M/C)
- Low Occurence Potential (L/D)

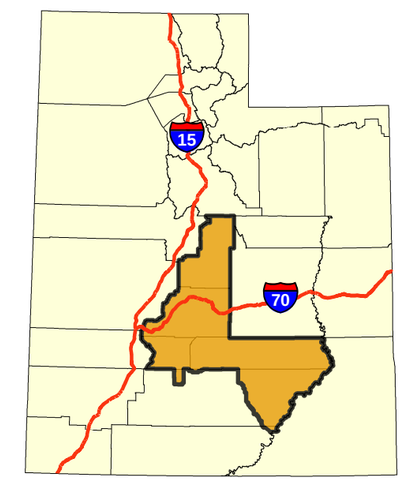
- Planning Area Boundary
- Interstate Highway
- U.S. Highways
- State Highways
- Streams
- County Boundary



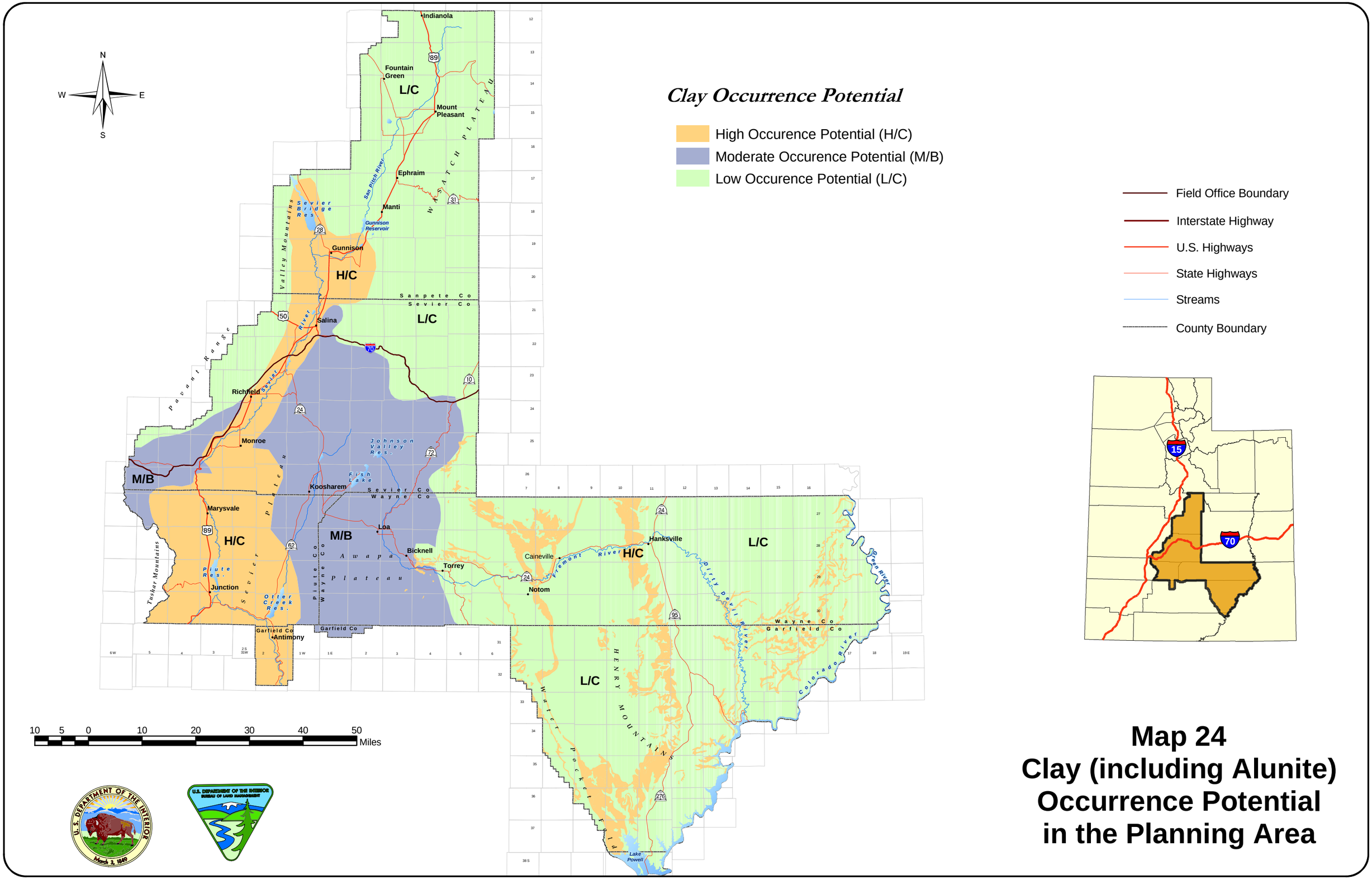


Map 22
Tar Sand Occurrence Potential in the Planning Area

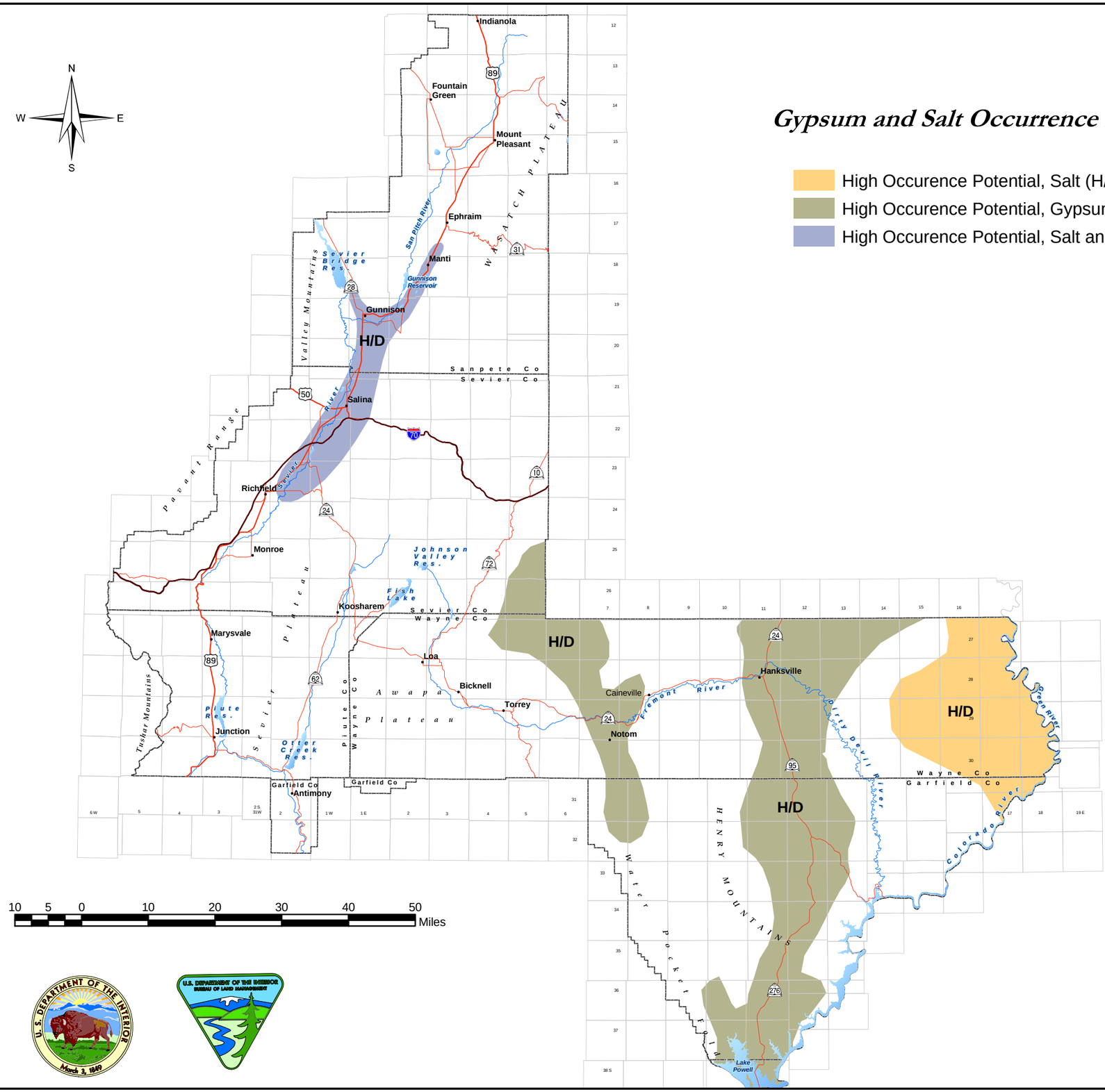




Map 23
Geothermal Resource Occurrence Potential in the Planning Area



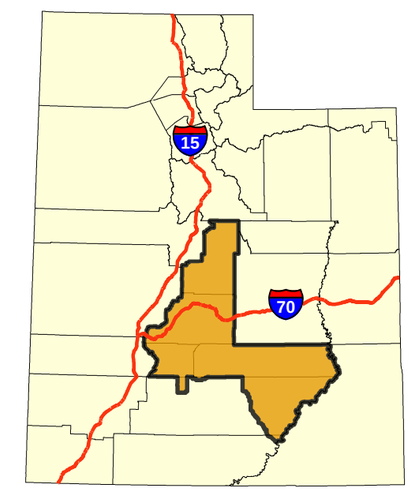
Map 24
Clay (including Alunite) Occurrence Potential in the Planning Area



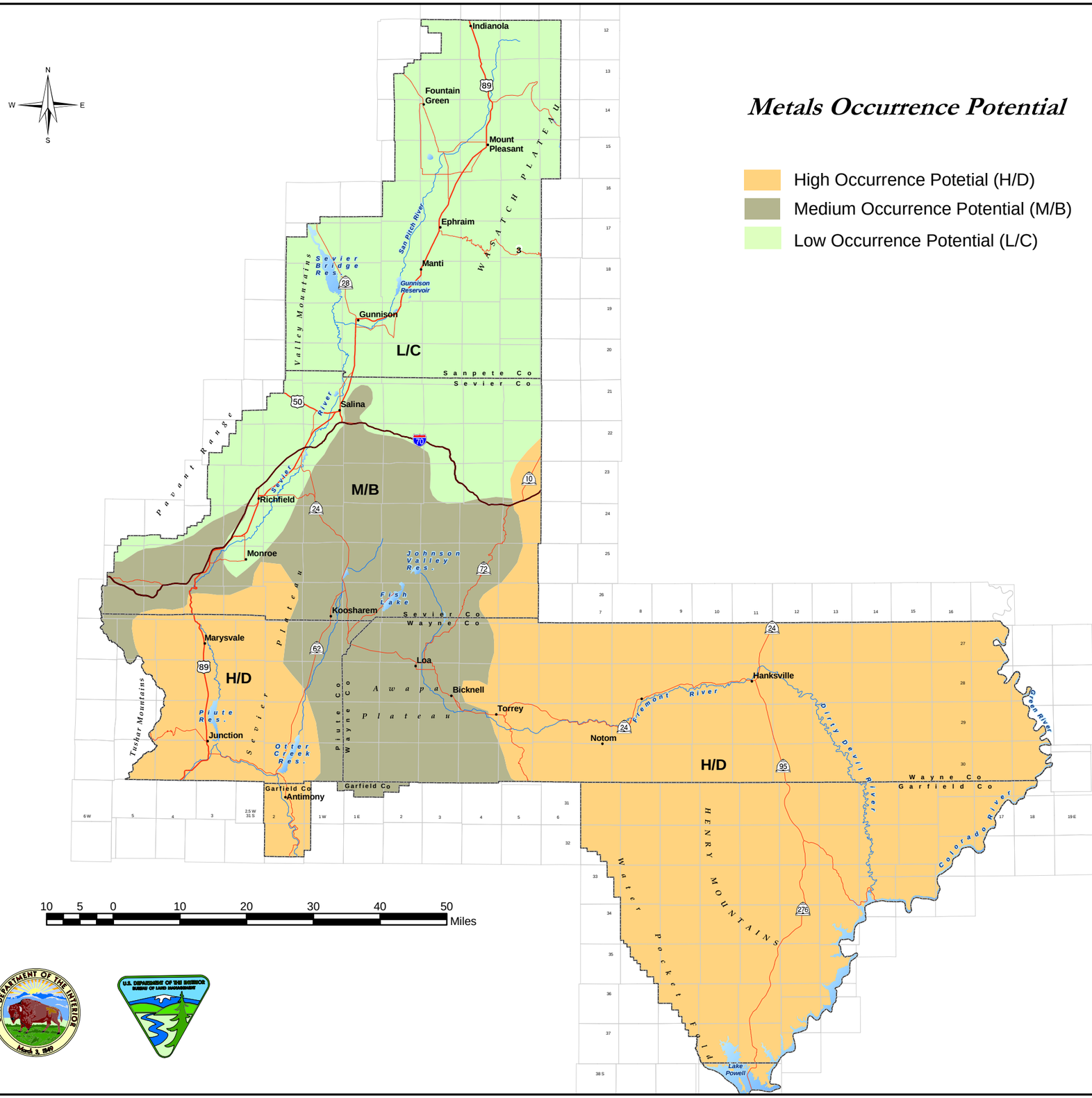
Gypsum and Salt Occurrence Potential

- High Occurence Potential, Salt (H/D)
- High Occurence Potential, Gypsum (H/D)
- High Occurence Potential, Salt and Gypsum (H/D)

- Field Office Boundary
- Interstate Highway
- U.S. Highways
- State Highways
- Streams
- County Boundary



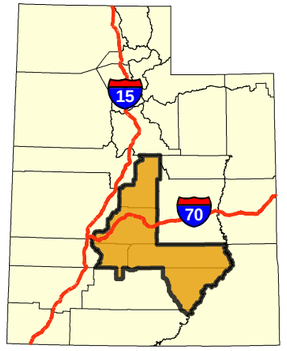
Map 25
Gypsum & Salt Occurrence Potential in the Planning Area



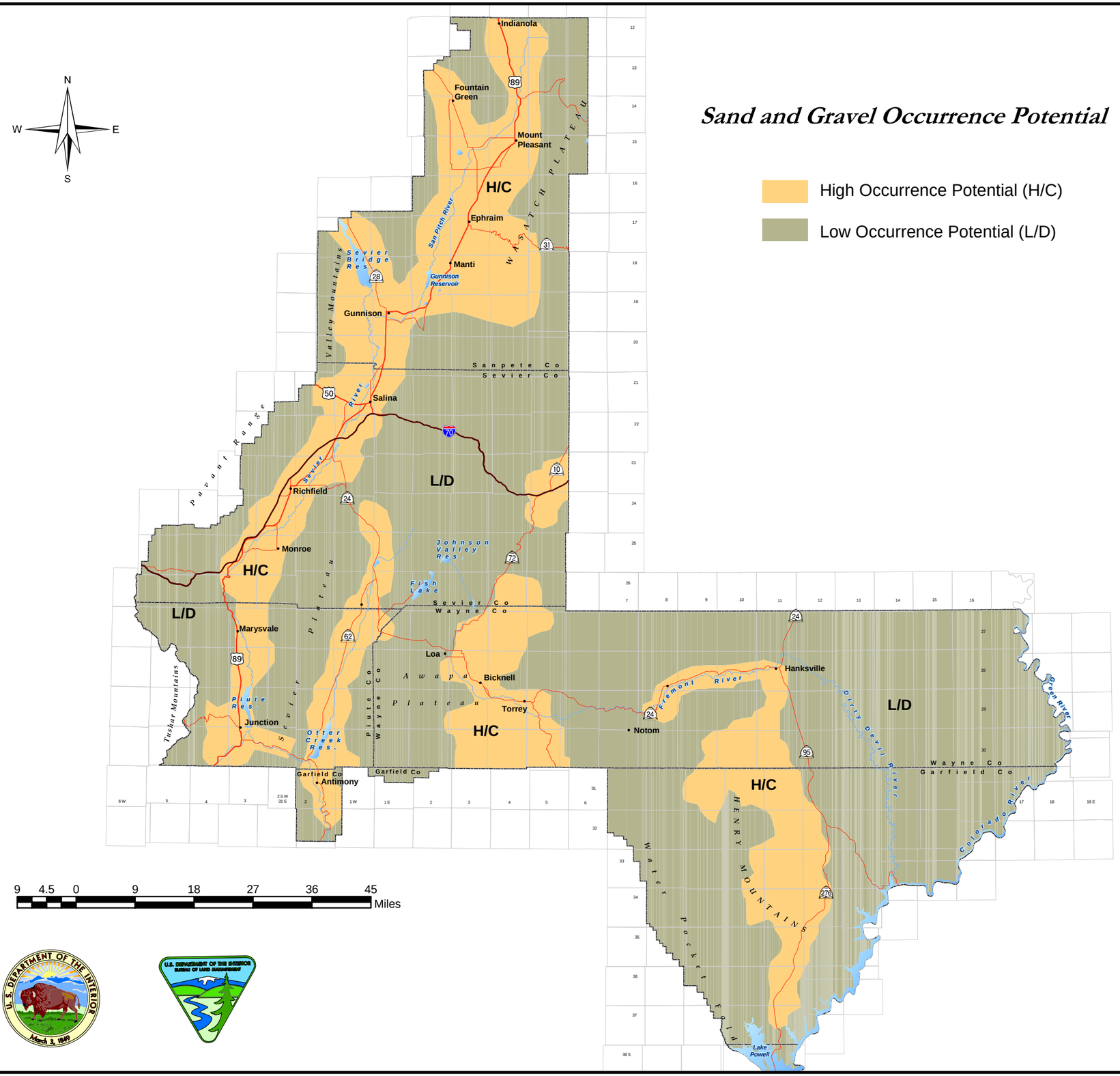
Metals Occurrence Potential

- High Occurrence Potetial (H/D)
- Medium Occurrence Potential (M/B)
- Low Occurrence Potential (L/C)

- Planning Area Boundary
- Interstate Highway
- U.S. Highways
- State Highways
- Streams
- County Boundary



Map 26
Metals Occurrence Potential in the Planning Area



Sand and Gravel Occurrence Potential

High Occurrence Potential (H/C)

Low Occurrence Potential (L/D)

Planning Area Boundary

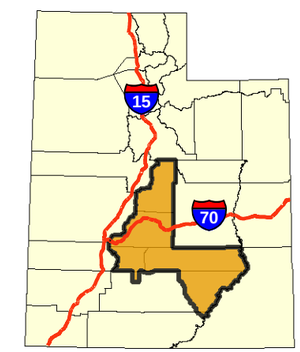
Interstate Highway

U.S. Highways

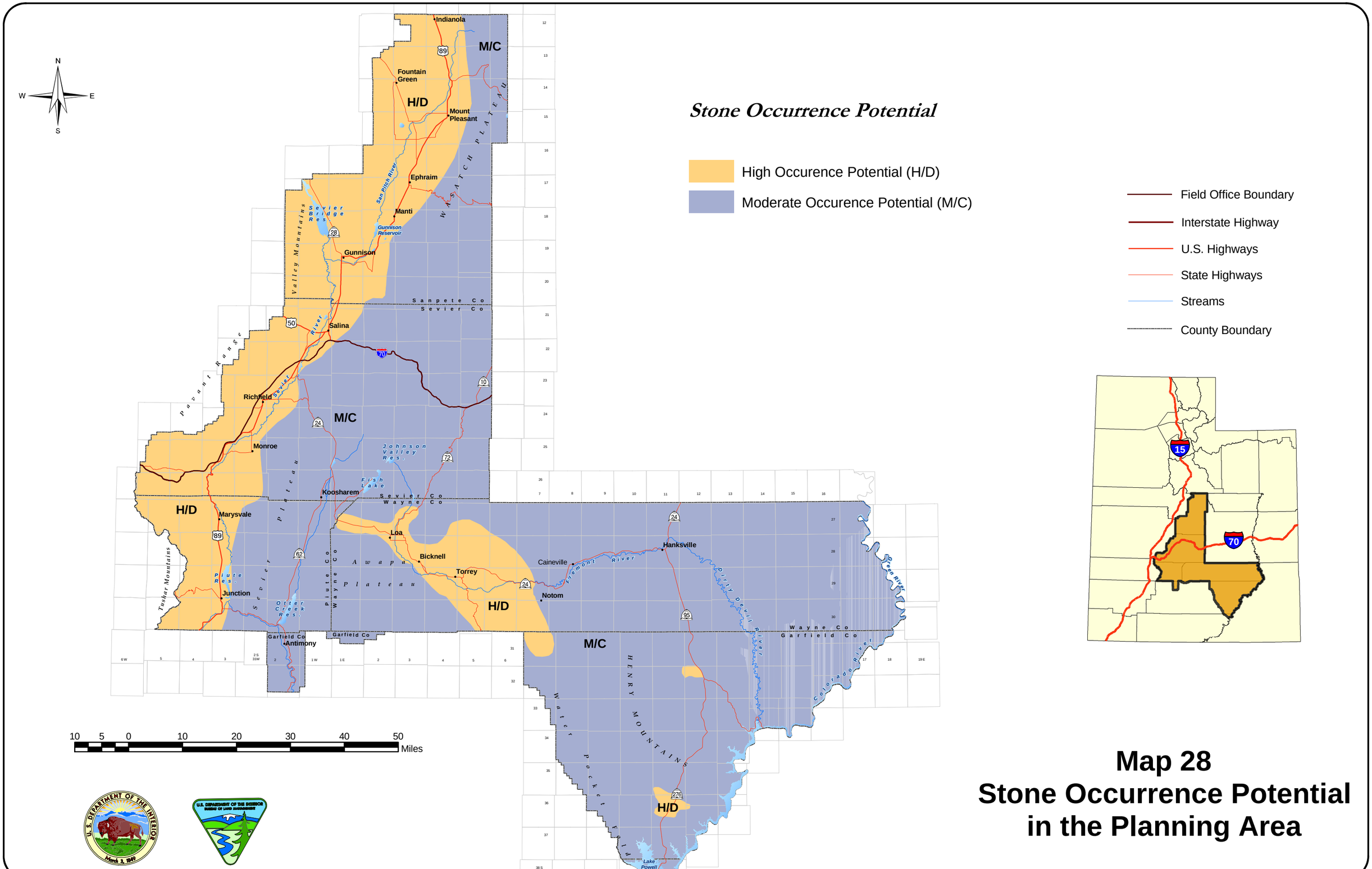
State Highways

Streams

County Boundary



Map 27
Sand and Gravel Occurrence Potential in the Planning Area

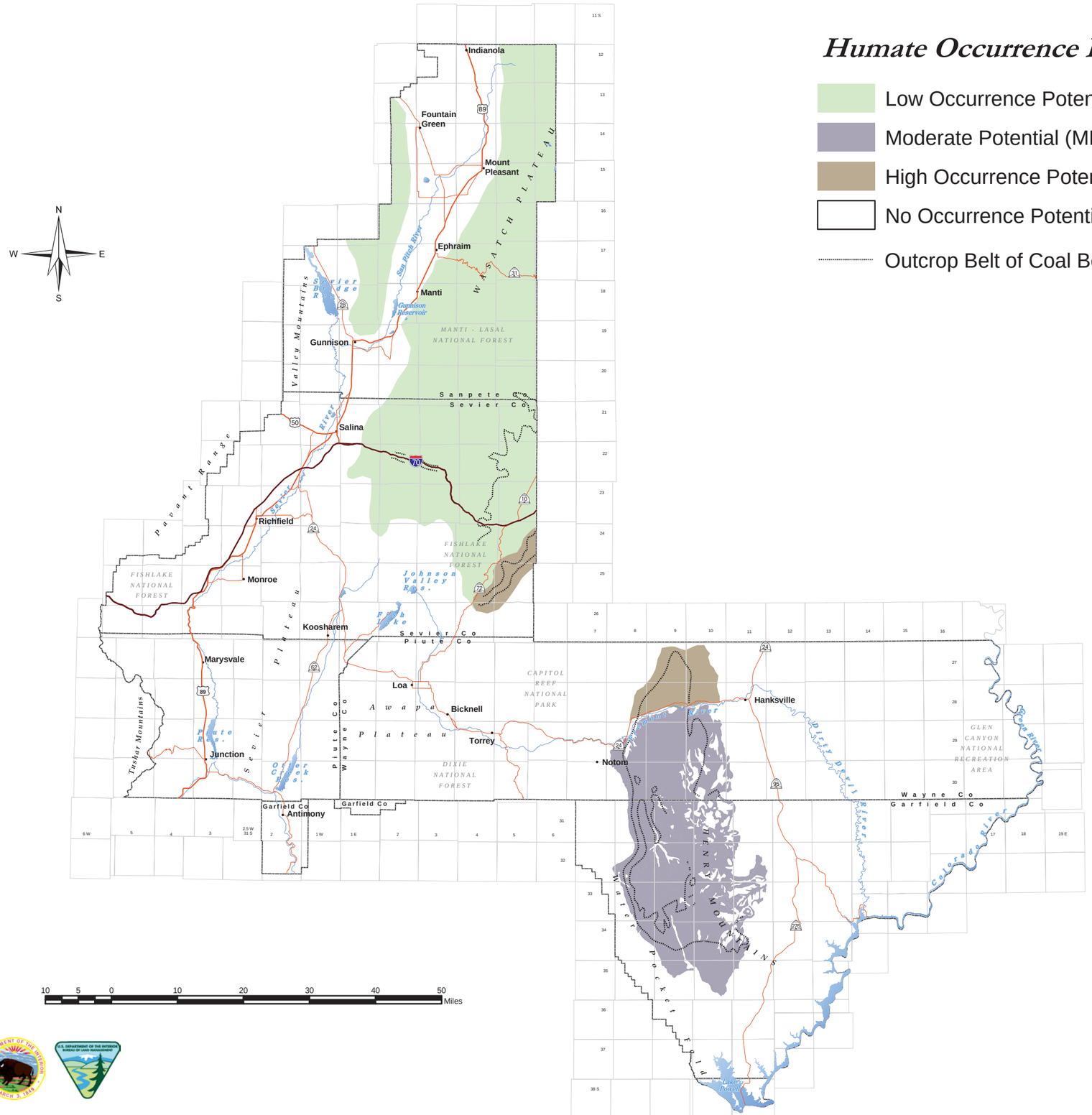


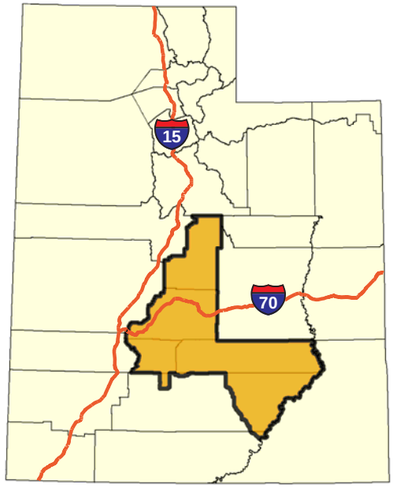
Map 28
Stone Occurrence Potential in the Planning Area

Humate Occurrence Potential

- Low Occurrence Potential (L/C)
- Moderate Potential (MB and MC)
- High Occurrence Potential (H/C)
- No Occurrence Potential (O/C)
- Outcrop Belt of Coal Bearing Strata

- Field Office Boundary
- Interstate Highway
- U.S. Highways
- State Highways
- Streams
- County Boundary





Source: UGMS, 1983

Map 29
Humate Occurrence Potential in the Planning Area