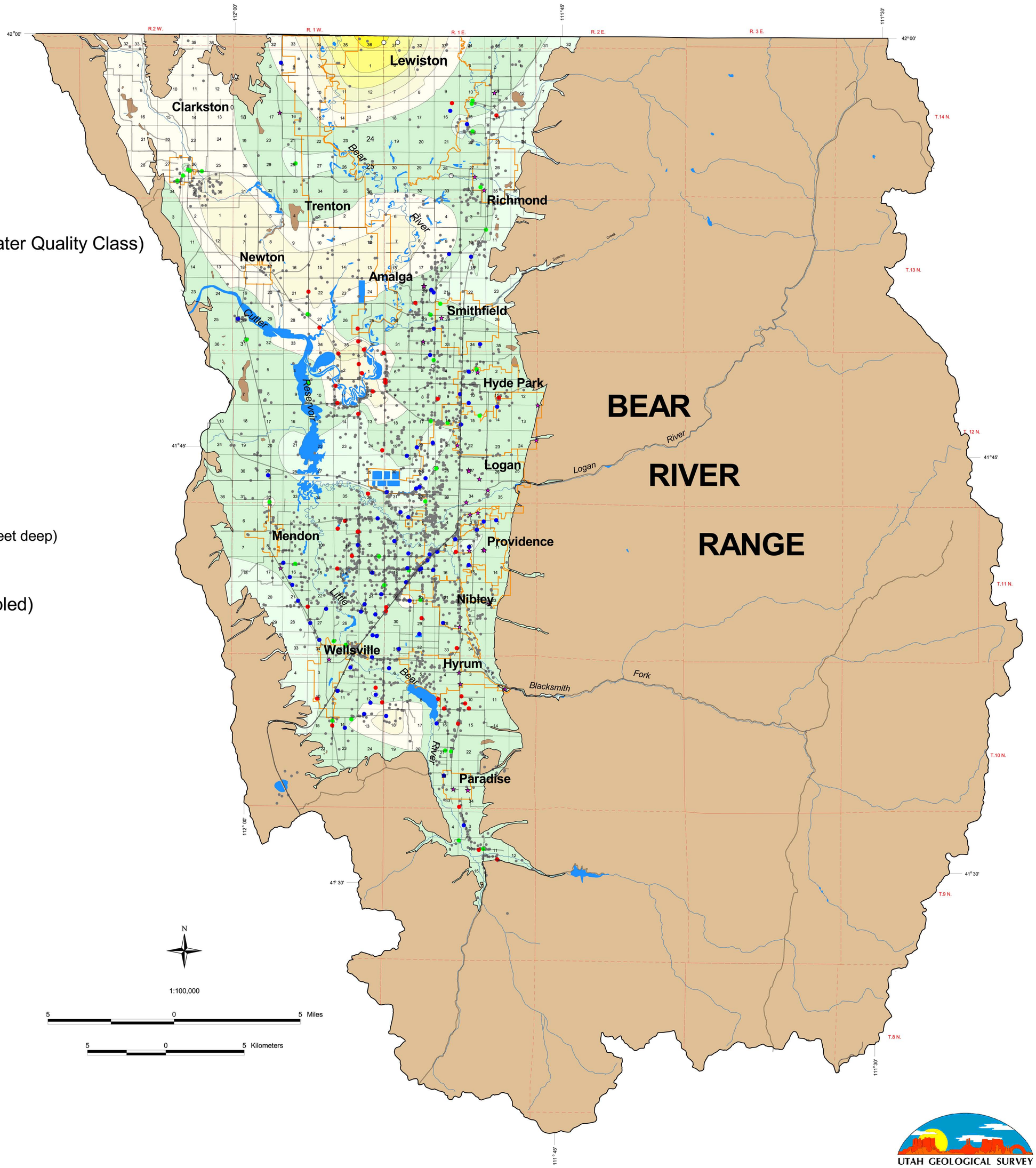
Plate 1

TOTAL-DISSOLVED-SOLIDS (TDS) CONCENTRATION MAP FOR THE PRINCIPAL BASIN-FILL AQUIFER, CACHE VALLEY, CACHE COUNTY, UTAH

By Janae Wallace and Mike Lowe

Digital compilation by Alison Corey and Matt Butler



Explanation

TDS Concentration (Ground-Water Quality Class)

- 0-250 mg/L (Class IA)
- 250.01-500 mg/L (Class IA)
- 500.01-750 mg/L (Class II)
- 750.01-1000 mg/L (Class II)
- 1000.01-1250 mg/L (Class II)
- 1250.01-1500 mg/L (Class II)
- 1500.01-1700 mg/L (Class II)
- 1700+ mg/L (Class II)
- Bedrock (not classified)

Wells (sampled)

- Shallow well (<100 feet deep)
- Medium-depth well (100-200 feet deep)
- Deep well (>200 feet deep)
- Unknown depth

Perfected water wells (not sampled)

- Private water-supply well
- Public water-supply well

- Roads
- Municipal boundary
- County boundary
- Water bodies
- Water courses

N

1:100,000

5 0 5 Miles

5 0 5 Kilometers

Location Map

Projection: UTM Zone 12
Units: Meters
Datum: NAD27
Spheroid: Clarke 1866

Digital water-well locations provided by the Utah Division of Water Rights. Funding and water-quality sampling was provided by the Utah Division of Water Quality.

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Plate 2

GRADUATED-SYMBOL MAP OF TOTAL-DISSOLVED-SOLIDS CONCENTRATION IN CACHE VALLEY, CACHE COUNTY, UTAH

By Mike Lowe, Janae Wallace, and Charles E. Bishop

Digital Compilation by Matt Butler

Explanation

Graduated symbol of total-dissolved-solids concentration

Size corresponds to TDS value

(Number beside well corresponds to TDS concentration)

- 0-499 mg/L
- 500-999 mg/L
- 1000-1499 mg/L
- 1500+ mg/L

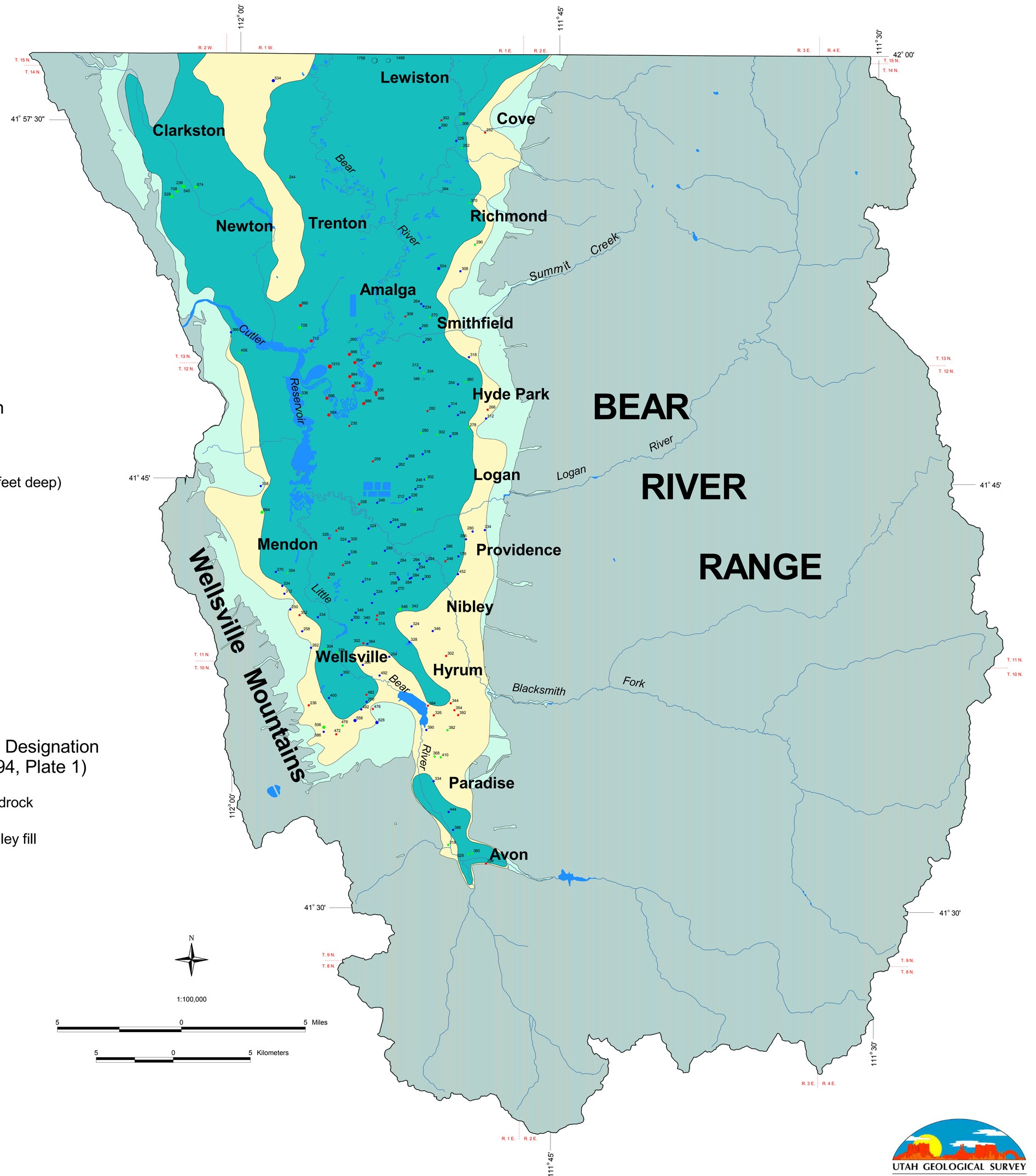
Color corresponds to well depth

- Shallow well (<100 feet deep)
- Medium-depth well (100-200 feet deep)
- Deep well (>200 feet deep)
- Unknown Depth

- Water bodies
- Water courses
- County boundary

Recharge- and Discharge-Area Designation (from Anderson and others, 1994, Plate 1)

- Primary recharge area - bedrock
- Primary recharge area - valley fill
- Secondary recharge area
- Discharge area



Location Map

Projection: UTM Zone 12
Units: Meters
Datum: NAD27
Spheroid: Clarke 1866

Funding and water-quality sampling was provided by the Utah Division of Water Quality.

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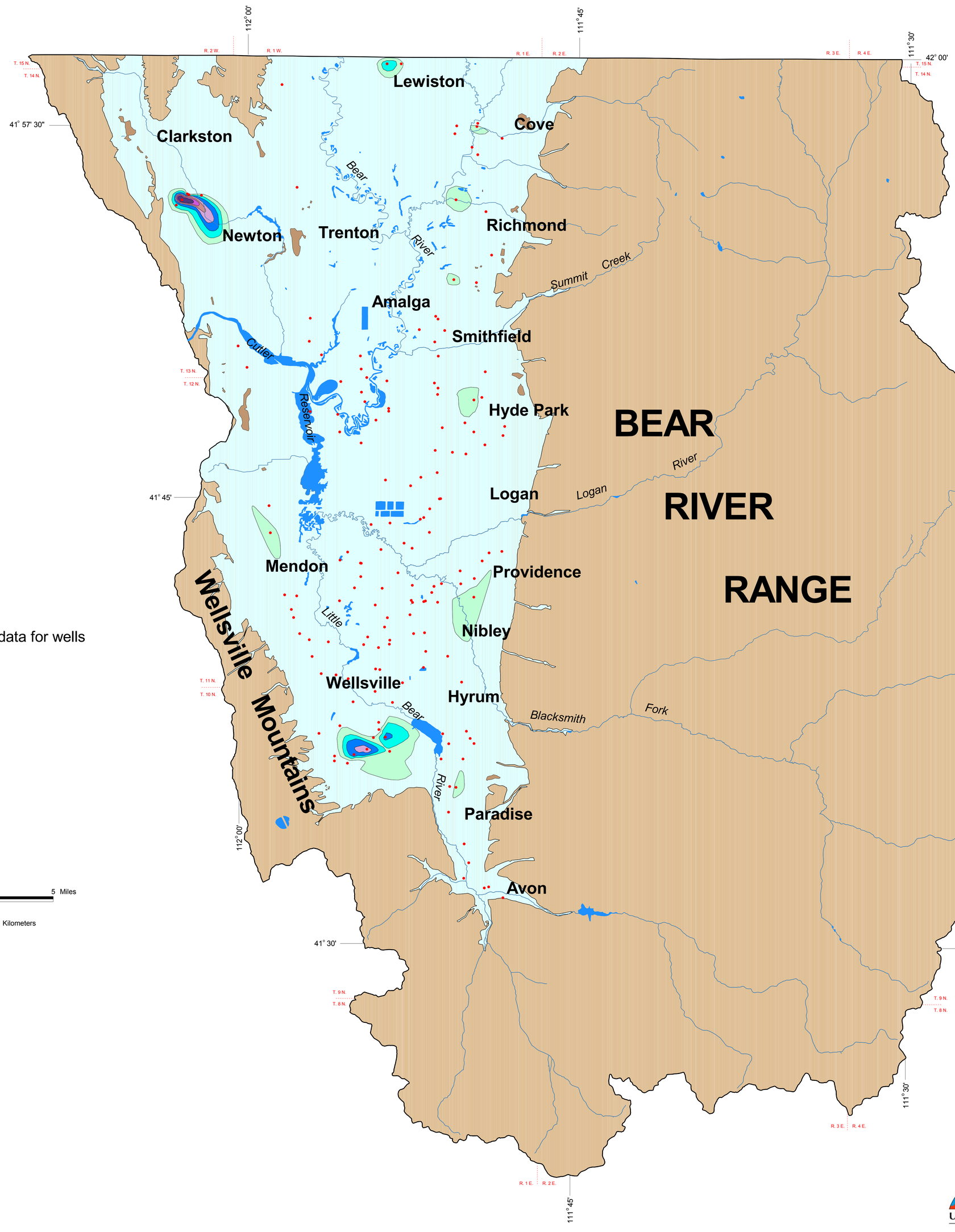
Plate 3

NITRATE CONCENTRATION MAP OF THE PRINCIPAL BASIN-FILL AQUIFER IN CACHE VALLEY, CACHE COUNTY, UTAH

By Mike Lowe, Janae Wallace, and Charles E. Bishop

Digital Compilation by Matt Butler



Explanation

Wells*

Nitrate Concentrations

- 0-5 mg/L
- 5.01-10 mg/L
- 10.01-15 mg/L
- 15.01-20 mg/L
- 20.01-25 mg/L
- 25.01-30 mg/L
- 30.01-35 mg/L
- 35+ mg/L
- Bedrock

* See Appendix A for water-quality data for wells

N

1:100,000

5 0 5 Miles

5 0 5 Kilometers

Location Map

Projection: UTM Zone 12
Units: Meters
Datum: NAD27
Spheroid: Clarke 1866

Funding and water-quality sampling was provided by the Utah Division of Water Quality.

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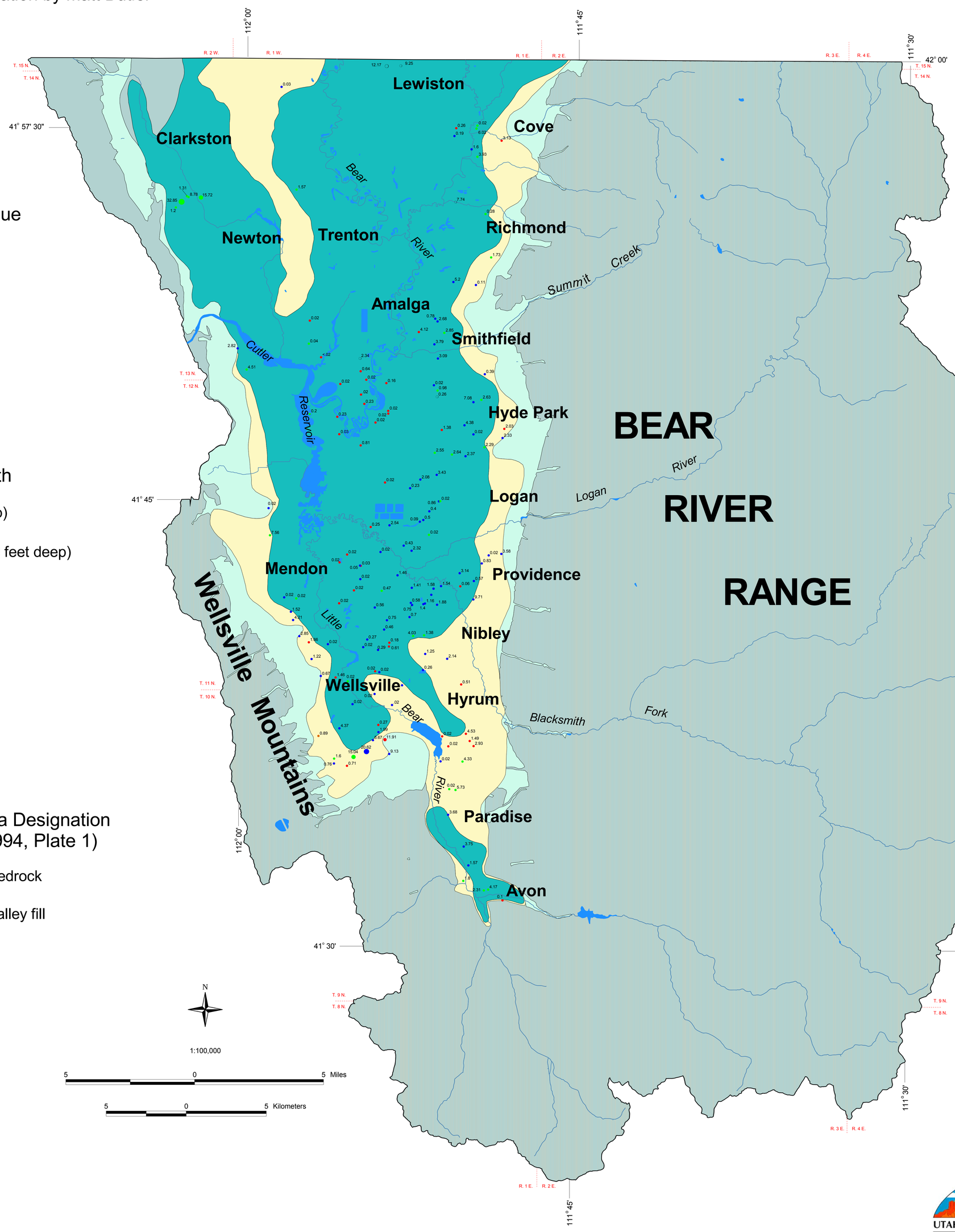
Plate 4

GRADUATED-SYMBOL MAP OF NITRATE CONCENTRATION IN CACHE VALLEY, CACHE COUNTY, UTAH

By Mike Lowe, Janae Wallace, and Charles E. Bishop

Digital Compilation by Matt Butler



Explanation

Graduated symbol of nitrate concentration

Size corresponds to nitrate value

(Number beside well corresponds to nitrate concentration)

- 0-10 mg/L
- 10.01-15 mg/L
- 15.01-20 mg/L
- 20.01-30 mg/L
- 30.01+ mg/L

Color corresponds to well depth

- Shallow well (<100 feet deep)
- Medium-depth well (100-200 feet deep)
- Deep well (>200 feet deep)
- Unknown Depth

- Water bodies
- Water courses
- County boundary

Recharge- and Discharge-Area Designation (from Anderson and others, 1994, Plate 1)

- Primary recharge area - bedrock
- Primary recharge area - valley fill
- Secondary recharge area
- Discharge area

Location Map

Projection: UTM Zone 12
Units: Meters
Datum: NAD27
Spheroid: Clarke 1866

Funding and water-quality sampling was provided by the Utah Division of Water Quality.

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Plate 5

GRADUATED-SYMBOL MAP OF IRON CONCENTRATION IN CACHE VALLEY, CACHE COUNTY, UTAH

By Mike Lowe, Janae Wallace, and Charles E. Bishop

Digital Compilation by Matt Butler

Explanation

Graduated symbol of iron concentration

Size corresponds to iron value

(Number beside well corresponds to iron concentration)

- 0-100 µ/L
- 100.01-500 µ/L
- 500.01-1000 µ/L
- 1000.01-2000 µ/L
- 2000.01-5000 µ/L
- 5000+ µ/L

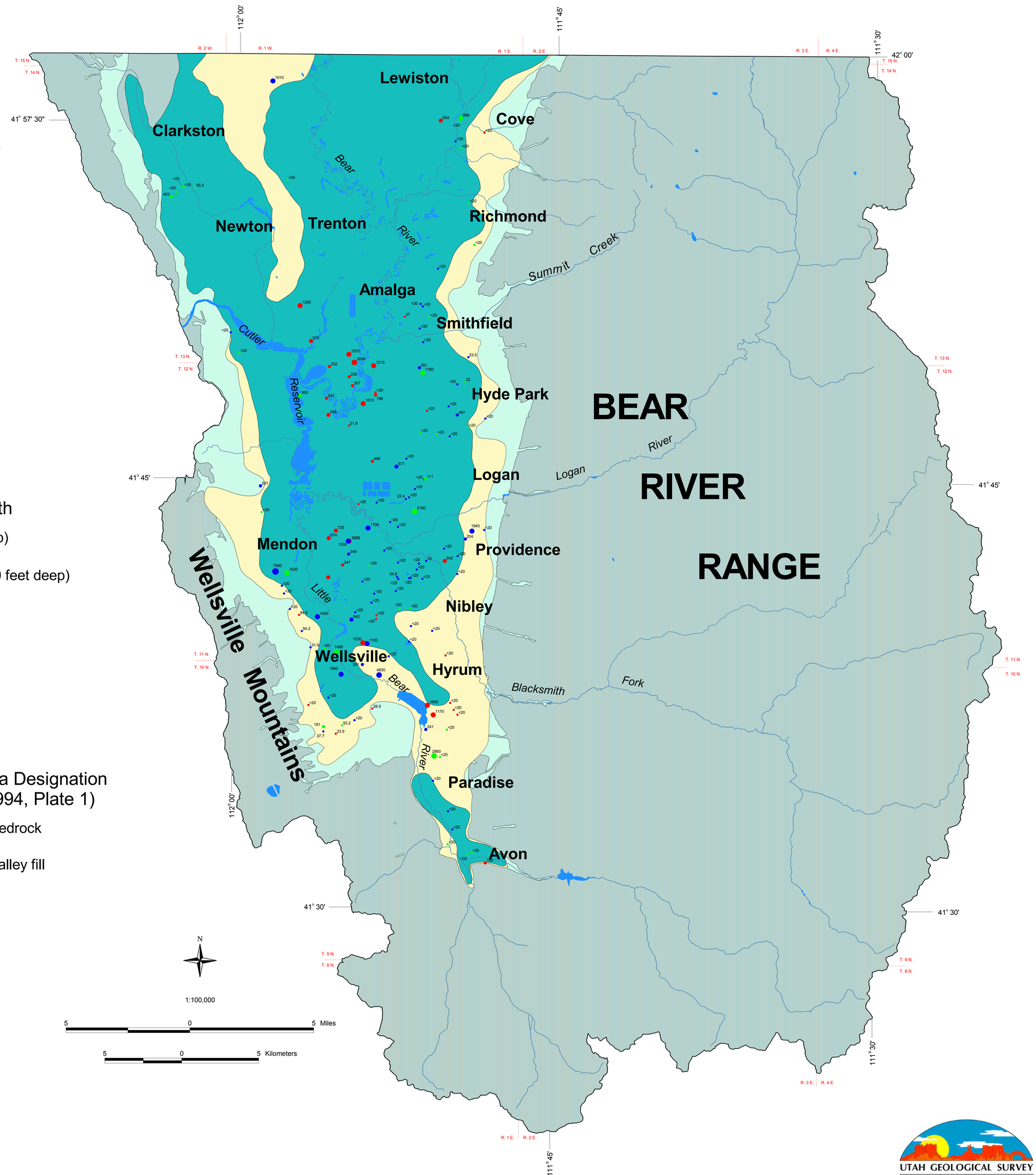
Color corresponds to well depth

- Shallow well (<100 feet deep)
- Medium-depth well (100-200 feet deep)
- Deep well (>200 feet deep)

- Water bodies
- Water courses
- County boundary

Recharge- and Discharge-Area Designation (from Anderson and others, 1994, Plate 1)

- Primary recharge area - bedrock
- Primary recharge area - valley fill
- Secondary recharge area
- Discharge area



Location Map

Projection: UTM Zone 12
Units: Meters
Datum: NAD27
Spheroid: Clarke 1866

Funding and water-quality sampling was provided by the Utah Division of Water Quality.

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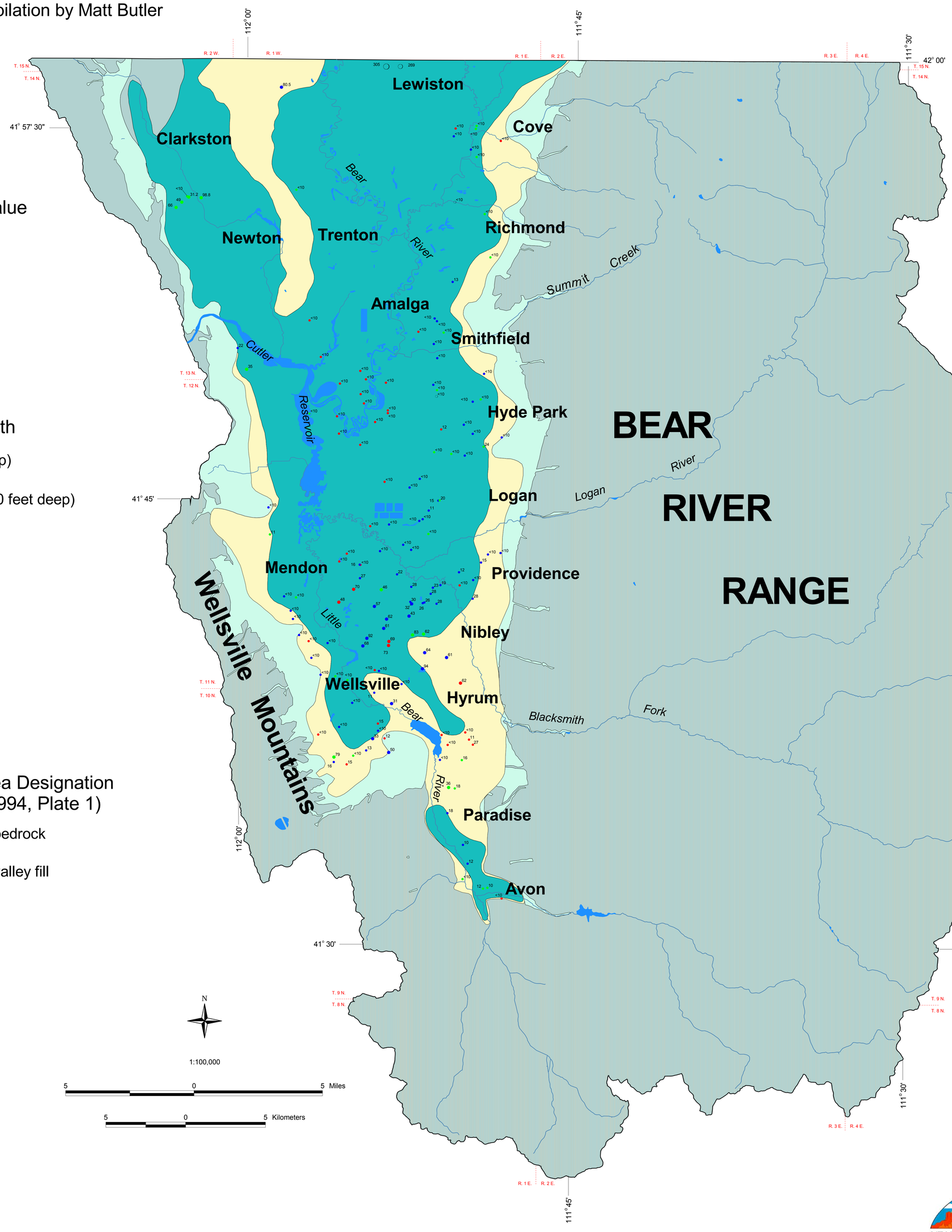
Plate 6

GRADUATED-SYMBOL MAP OF SULFATE CONCENTRATION IN CACHE VALLEY, CACHE COUNTY, UTAH

By Mike Lowe, Janae Wallace, and Charles E. Bishop

Digital Compilation by Matt Butler



Explanation

Graduated symbol of sulfate concentration

Size corresponds to sulfate value

(Number beside well corresponds to sulfate concentration)

- 0-30 mg/L
- 30.01-100 mg/L
- 100.01-300 mg/L
- 300+ mg/L

Color corresponds to well depth

- Shallow well (<100 feet deep)
- Medium-depth well (100-200 feet deep)
- Deep well (>200 feet deep)
- Unknown Depth

- Water bodies
- Water courses
- County boundary

Recharge- and Discharge-Area Designation (from Anderson and others, 1994, Plate 1)

- Primary recharge area - bedrock
- Primary recharge area - valley fill
- Secondary recharge area
- Discharge area

N

1:100,000

5 0 5 Miles

5 0 5 Kilometers

Location Map

Projection: UTM Zone 12
Units: Meters
Datum: NAD27
Spheroid: Clarke 1866

Funding and water-quality sampling was provided by the Utah Division of Water Quality.

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Plate 7

GRADUATED-SYMBOL MAP OF CHLORIDE CONCENTRATION IN CACHE VALLEY, CACHE COUNTY, UTAH

By Mike Lowe, Janae Wallace, and Charles E. Bishop

Digital Compilation by Matt Butler

Explanation

Graduated symbol of chloride concentration

Size corresponds to chloride value

(Number beside well corresponds to chloride concentration)

- 0-20 mg/L
- 20.01-40 mg/L
- 40.01-100 mg/L
- 100.01-300 mg/L
- 300.01-500 mg/L
- 500+ mg/L

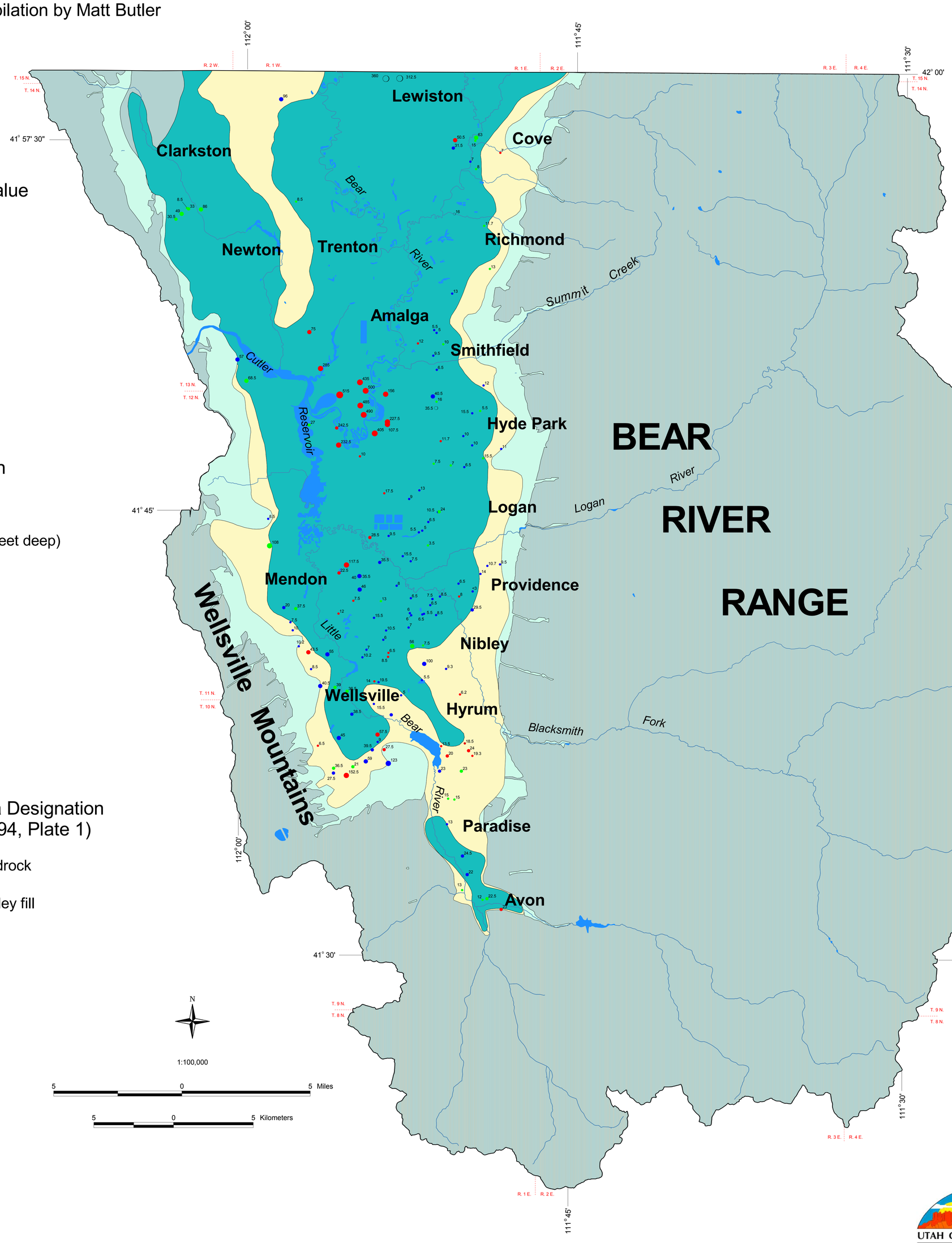
Color corresponds to well depth

- Shallow well (<100 feet deep)
- Medium-depth well (100-200 feet deep)
- Deep well (>200 feet deep)
- Unknown depth

- Water bodies
- Water courses
- County boundaries

Recharge- and Discharge-Area Designation (from Anderson and others, 1994, Plate 1)

- Primary recharge area - bedrock
- Primary recharge area - valley fill
- Secondary recharge area
- Discharge area



Location Map

Projection: UTM Zone 12
Units: Meters
Datum: NAD27
Spheroid: Clarke 1866

Funding and water-quality sampling was provided by the Utah Division of Water Quality.

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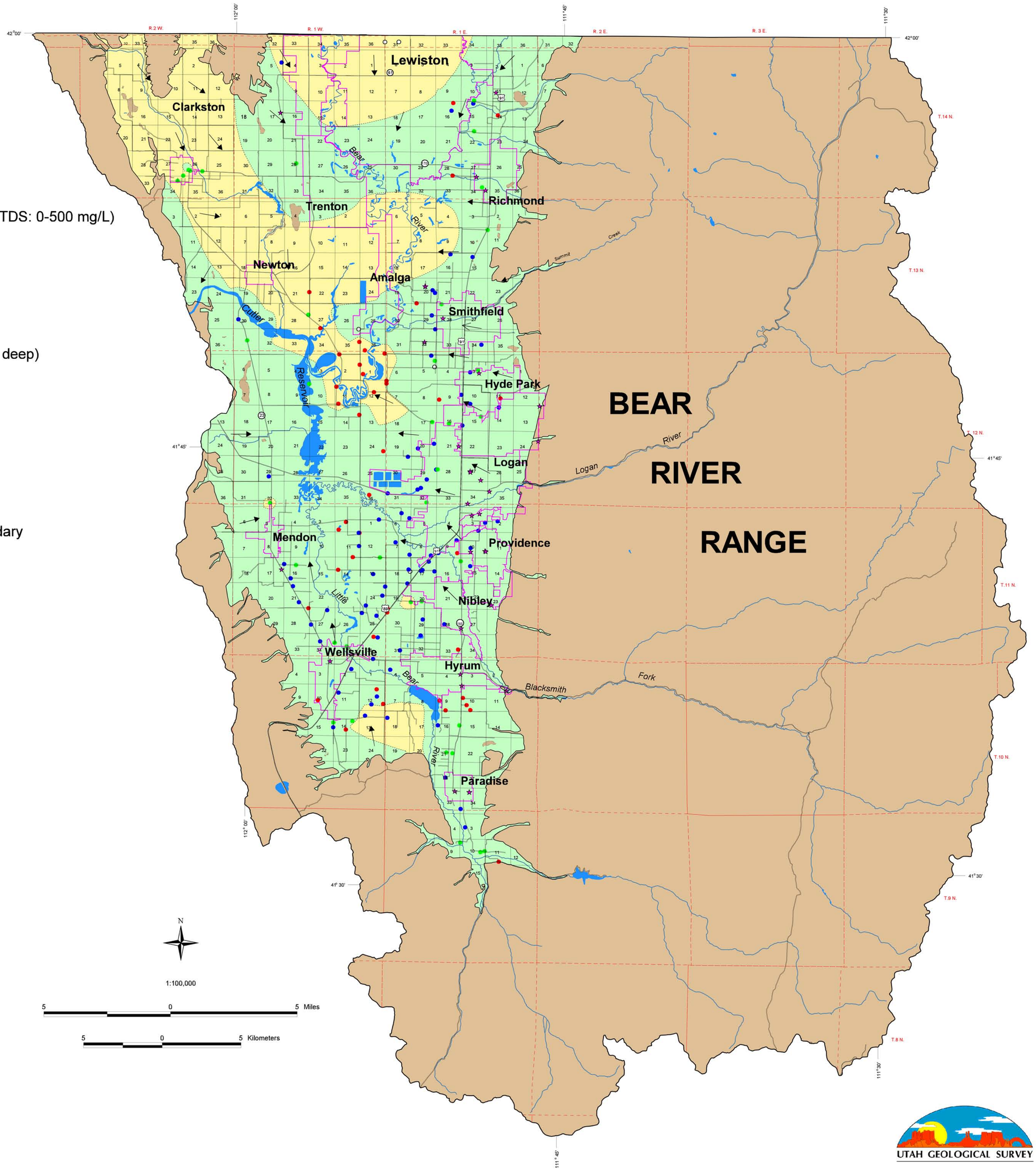
Plate 8

GROUND-WATER QUALITY CLASSIFICATION MAP FOR THE PRINCIPAL BASIN-FILL AQUIFER, CACHE VALLEY, CACHE COUNTY, UTAH

By Janae Wallace and Mike Lowe

Digital compilation by Alison Corey and Matt Butler



Explanation

Ground Water Classification

- Class IA, Pristine Water Quality (TDS: 0-500 mg/L)
- Class II, Drinking Water Quality (TDS: 500-3000 mg/L)
- Bedrock (not classified)

Private water-supply well

- Shallow well (<100 feet deep)
- Medium-depth well (100-200 feet deep)
- Deep well (>200 feet deep)
- Unknown depth

- Public water-supply well
- Roads
- Basin-fill deposits boundary
- Ground-water-quality class boundary
- Municipal boundary
- Water bodies
- Streams
- County boundary
- Ground-water flow direction

N

1:100,000

5 0 5 Miles

5 0 5 Kilometers

Location Map

Projection: UTM Zone 12
Units: Meters
Datum: NAD27
Spheroid: Clarke 1866

This map was funded by the Utah Division of Water Quality. Ground-water flow direction modified from Bjorklund and McGreevy (1971).

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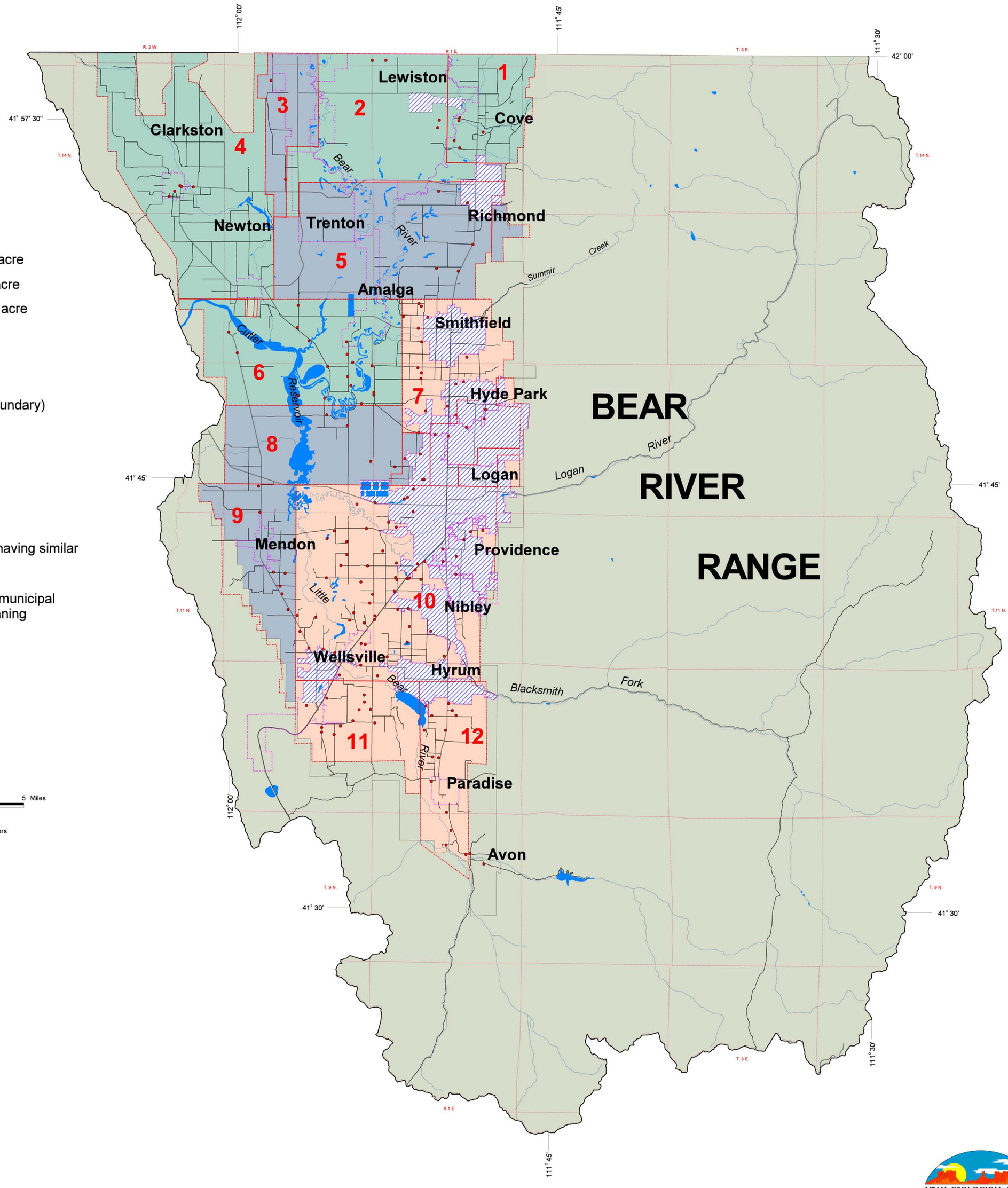
Plate 9

RECOMMENDED SEPTIC-SYSTEM DENSITY BASED ON GROUND-WATER FLOW DOMAIN FOR CACHE VALLEY, CACHE COUNTY, UTAH

By Mike Lowe, Janae Wallace, and Charles E. Bishop

Digital Compilation by Matt Butler



Explanation

- Sampled wells
- 7 Domain number*
- One-third system maximum per acre
- One-fifth system maximum per acre
- One-tenth system maximum per acre
- 40-acre minimum (FR-40)**
- Sewered communities/area
- Water bodies
- Flow-area boundary (Domain Boundary)
- Municipal boundary**
- Roads
- Water course
- County boundary

* Separate domains represent areas having similar ground-water flow characteristics.

** Forest/recreation zone (FR-40) and municipal boundaries from Cache County Planning Department

N

1:100,000

5 0 5 Miles

5 0 5 Kilometers

Location Map

Projection: UTM Zone 12
Units: Meters
Datum: NAD27
Spheroid: Clarke 1866

This study was funded by the U.S. Environmental Protection Agency Nonpoint Service Program and Cache County; the Utah Division of Water Quality provided water-quality sampling.

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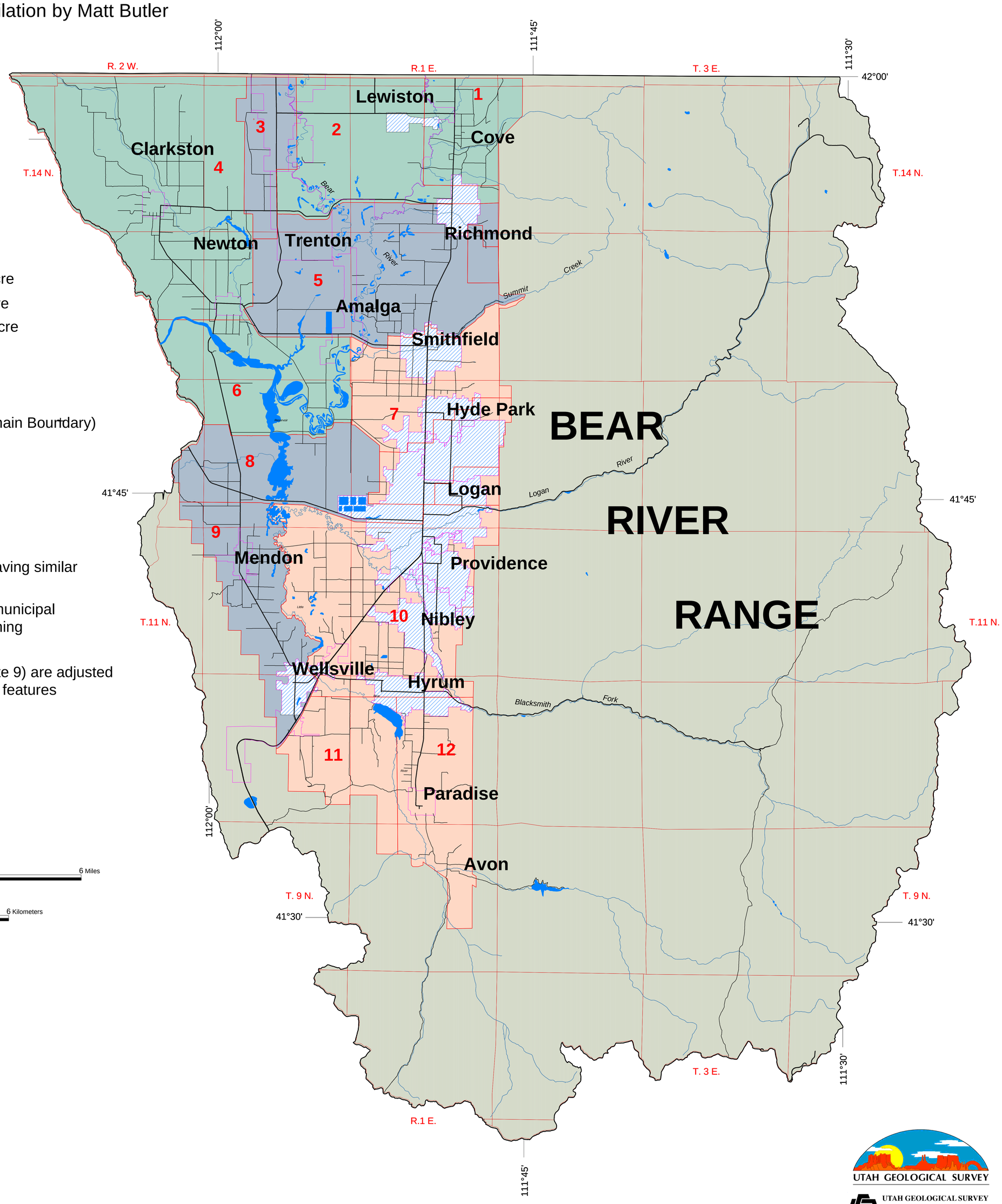
Plate 10

RECOMMENDED SEPTIC-SYSTEM DENSITY FOR LAND-USE PLANNING BASED ON GROUND-WATER FLOW DOMAIN FOR CACHE VALLEY, CACHE COUNTY, UTAH

By Mike Lowe, Janae Wallace, and Charles E. Bishop

Digital Compilation by Matt Butler



Explanation

- 7 Domain number*
- One-third system maximum per acre
- One-fifth system maximum per acre
- One-tenth system maximum per acre
- 40-acre minimum (FR-40)**
- Sewered communities/area
- Water bodies
- Adjusted flow-area boundary (Domain Boundary)
- Municipal boundary**
- Roads
- Water course
- County boundary

* Separate domains represent areas having similar ground-water flow characteristics.

** Forest/recreation zone (FR-40) and municipal boundaries from Cache County Planning Department

+ Domain boundaries (as shown on Plate 9) are adjusted to account for geographic and cultural features

N W E S

1:100,000

6 3 0 6 Miles

6 3 0 6 Kilometers

Location Map

Projection: UTM Zone 12
Units: Meters
Datum: NAD27
Spheroid: Clarke 1866

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