Lower Gunnison Project:

Increasing Agricultural Water Use Efficiency

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Colorado River District

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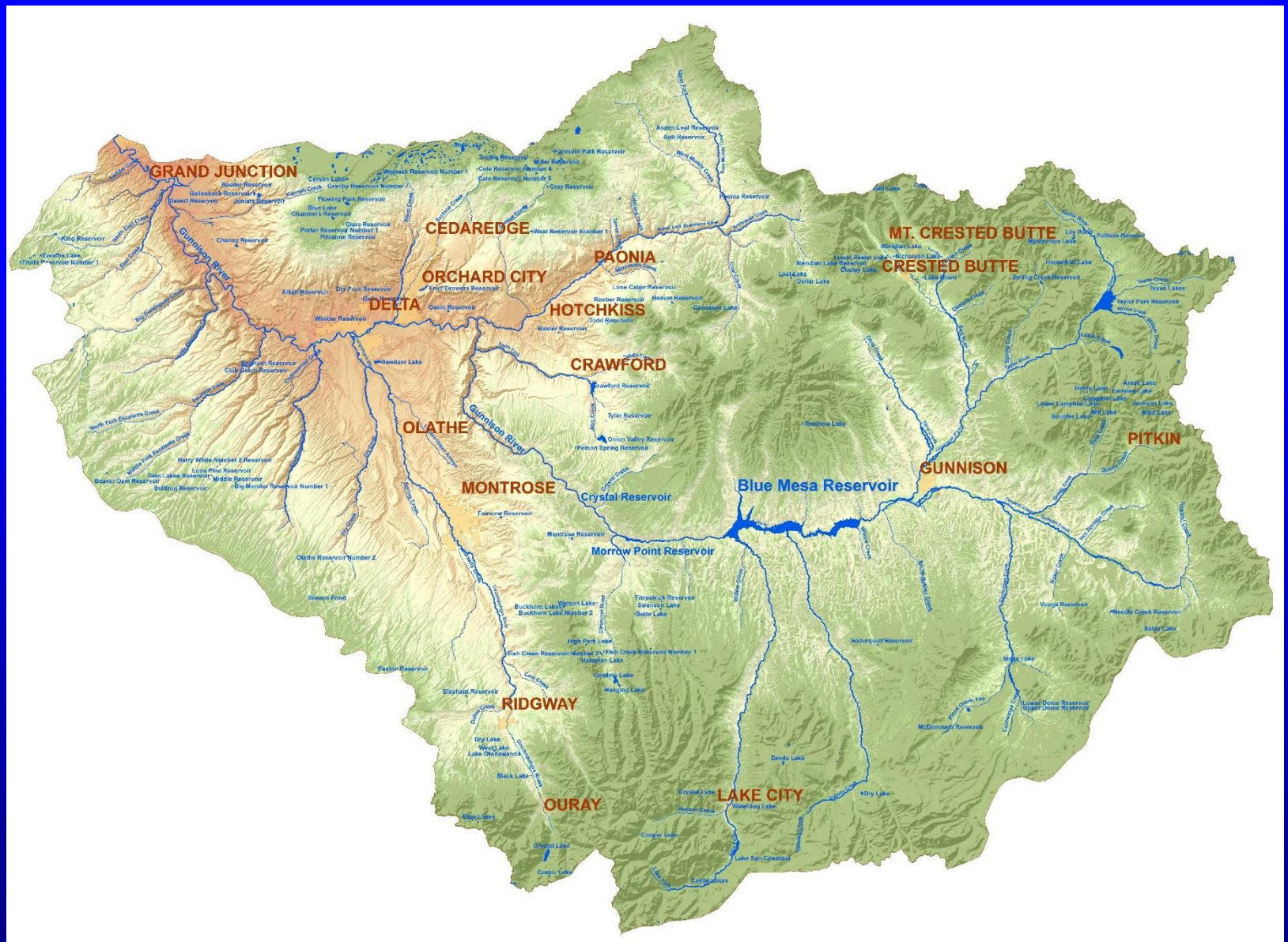

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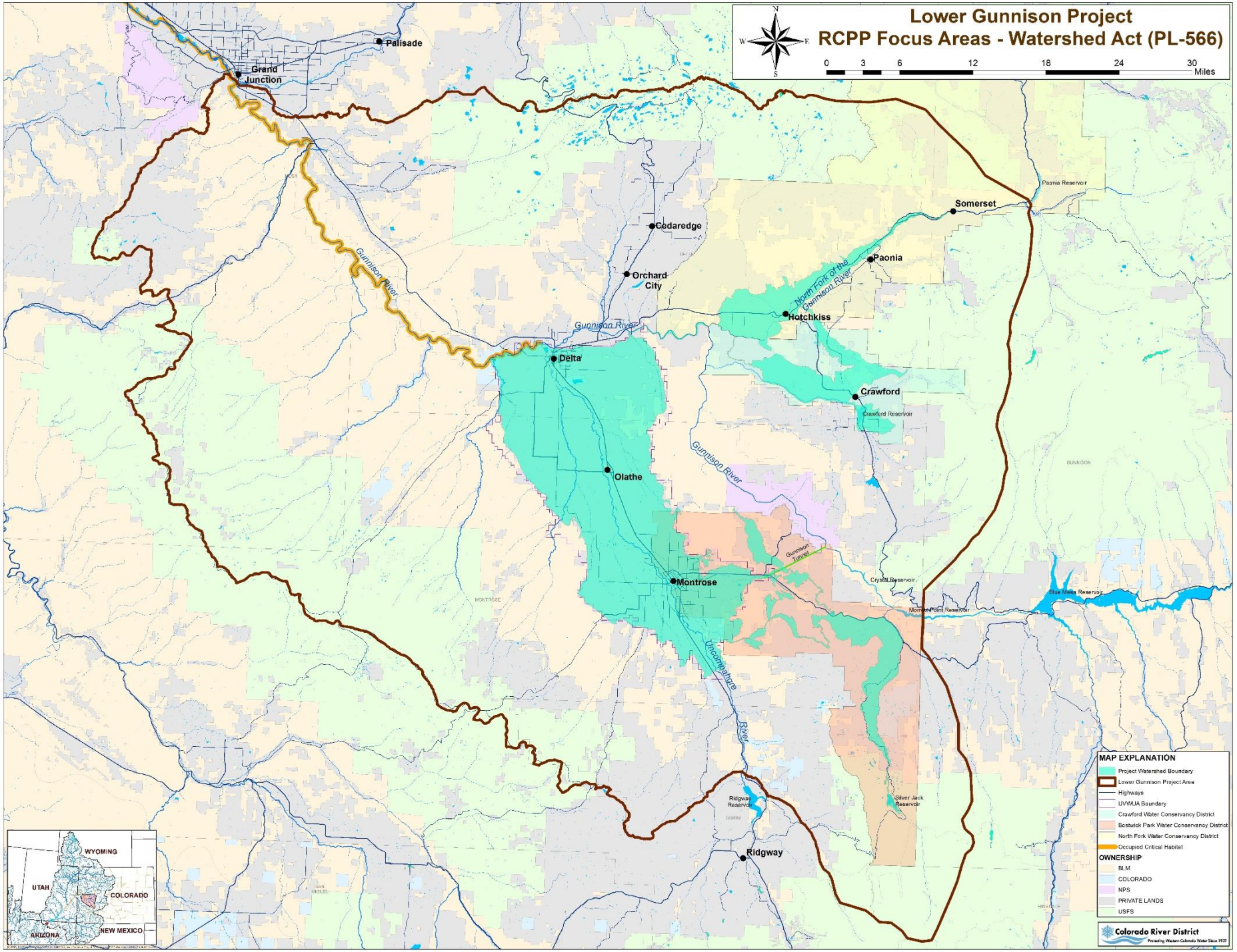
Lower Gunnison Project
RCPP Focus Areas - Watershed Act (PL-566)
0 3 6 12 18 24 30 Miles
Palisade
Grand Junction
Cedaredge
Orchard City
Somerset
Paonia
Paonia Reservoir
North Fork of the Gunnison River
Hotchkiss
Gunnison River
Delta
Crawford
Crawford Reservoir
Olathe
Montrose
Gunnison Tunnel
Crystal Reservoir
Blue Mesa Reservoir
Morrow Point Reservoir
Uncompahgre River
Ridgway Reservoir
Silver Jack Reservoir
Ridgway
WYOMING
UTAH
COLORADO
NEW MEXICO
ARIZONA
MAP EXPLANATION
Project Watershed Boundary
Lower Gunnison Project Area
Highways
UVWUA Boundary
Crawford Water Conservancy District
Bostwick Park Water Conservancy District
North Fork Water Conservancy District
Occupied Critical Habitat
OWNERSHIP
BLM
COLORADO
NPS
PRIVATE LANDS
USFS
Colorado River District

~ Lower Gunnison Project ~

Modernizing Agricultural Management in the Lower Gunnison River Basin: a Cooperative Approach to Increased Water Use Efficiency and Water Quality Improvement

Cooperatively funded ($50MM) series of agricultural water efficiency projects

NRCS (RCPP) and USBR majority funders

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Natural Resource Concerns
(from NRCS/RCPP guidelines)

- **Water Quality Degradation:** Excessive salts in surface waters and ground waters
- **Insufficient Water:** Inefficient use of irrigation water
- **Soil Quality Degradation:** Concentration of salts and other chemicals
- **Inadequate Habitat for Fish and Wildlife:** Habitat degradation

Overarching Project Objective

- **Increased Agricultural Water Use Efficiency**
  - ***Reduced seepage and deep percolation of agricultural waters and decreased associated salt and selenium loading and water loss,***
  - ***Better management of reservoir releases, river diversions and water deliveries for farm use, increased agricultural production, resulting in improved flows and better water quality in down river habitat occupied by endangered species.***

Lower Gunnison Partnership

- Colorado River District
- Uncompahgre Valley Water Users Association
- No Chico Brush (ag producers association),
- Trout Unlimited,
- the Nature Conservancy,
- local agricultural producers
- Selenium Task Force,
- Two Conservation Districts
  - Shavano and Delta Conservation Districts
- Four Water Conservancy Districts
- Colorado Water Conservation Board (Gunnison Basin Roundtable)
- Colorado Department of Agriculture

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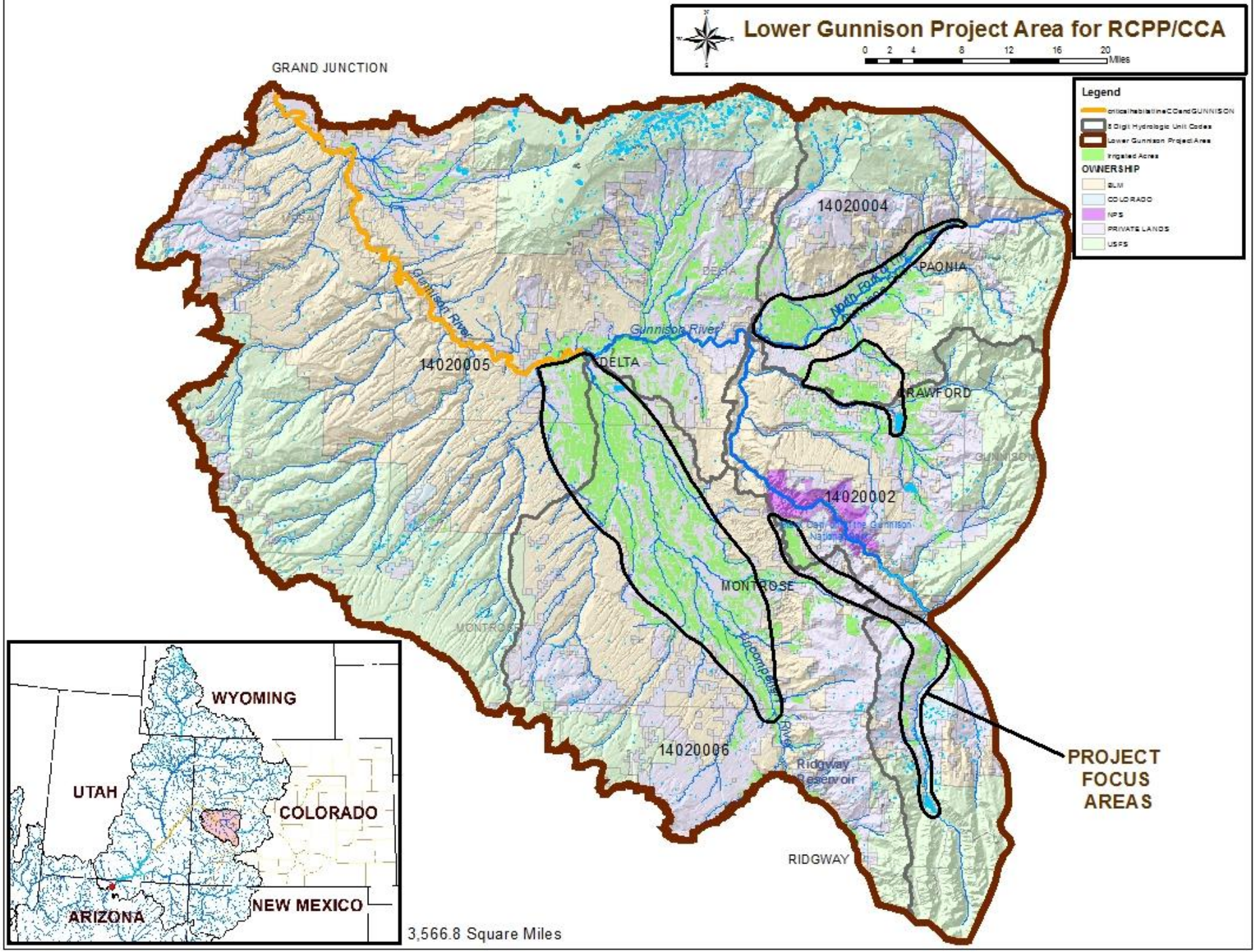
Lower Gunnison Project Area for RCPP/CCA
0 2 4 8 12 16 20 Miles
GRAND JUNCTION
Legend
Critical Habitat in CO and GUNNISON
8 Digit Hydrologic Unit Codes
Lower Gunnison Project Area
Irrigated Acres
OWNERSHIP
BLM
COLORADO
NPS
PRIVATE LANDS
USFS
14020004
PAONIA
North Fork of the Gunnison
Gunnison River
Gunnison River
14020005
DELTA
CRAWFORD
GUNNISON
14020002
Black Canyon of the Gunnison National Park
MONTROSE
MONTROSE
Uncompahgre River
14020006
Ridgway Reservoir
RIDGWAY
PROJECT FOCUS AREAS
WYOMING
UTAH
COLORADO
NEW MEXICO
ARIZONA
3,566.8 Square Miles

Lower Gunnison Project Approaches

"Off-farm" - modernization of aging water delivery systems, conversion of open canals and ditches to pipe, adding monitoring and control systems (*i.e.,* SCADA)

"Near-farm" - modernization of unlined laterals to enclosed pipe, adding 'smart' monitoring and control systems driven by on-farm water demand;

"On-farm" - conversion to locally-adapted, high efficiency irrigation water application systems (e.g. sprinkler, drip, start-of-art soil moisture monitoring and control, as well as other types of precision agricultural practices) related to improved water delivery systems and soil health practices

Integration - system-wide optimization techniques for irrigation water conveyance and application using re-regulation (where appropriate),

Off-farm Modernization: Canal Replacement

Purpose/Goal: To reduce Selenium and salinity loading by lining / piping canals and laterals

Desired Outcome:
Reduced deep percolation and loss that can mobilize / transport contaminants in soil (i.e., salt and selenium)

Unlined earthen canal – Uncompahgre Valley

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On-farm Modernization: High Efficiency Irrigation

Sprinklers can eliminate up to 85 percent of
induced deep percolation
and associated salt and selenium loading

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Considerations for Colorado Agriculture

- Helps provide regulatory compliance and certainty under Clean Water and Endangered Species Acts
- Helps growers be more productive and sustainable

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