

CHAPTER 5

CUMULATIVE IMPACTS ANALYSIS

5.1 INTRODUCTION

NEPA requires an assessment of potential cumulative impacts. Federal regulations (40 CFR 1508.7) define cumulative impacts as:

"...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

Potential cumulative impacts are assessed at the resource level. The cumulative impact analysis (CIA) area for past, existing and reasonably foreseeable future activities (RFFA's) that may generate cumulative impacts varies depending on the resource under consideration. For example, the CIA area for air quality effects is regional in nature; therefore the scope of activities considered is necessarily broad. In contrast, the CIA area for geology and minerals considers the project area associated with the proposed action and alternatives; therefore the scope of potential cumulative activities considered is much narrower.

This discussion of potential cumulative impacts assumes the successful implementation of the environmental protection and mitigation measures discussed in chapters two and four of this EA as well as compliance with the GRRR RMP and all applicable federal, state and local regulations and permit requirements. The analysis of cumulative impacts addresses both potential negative and positive impacts.

5.2 PAST, EXISTING AND REASONABLY FORESEEABLE FUTURE ACTIVITY

Past, existing and RFFA s are organized by CIA area and include the following:

5.2.1 Copper Ridge Project Area

Historic and existing activities in the CRPA include cattle grazing, dispersed recreation and oil and gas exploration, development and production. Reasonably foreseeable future activities within the CRPA are limited to the Proposed Action and alternatives.

While future natural gas proposals are possible, the Proposed Action incorporates all reasonably foreseeable natural gas activity within the project area based on current knowledge of the area's geology and natural gas drilling and development technology. If these factors change and additional proposals are submitted, or major changes in the Proposed Action are warranted, additional NEPA assessment (including cumulative impact analysis) would be required.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

5.2.1.1 Disturbance within the Copper Ridge Project Area

Existing disturbance within the CRPA is approximately 370 acres, or around 1.5 percent of the 24,953 acres comprising the project area. During the construction phase, the Proposed Action would disturb 583 acres. Under Alternative A (No-Action) disturbance would be 397 acres (Table 2-2). Disturbance areas within the CRPA area would be reduced upon reclamation of pipeline ROW's and unused portions of drill pad and ancillary facility disturbances during the production phase for each alternative. Under the Proposed Action, reclamation would reduce impacts to 171 acres for a cumulative impact of 541 acres or 2.2 percent of the CRPA. Alternative A impacts would decrease to 109 acres, with cumulative impacts affecting 479 acres or about 1.9 percent of the CRPA.

5.3 CUMULATIVE IMPACTS ANALYSIS

Table 5-1 details the cumulative impacts by resource area associated with the Copper Ridge Shallow Gas Project. Based on analysis of the cumulative effects for the identified areas by resource and considering that existing, proposed, and foreseeable actions would result in the disturbance of no more than 2.5% of any one area assessed, the proposed action would not result in considerable degradation to the resource.

5.3.1 Geology/Minerals/Paleontology

Existing, proposed, and reasonably foreseeable actions would not affect landslide deposits and would be unlikely to trigger geologic hazards such as landslides, mudslides, debris flows, or slumps, no incremental increase in cumulative impacts associated with geologic hazards would occur. If drilling policy is followed including proper well pad and facility siting, construction, and reclamation techniques, the cumulative impacts to the surface geologic environment would be minimized. Proposed and RFFA's would require the restoration of disturbed lands to predisturbance conditions and as such would minimize topographic alterations. Standard stipulations and project- and site-specific construction and reclamation procedures would be required for additional development on federal lands and these measures would further minimize cumulative impacts of surface geologic environment.

With the exception of shallow gas, no major surface mineral resources would be impacted by the implementation of the RFFA's. Protection of subsurface mineral resources is provided by the BLM casing and well bore cementing policy.

No cumulative adverse impacts are expected to occur to potential fossil resources beyond those discussed in Section 4.1.3.1 as a result of the Proposed Action or No Action alternative in combination with existing, proposed, and reasonably foreseeable actions. Adoption of mitigation measures prescribed in that section could foster cumulative beneficial impacts of the project by either resulting in the discovery of new fossil resources or providing paleontologists with evidence of absence of such resources in the area.

**Table 5-1
Cumulative Assessment by Resource Value
Copper Ridge Shallow Gas Project**

Resource Value	Cumulative Impact Analysis Area	Acreage in IAA (if applicable)	Existing Level of Disturbance or Activity ¹	Reasonably Foreseeable Development ² (RFD) or Activity including:		Potential Cumulative Impacts (life-of-project disturbance only)
				Proposed Action ³ (PA)	No Action ⁴	
Geo/Paleo-	CRPA	24,953	748.4 ac	171 ac	109 ac	Existing disturbance + PA would result in 541 ac of disturbance or 2.2% of the project area.
Minerals	Area from 191 east to boundary of CD/WII & DF project area	1,898,464	34,060 ac	6,631 ac	6,569 ac	Existing disturbance, PA, + RFD would result in 40,691 ac or 2.1% of the area.
Air Quality	Near Field – Project Area + 12.4 miles Far Field -Regional including south half portion of WY, Northern CO, NE Utah including Bridger, Fitzpatrick, Popo Agie, Savage Run wilderness areas		On-going oil and gas related activity, coal mining, power generation, intra and interstate commerce	Addition of up to 1,292 wells and related facilities	Addition of up to 1250 wells and related facilities	Emissions would remain within federal and state thresholds.
Soils	Affected watersheds: Patrick Draw, Upper Black Butte Creek, Big Flat Draw, Lower Salt Wells Creek, Polly Draw	108,766	1,038 ac	171 ac	109 ac	Existing and PA would result in disturbance of in 1,209 ac of disturbance or 1.1% of the affected watersheds. Stabilization and reclamation measures required

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

Resource Value	Cumulative Impact Analysis Area	Acreage in IAA (if applicable)	Existing Level of Disturbance or Activity ¹	Reasonably Foreseeable Development ² (RFD) or Activity including:		Potential Cumulative Impacts (life-of-project disturbance only)
				Proposed Action ³ (PA)	No Action ⁴	
Water Resources	Surface Water – Affected watersheds: Patrick Draw, Upper Black Butte Creek, Big Flat Draw, Lower Salt Wells Creek, Polly Draw	108,766	1,038 ac	171 ac	109 ac	Existing and PA would result in disturbance of 1,209 ac or 1.1% within the affected watersheds. Avoidance and/or protective measures required.
	Groundwater – Expected drawdown area (cone of depression)	Approximately sub-surface 12,160 ac				Draw down of water within coal bearing seams would be depleted (injection into another formation) only to the extent to allow gas to desorb (reduce pressure so gas can flow freely). Two other shallow gas projects are proposed in the vicinity of the proposed project area although specific components are not known at this time, could result in overlap of cones of depression of the potentiometric surface (confined aquifer).
Vegetation/Wetlands	Expanded GRRMP area for general veg – south of I-80; east of Hwy 430, to approximately 6 mi+ east of RSFO boundary	2,664,228	35,314 ac	6,631 ac	6,569 ac	Existing, PA + RFD would result in disturbance of 41,945 ac or 1.6% of the area assessed.
	Rock Springs Grazing Allotment	2,127,200	27,736 ac	6,631 ac	6,569 ac	Existing, PA + RFD would result in disturbance of 34,367 ac or 1.6% of the Allotment.
Wildlife – Big Game Species	South Rock Springs Mule Deer Herd Unit	1,477,156 (348,037 cwyrl)	22,449 ac (450 ac cwyrl)	6,631 ac	6,569 ac	Existing, PA + RFD would result in disturbance of 29,080 ac or 1.9% of the herd unit. Existing disturbance + PA would result in 470 ac of disturbance (0.1%) of cwyrl range. Timing limitations required.
	Petition Elk Herd Unit	1,836,488 (27,388 cwyrl)	33,654 ac (220 ac cwyrl)	6,631 ac	6,569 ac	Existing, PA + RFD would result in disturbance of 40,285 ac or 2.2% of the herd unit. The PA would not result in further disturbance to cwyrl range. RFD, timing limitation required in cwyrl range.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

Resource Value	Cumulative Impact Analysis Area	Acres in IAA (if applicable)	Existing Level of Disturbance or Activity ¹	Reasonably Foreseeable Development ² (RFD) or Activity including: Proposed Action ³ (PA)	Potential Cumulative Impacts (life-of-project disturbance only)
T/E/P/C/S Wildlife Species	Bitter Creek Antelope Herd Unit	1,835,828 (212,222 cwyrl)	35,604 ac (2,185 ac cwyrl)	6,631 ac	Existing, PA + RFD would result in disturbance of 45,343 ac or 2.5% of the herd unit. Existing disturbance + PA would result in 2,230 ac or 1.1% disturbance to cwyrl range. RFD - timing limitation required.
	Sage Grouse	1,477,156 total	22,949 ac total	6,631 ac total 0 Leks	Existing, PA + RFD would result in disturbance of 29,580 ac or 2.0% of the conservation planning unit. The PA or RFD would not result in further disturbance to leks or ¼ mi buffer as no surface occupancy stipulations apply. The PA could disturb up to 171 ac of potential habitat or 0.3% of potential habitat found in planning unit.
	Lower Green River conservation planning area unit.	(9,614 ac lek; 379,437ac potential nesting)	10 ac lek; 940 ac potential nesting)	PA - 171 ac potential nesting	Foreseeable actions addressed on a case-by-case basis. Timing limitations or avoidance of usable habitat required.
Note: PA - No effect determination for T/E/P/C species	Raptors – CRPA + 2 mi buffer	66,362 (4,940ac nesting + ½ - 1 mi buffer)	748.4 ac	171 ac	No cumulative effect. None of the proposed wells would be located within the ½ to 1 mi (depending on species of raptor) buffer of a known nest. Protective measures apply.
T/E/P/C/SS Fish Species	Other Sensitive Species (ie, p-dogs, etc)	24,953	748.4 ac	171 ac	Individuals could be adversely impacted (depending upon timing and amount of disturbance in a habitat type); however, populations would not be impacted. These species would benefit from application of protective measures.
T/E/P/C/SS Plant Species	Range of each species	Downstream CO River species 216	0 ac	0 ac	Existing disturbance handed on a case-by-case basis. "Affected but not likely to adversely effect" determination (waiver of impact fee approved by USFWS) for PA. RFD water depletions analyzed & mitigated on a case-by-case basis. No effect. Disturbance not allowed in range of each species.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

Resource Value	Cumulative Impact Analysis Area	Acreage in IAA (if applicable)	Existing Level of Disturbance or Activity ¹	Reasonably Foreseeable Development ² (RFD) or Activity including: Proposed Action ³ (PA) No Action ⁴	Potential Cumulative Impacts (life-of-project disturbance only)
Wild horses	Salt Wells Creek and Adobe Town Wild Horse Herd Management Areas	1,573,585	18,410 ac	6,631 ac	6,569 ac
Recreation	CRPA + southern Sweetwater County		Hunting, camping, hiking, ORV use, etc.		Some temporary displacement of hunters and recreationists during periods of drilling and construction. There could be reduced levels of satisfaction with the recreational experience but more vehicle access.
Visual Resources	CRPA + adjacent areas in southern Sweetwater County		On-going and proposed oil and gas related activity, coal mining, interstate traffic, livestock grazing, etc.		Existing, PA + RFD would result in continued use of public and non-public lands for energy production, commerce, recreation, and agricultural uses. Most activity would occur in Class IV (allows for major modification to landscape). Any activity in other VRM classifications would be mitigated according to classification requirements.
Cultural Resources	CRPA + 5 mi Buffer	156,341	1434.4 ac	171 ac	109 ac
Socio-Economics	Sweetwater County				Any activity requiring federal action is subject to compliance with Section 106 of the NHPA. Impacts to cultural resources are mitigated through the consultation process on a case-by-case basis. Existing, PA + RFD would continue to contribute to the economic well-being of Sweetwater County (and increase state revenues). Continued employment opportunities would occur (no increases in employment expected).
Transportation	CRPA, Public Access into Area				The PA would result in minor increases in the level of traffic during drilling operations. Existing workers and service providers would be used if production occurs.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

Resource Value	Cumulative Impact Analysis Area	Acreage in IAA (if applicable)	Existing Level of Disturbance or Activity ¹	Reasonably Foreseeable Development ² (RFD) or Activity including:		Potential Cumulative Impacts (life-of-project disturbance only)
				Proposed Action ³ (PA)	No Action ⁴	
Health/Safety	CRPA	24,953	370 ac	171 ac	109 ac	The PA would not add concerns to the health and safety of workers the project area since the same individuals would be involved with implementing the project.
Noise	CFPA	24,953	370 ac			The PA would not add to the existing noise level since drilling is a temporary operation within an area previously developed oil and gas activity. Best management practices would apply

1/ - Producing wells includes wells that are producing, shut-in, temporarily abandoned, and drilling (included because well would be partially or fully reclaimed depending on production). Disturbance is assumed to be 1.0 ac per producing well, road disturbance at 3.5 ac per producing well, and assumes all pipeline disturbance has been successfully reclaimed and revegetation stabilized although 0.5 ac of long-term disturbance from pipeline facilities per producing well (GRRMP FEIS, pg 674). Well data current as of 9/15/03.

Other known and estimated disturbance includes:

- € 7,004 ac – Black Butte Coal Mine (Sept 2003)
- € 4 ac – Zeolite Mine
- € 1,770 ac – County Roads
- € 1,006 ac – Railroad and related facilities
- € 1,006 ac – Interstate 80 (RSGA Allotment only)
- € 6,746 ac – Jim Bridger Coal Mine (RSGA Allotment only)
- € 640 ac – Jim Bridger Power Plant (RSGA Allotment only)
- € 1,850 ac – Lucite Hills Coal Mine (RSGA Allotment only)
- € 2,156 ac – OCI Trona Mine (RSGA Allotment only)
- € 5,554 ac – Estimated disturbance from communication sites, non o/g-related roads, sub-stations, towns (outside of incorporated cities/towns), ranches, etc (25% of known disturbance).

Total estimated disturbance of non-o/g related disturbance of 16,344 acres and 27,736 ac disturbance in the RSGA.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

Resource Value	Cumulative Impact Analysis Area	Increase in IAA (if applicable)	Existing Level of Disturbance or Activity ¹	Reasonably Foreseeable Development ² (RFD) or Activity including: Proposed Action ³ (PA) No Action ⁴	Potential Cumulative Impacts (life-of-project disturbance only)
----------------	---------------------------------	---------------------------------	--------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------

2/ - Reasonably foreseeable development includes the following:

- ∅ Remaining wells in the Rock Springs portion of the approved Continental Divider/Wamsutter II Natural Gas Project (273 wells approved as of 9/15/2003); 657 wells could be approved under the analysis completed;
- ∅ Remaining wells in the Approved Vermillion Basin Natural Gas Exploration and Production Project area; 52 wells could be approved under the analysis completed.
- ∅ Proposed development of 385 wells in the Desolation Flats Natural Gas Project area (under analysis).
- ∅ Proposed development of 120 wells in the Pacific Rim Shallow Gas Project area (pre-scoping phase).
- ∅ Proposed development of 61 wells in the Bitter Creek Shallow Gas Project area (pre-scoping phase)
- ∅ Possible development of 17 exploratory wells out side of specific project areas.

Total RFD of 1,292 wells or 6,460 acres using same disturbance assumptions mentioned above.

3/ - Assumes all 89 wells will be successful producers under the Proposed Action resulting in a LOP disturbance of 171 ac. Also assumes all wells approved under existing analyses will be drilled and produce fluid minerals successfully resulting in 6,460 ac of disturbance. Note: it is unlikely that all wells approved to date will be successful producers and does not recognize that depleted or uneconomic wells would be permanently abandoned.

4/ - Assumes 47 wells will be successful producers under the No Action Alternative resulting in a LOP disturbance of 109 ac. Also assumes all wells approved under existing analyses will be drilled and produce fluid minerals successfully resulting in another 6,460 ac of disturbance. Note: it is unlikely that all wells approved to date will be successful producers and does not recognize that depleted or uneconomic wells would be permanently abandoned.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

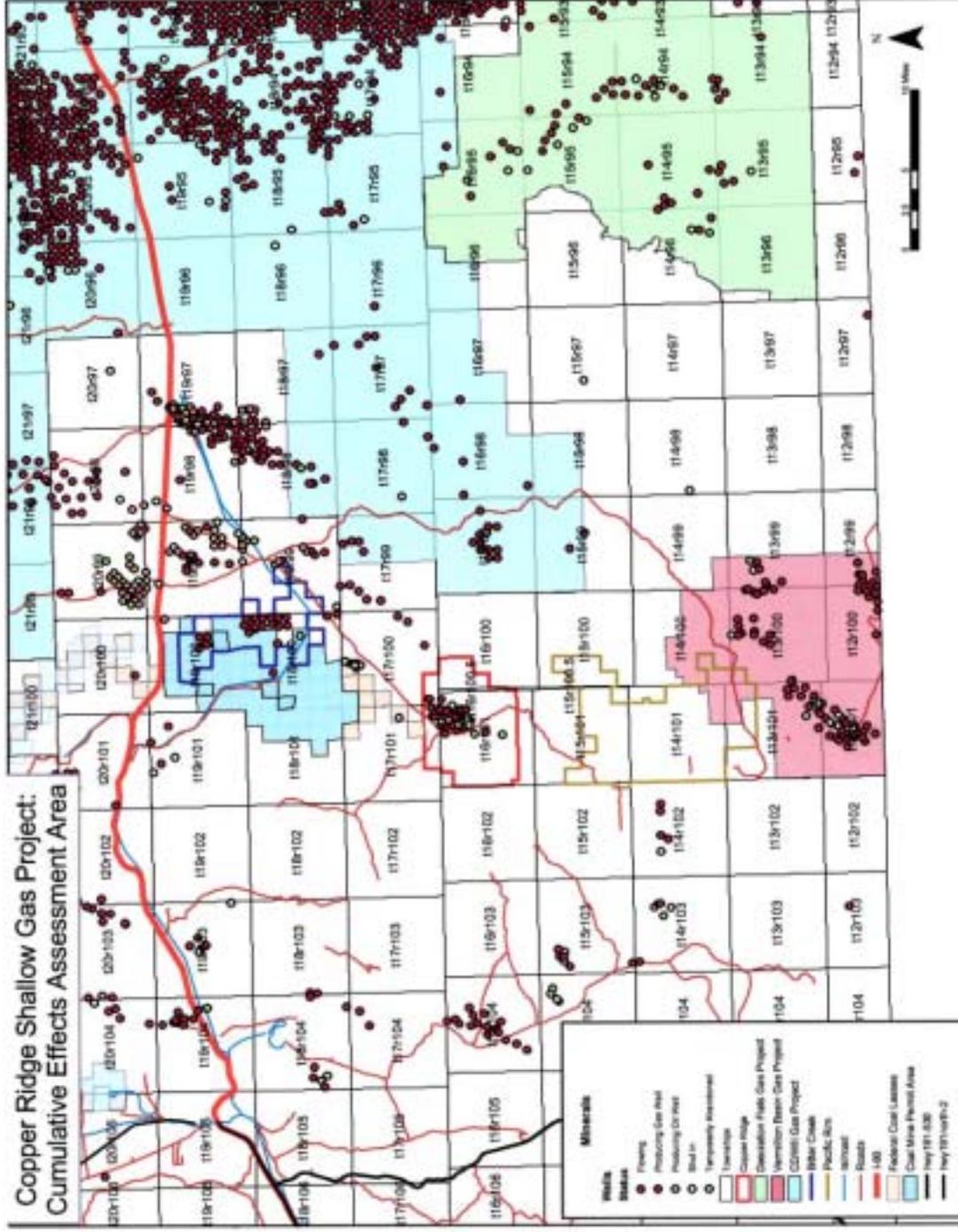


Figure 5-1. Cumulative Effects Assessment Area – Minerals.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

5.3.2 Air Quality

Cumulative impacts from emissions resulting from the implementation of past oil and gas projects, along with the Proposed Action (or No Action) alternative would be much the same as those found on similar oil and gas projects such as Continental Divide, Pinedale Anticline, and Desolation Flats natural gas projects.

5.3.3 Soils

The CIA area for soils includes the affected watersheds encompassing 108,766 acres. Cumulative impacts include soil impacts from on-going exploration and development activities, recently constructed projects, and RFFA's, as described in Table 5.1. Cumulative disturbance of 1,209 acres would be approximately 1.1 percent of the 108,766-acre CIA area. This amount of cumulative impacts upon the soil resources would be minimal, provided that all mitigation and avoidance measures are implemented

5.3.4 Water Resources

The water resources CIA area includes the 108,766 acres encompassing the affected watersheds. Existing, proposed, and known future disturbance would result in 1,209 acres or 1.1 percent of the CIA area potentially disturbed. Any groundwater impact is expected to be minimal since drawdown would occur only to the extent needed to allow the gas to desorb. Cumulative disturbance would minimally impact surface water or groundwater quantity or quality.

The impacts predicted to occur are based upon the current knowledge of the geology, coal resource, and groundwater hydrology in the area. Both natural gas and water production rates from future shallow gas wells, and specifics related to groundwater injection, cannot be accurately predicted at this time. These variables could potentially affect the configuration of field production, gas processing, and gas and water conveyance facilities; however, none of these changes are expected to measurably affect the conclusions presented herein. Federal regulations provide for additional analysis if substantial changes in resource conditions would alter the conclusions reached herein.

Cumulative impacts to surface water resources would be maximized shortly after the start of construction activities, decreasing in time due to reclamation efforts, then stabilizing during the production/operation period when routine maintenance of wells and ancillary facilities takes place. Additionally, all roads, well locations, and facility infrastructure would be regularly inspected and maintained to minimize erosion, sedimentation, and surface water quality impairment.

Due to thick confining layers, wells completed in water-bearing strata above or below the Almond coal seams are not likely to be impacted.

Current and future oil and gas exploration and development activities in the Project Area must comply with federal and state environmental regulations. Therefore, impacts to groundwater quantity or quality on a cumulative scale are not expected. This is particularly true given the fact that wells would be completed in accordance with Onshore Order No. 2 and the recent BLM guidelines that reduce the potential for groundwater contamination.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

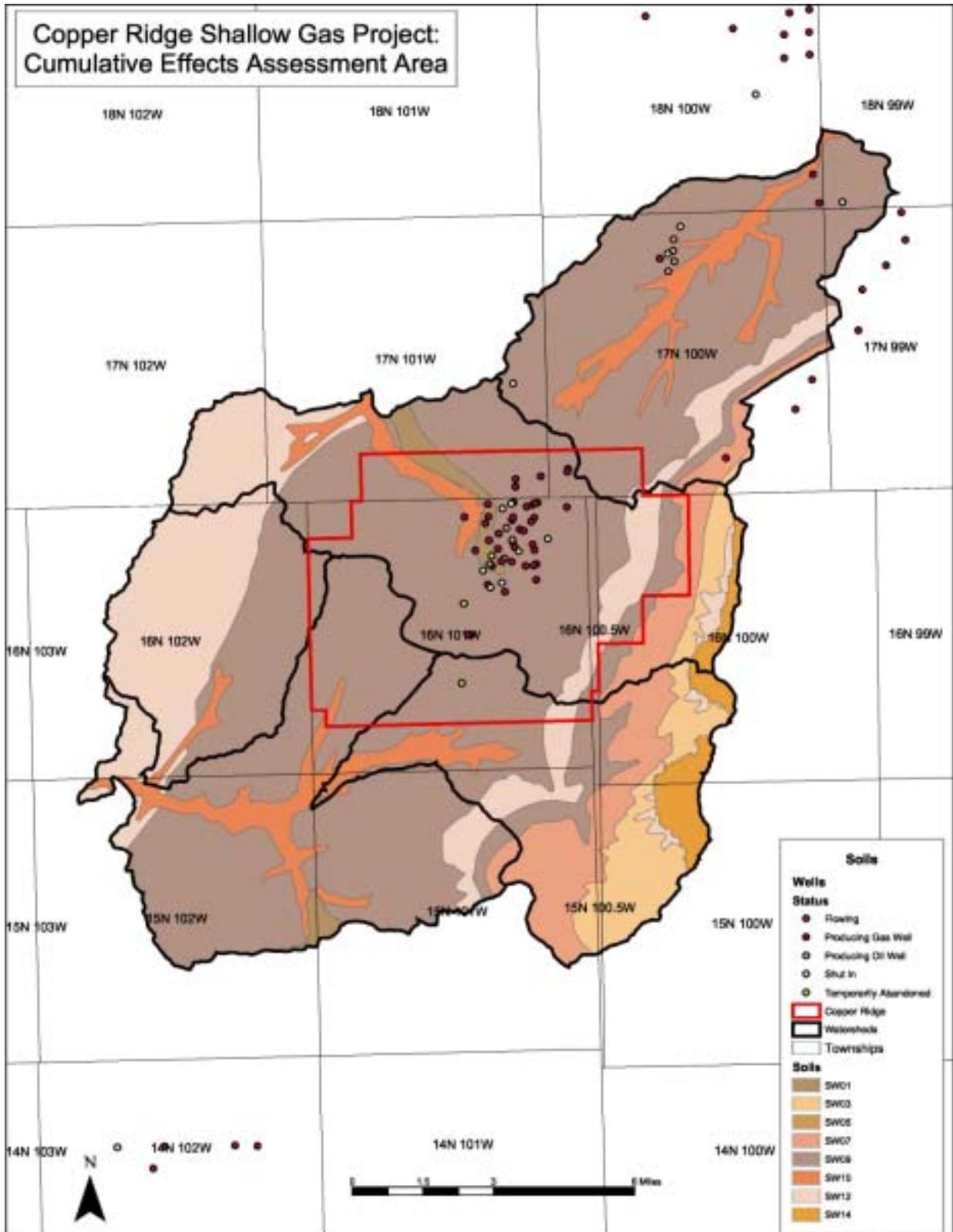


Figure 5-2. Cumulative Effects Assessment Area – Soils

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

5.3.5 Vegetation and Wetlands

The CIA area for vegetation and wetlands includes over 2.6 million acres. Cumulative impacts includes impacts to vegetation and wetlands from on-going exploration and development activities, recently constructed projects, the Proposed Action and known foreseeable actions.

Cumulative disturbance would result in 41,945 acres 1.6 percent of the CIA area. This amount of vegetation loss would be minimal, and no direct impacts of aquatic and riparian areas are expected because current proposed project activities would avoid these areas. Provided that soil erosion mitigation measures are followed, no indirect aquatic and riparian impacts are expected. Cumulative impacts upon both vegetation and wetland resources would be minimal, provided that all mitigation and avoidance measures are implemented.

5.3.6 Range Resources and Other Land Uses

The Rock Springs Grazing Allotment, containing 2,127,200 acres makes up the CIA for range resources and other land uses. Existing, proposed, and known foreseeable actions would result in the disturbance of 34,367 acres or 1.6 percent of the area. This disturbance results in a loss of 2,291 AUMs or 2.3 percent of the 97,358 active AUMs (this figure does not recognize suspended AUMs). Potential cumulative impacts to other land uses are limited to recreation resources and wildlife habitat, which are discussed under the sections dealing with those resources.

5.3.7 Wildlife

The CIA area varies with species, as indicated within the respective analyses. The disturbance of wildlife habitat resulting from implementation of the drilling program would reduce habitat availability and effectiveness for a variety of common mammals, birds and their predators. Initial phases of surface disturbance would result in some direct mortality to small mammals, displacement of songbirds, along with a slight increase in mortality from increased vehicle use in the immediate area.

Activities associated with the construction phase would likely temporarily displace antelope and mule deer; however, once construction is completed they would likely habituate and return to pre-disturbance activity patterns. Elk crucial winter/yearlong range does not occur in the area. Pronghorn crucial winter/yearlong occurs within the Project Area would be affected over the short-term; however, the Proposed Action would occur in an area where existing use by humans already occurs. Mule deer crucial winter/yearlong range occurs on 1,108 acres within the 24,898 acre project area (or 4.4 percent of the project area). The proportion of mule deer crucial winter/yearlong range within the South Rock Springs Herd Unit that would be affected existing and proposed disturbance would be 0.1 percent of the available crucial winter range. Construction activities on crucial winter/yearlong range would be limited to May 1 - Nov 14. Provided that mitigation measures contained in Chapter 2 and the RMP are implemented, cumulative impacts to big game populations within their respective herd units are expected to be minimal.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

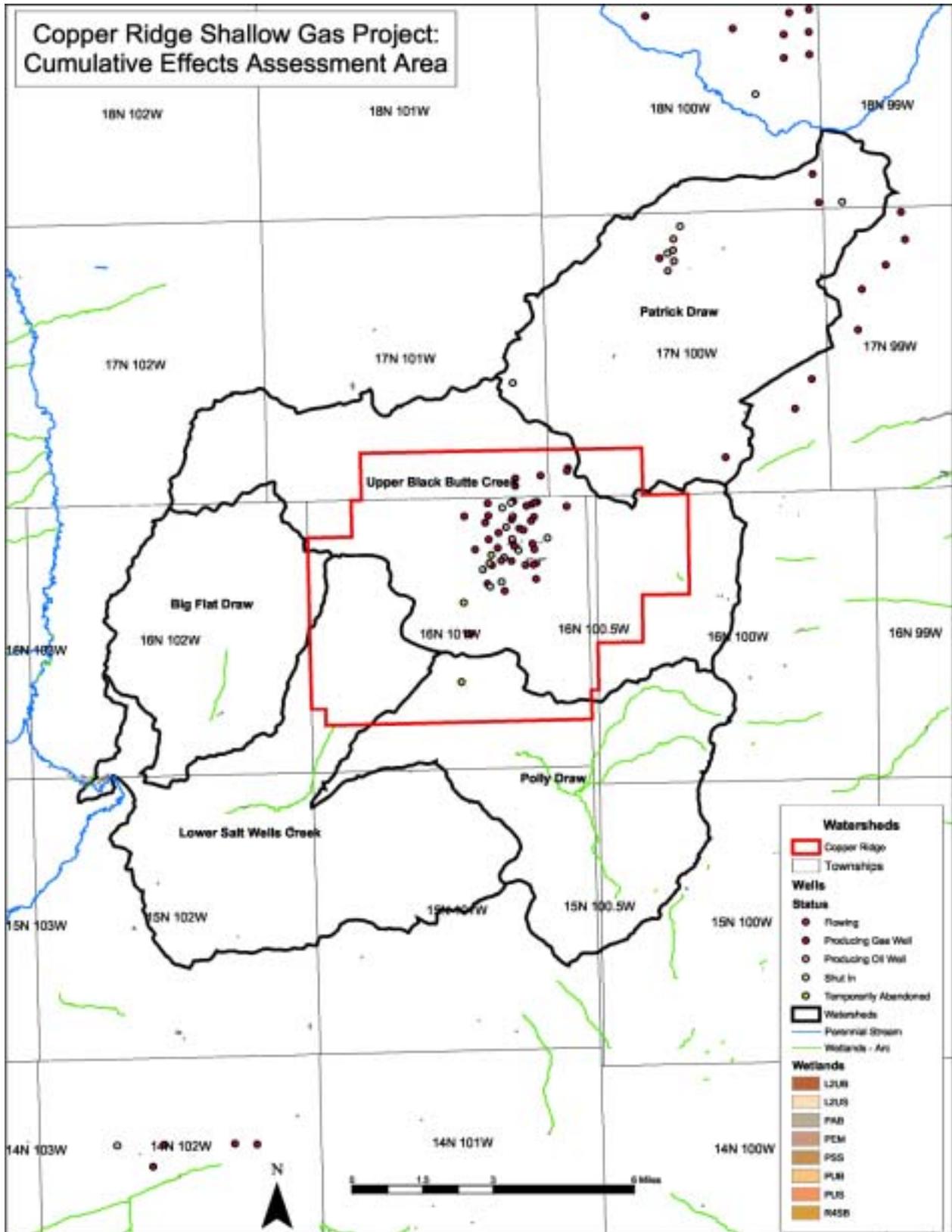


Figure 5-3. Cumulative Effects Assessment Area – Watersheds.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

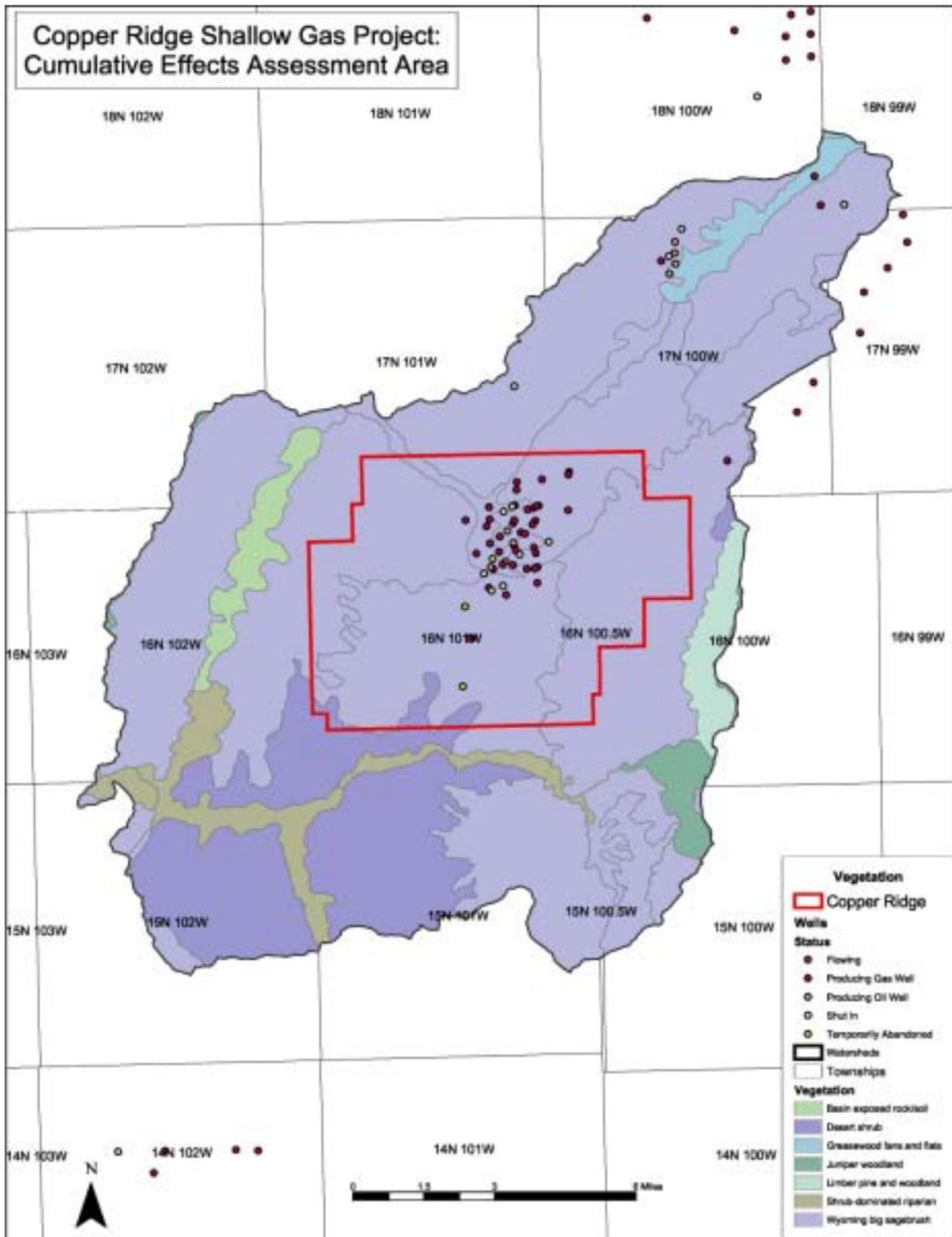


Figure 5-4. Cumulative Effects Assessment Area – Vegetation

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

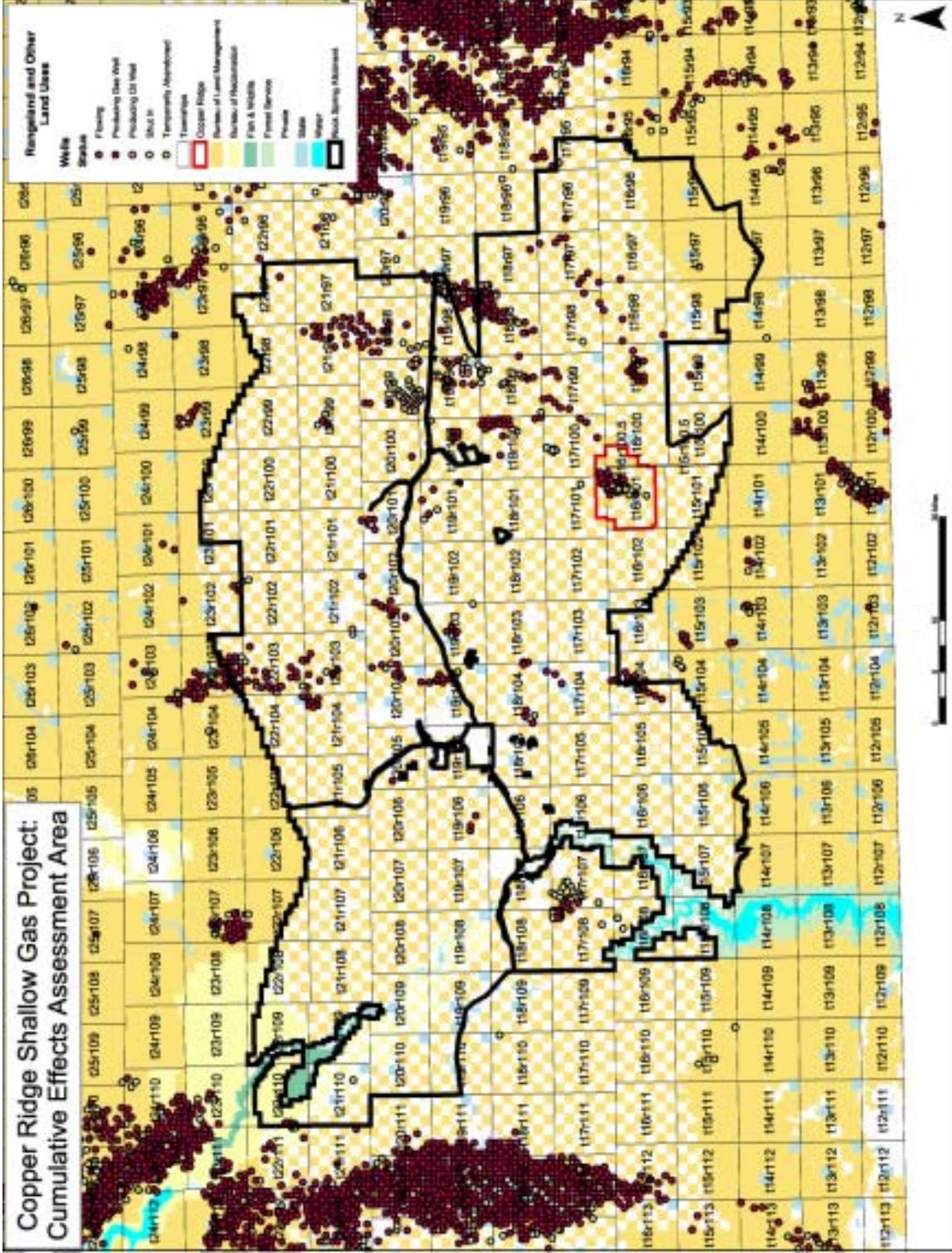


Figure 5-5. Cumulative Effects Assessment Area – Rangeland and Other Land Uses.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

Greater sage-grouse within Lower Green River Basin Conservation Planning Unit would only be minimally impacted from the cumulative disturbance associated with the Proposed Action and other known foreseeable development provided the implementation of the NSO within ¼ mile of a lek, seasonal closures, reclamation, and committed mitigation measures are followed.

Although no active raptor nests were located within the Project Area during 2003 surveys, implementation of protection measures identified in Chapter 2 and the RMP are expected to protect the raptor populations.

5.3.8 Special Status Plant, Wildlife, and Fish Species

5.3.8.1 Plant Species

The distribution of plant species of concern is very limited within the Project Area due to a lack of suitable habitat for these species. The required application of existing FWS and BLM protective measures is expected to provide adequate protection for threatened, endangered, and special status plant species. Thus, no impacts to Special Status Plant Species are expected.

5.3.8.2 Wildlife Species

For known foreseeable actions, appropriate coordination or consultation with FWS is required. The required application of existing FWS and BLM monitoring and mitigation measures is expected to provide adequate protection for threatened, endangered, proposed or candidate plant species. Thus, impacts are expected to be minimal.

5.3.8.3 Fish Species

Formal consultation with FWS has been completed. Impact payments to the FWS for recovery efforts have been waived. All known foreseeable actions require consultation with the FWS if downstream fish are affected.

5.3.9 Recreation

BLM does not have statistics on historical use of the project area by recreation groups which could be used to determine trends in cumulative impacts on recreation use and displacement. Cumulatively, overall impacts to the recreation resource are expected to be minimal with some temporary displacement of hunters and recreationists during the short-term drilling periods. Some long-term displacement of hunters and non-consumptive users could occur, and there may be reduced levels of satisfaction for those who might continue to use the area.

5.3.10 Visual Resources

As discussed in Chapter 3, existing visual qualities in the CRPA and adjacent lands have already been affected by ongoing natural gas development, including road building and pipeline construction and other industrial uses (i.e., gas process, coal mining, grazing, etc). Existing, proposed, or reasonably foreseeable development would add to the level of impact to visual resources in the area. However, the cumulative impact of existing, proposed, or reasonably foreseeable development on visual resources would still be consistent with the current VRM

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

Class IV designation with implementation of mitigation measures proposed by Anadarko.

5.3.11 Cultural Resources

Cultural resources on public lands, including archaeological sites and historic properties, are protected by federal law and regulations. Current operations must comply with these protective regulations, and BLM requires the completion of cultural resource inventories prior to surface-disturbing activities. These inventories have been used to identify sites potentially eligible for inclusion on the National Register of Historic Places and to identify sites which BLM has required past exploration and development activities to avoid.

Because Class III cultural resource inventories must be completed, the potential for increased impacts on cultural artifacts would be minimized. By avoiding known cultural and historical sites during the layout of drill sites, access roads, and pipeline corridors, the potential for incremental increases in cumulative impacts would be avoided. Completion of cultural resource inventories would have a beneficial, cumulative impact on the level of cultural information about the project area. Some unintentional damage to subsurface resources could occur during grading or excavation activities. However, implementation of resource protection and mitigation measures described in Chapter 2 would protect such resources upon discovery.

5.3.12 Socioeconomics

Southwest Wyoming is currently experiencing an increase in the pace and level of natural gas development. Drilling and field development is occurring in areas near the CRPA including Continental Divide/Wamsutter II area, Vermillion Basin area, and other fields (Brady, Table Rock, Baxter Basin). While this surge in development will result in increased employment, income and tax revenues in the region, it will also result in increased housing demand and increased demand for local and state government facilities and services.

Communities such as Rock Springs are still below peak population levels of the 1980's and have infrastructure and housing to accommodate population growth. At the recent pace of development, neither the relatively small, short-term drilling and field development workforce or the minimal operations employment and activity associated with the existing, proposed, nor reasonably foreseeable development would add appreciably to cumulative housing and local government service demand in the area.

If the current pace of drilling and field development in southwest Wyoming continues, however, the potential for degradation of the quality of some recreation resources in the area would increase. If Carbon County residents perceive that degradation of recreation resources has occurred, levels of dissatisfaction among some residents and area visitors would correspondingly increase.

5.3.13 Transportation

Increased oil and gas development in Sweetwater County will result in increased traffic on affected segments of I-80, WSH 430, and affected County Roads. The condition of these highways is adequate to accommodate existing and increased levels of traffic.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

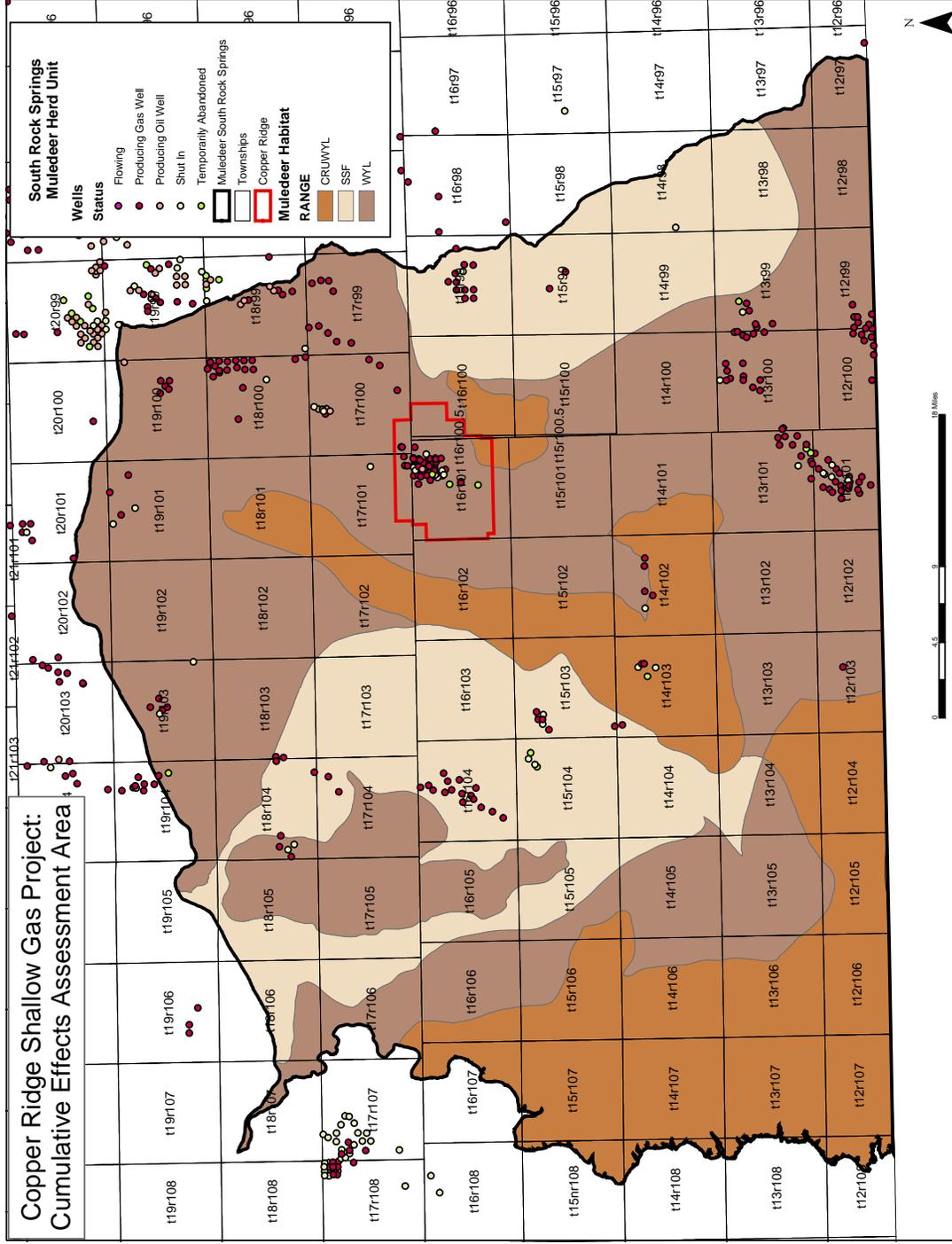


Figure 5-6. Cumulative Effects Assessment Area – Mule Deer.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

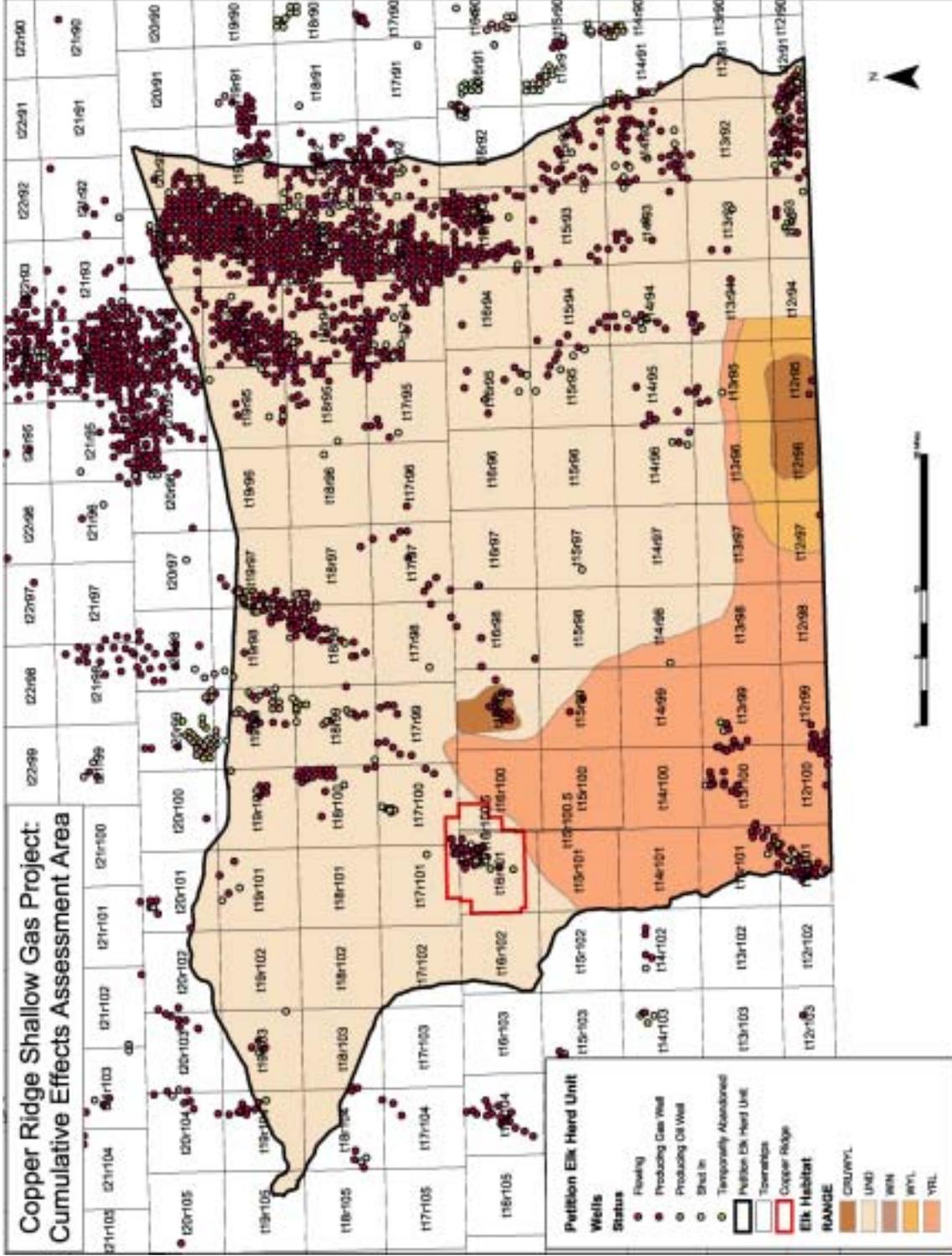


Figure 5-7. Cumulative Effects Assessment Area – Elk.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

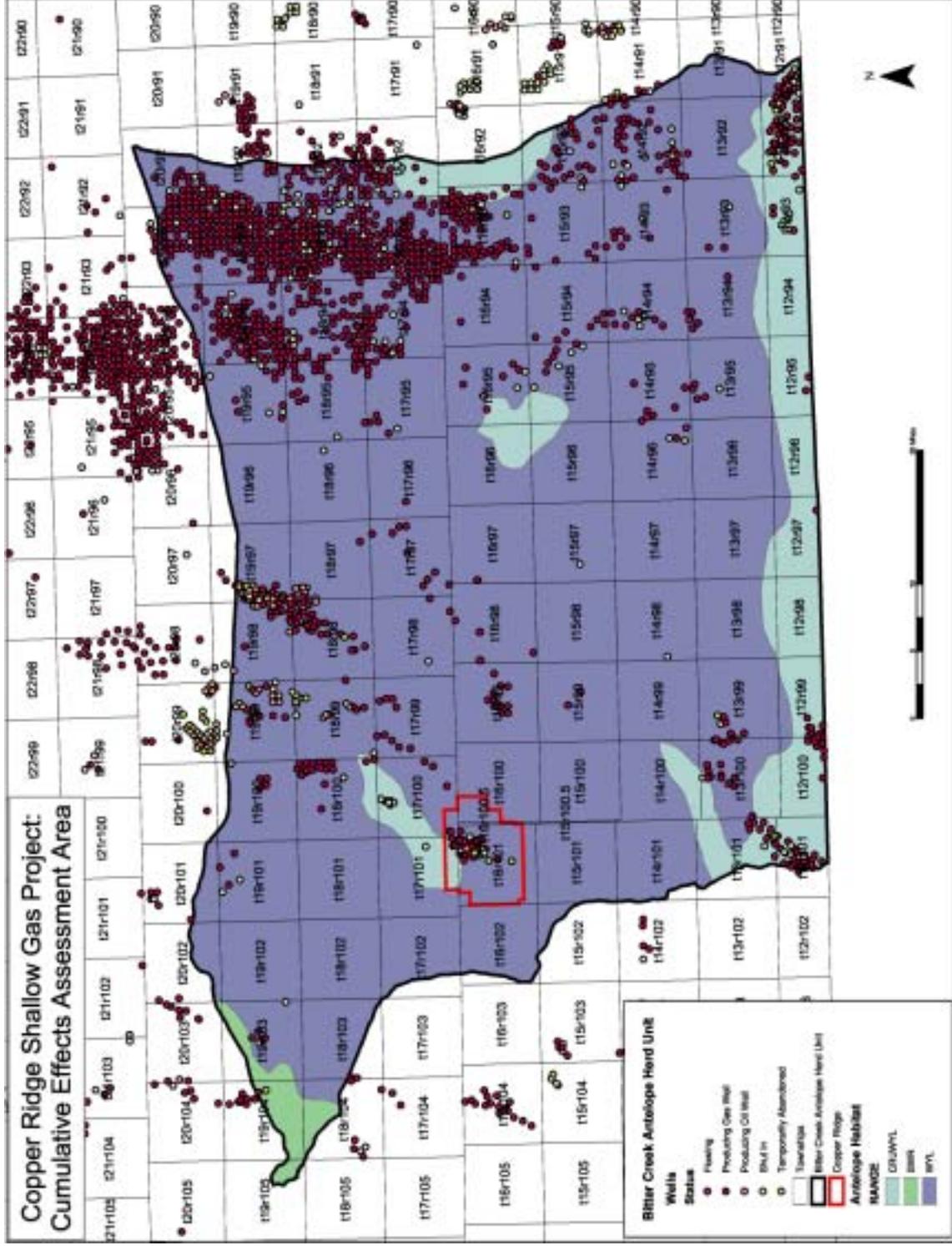


Figure 5-8. Cumulative Effects Assessment Area – Antelope.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

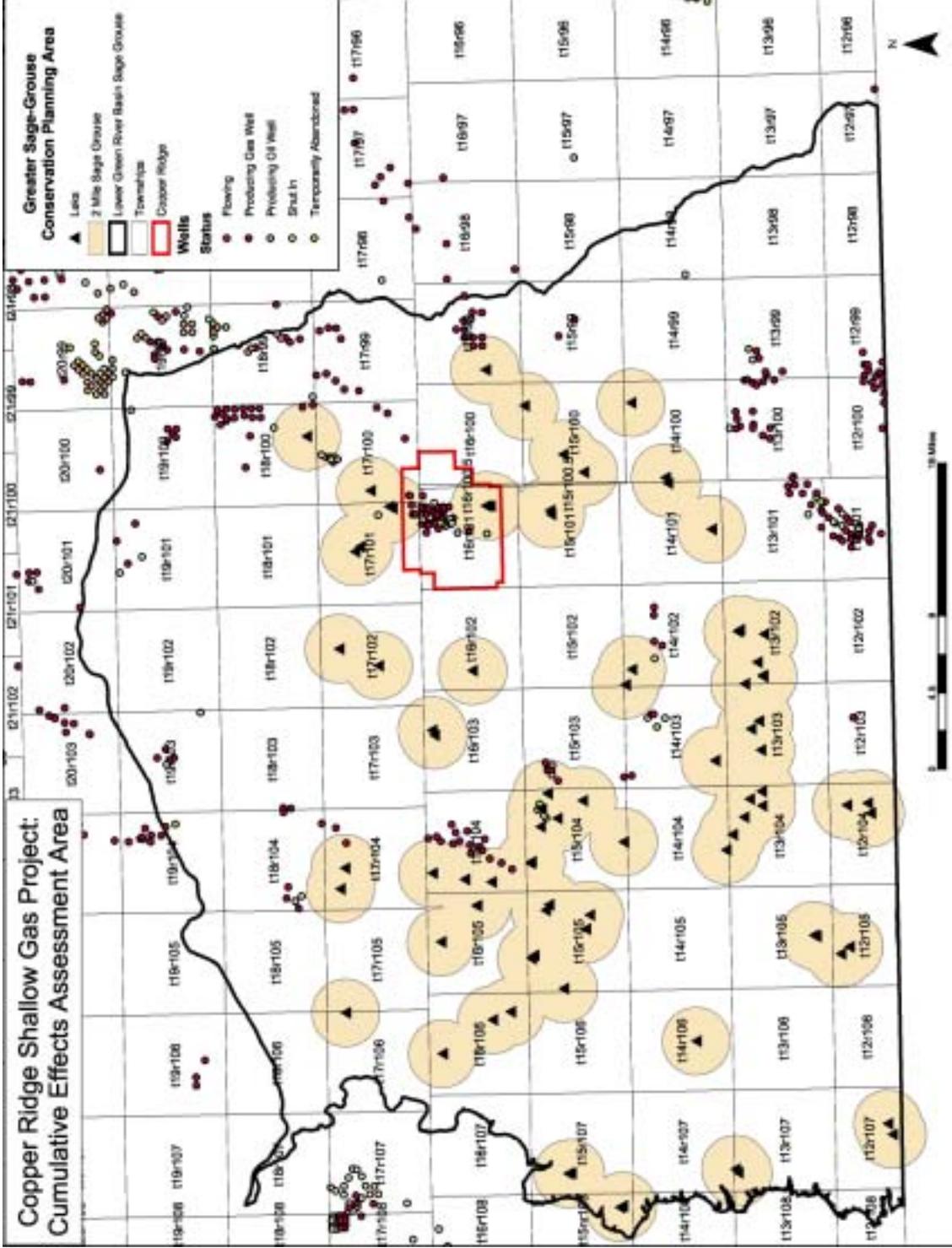


Figure 5-9. Cumulative Effects Assessment Area – Sage Grouse.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

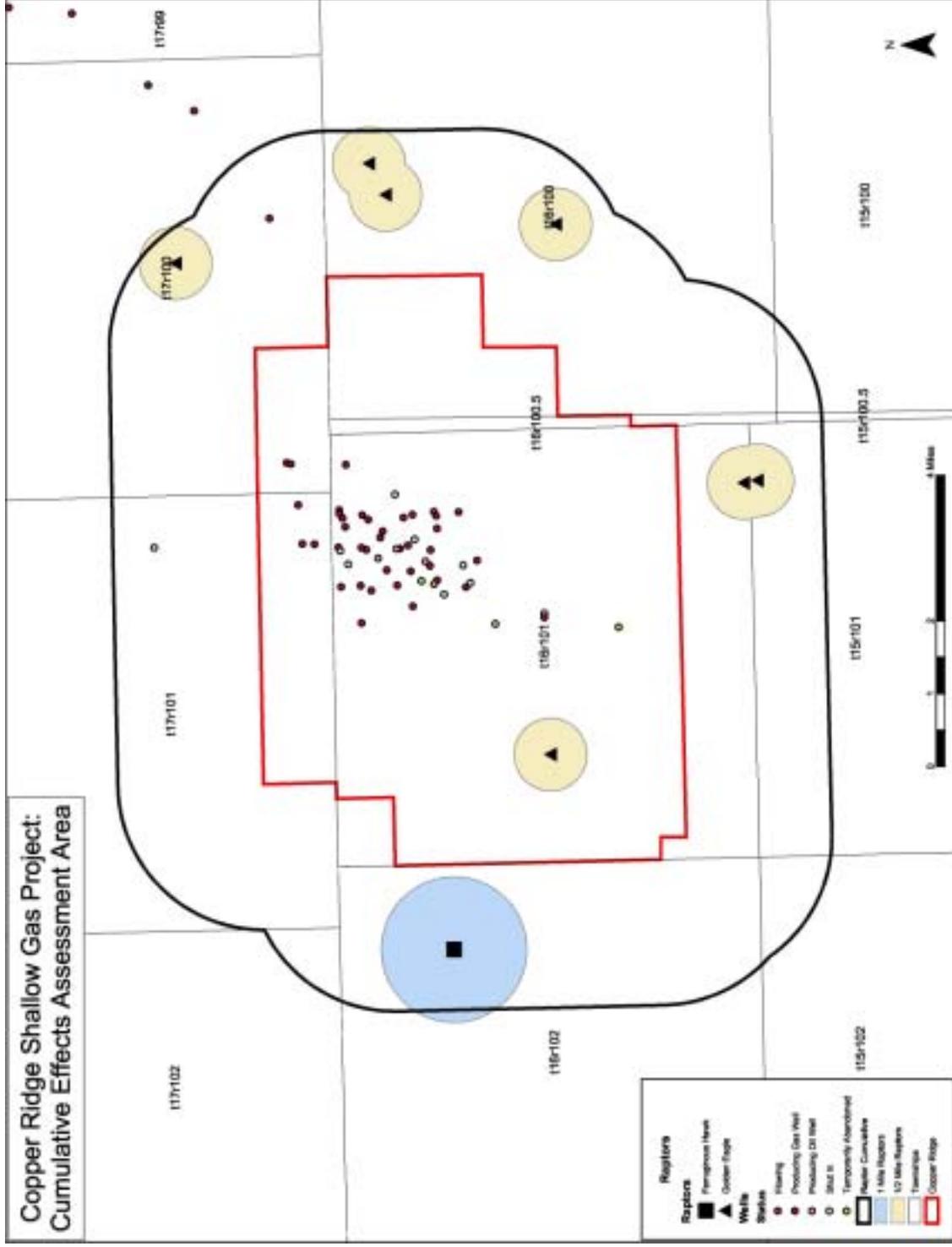


Figure 5-10. Cumulative Effects Assessment Area – Raptors.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

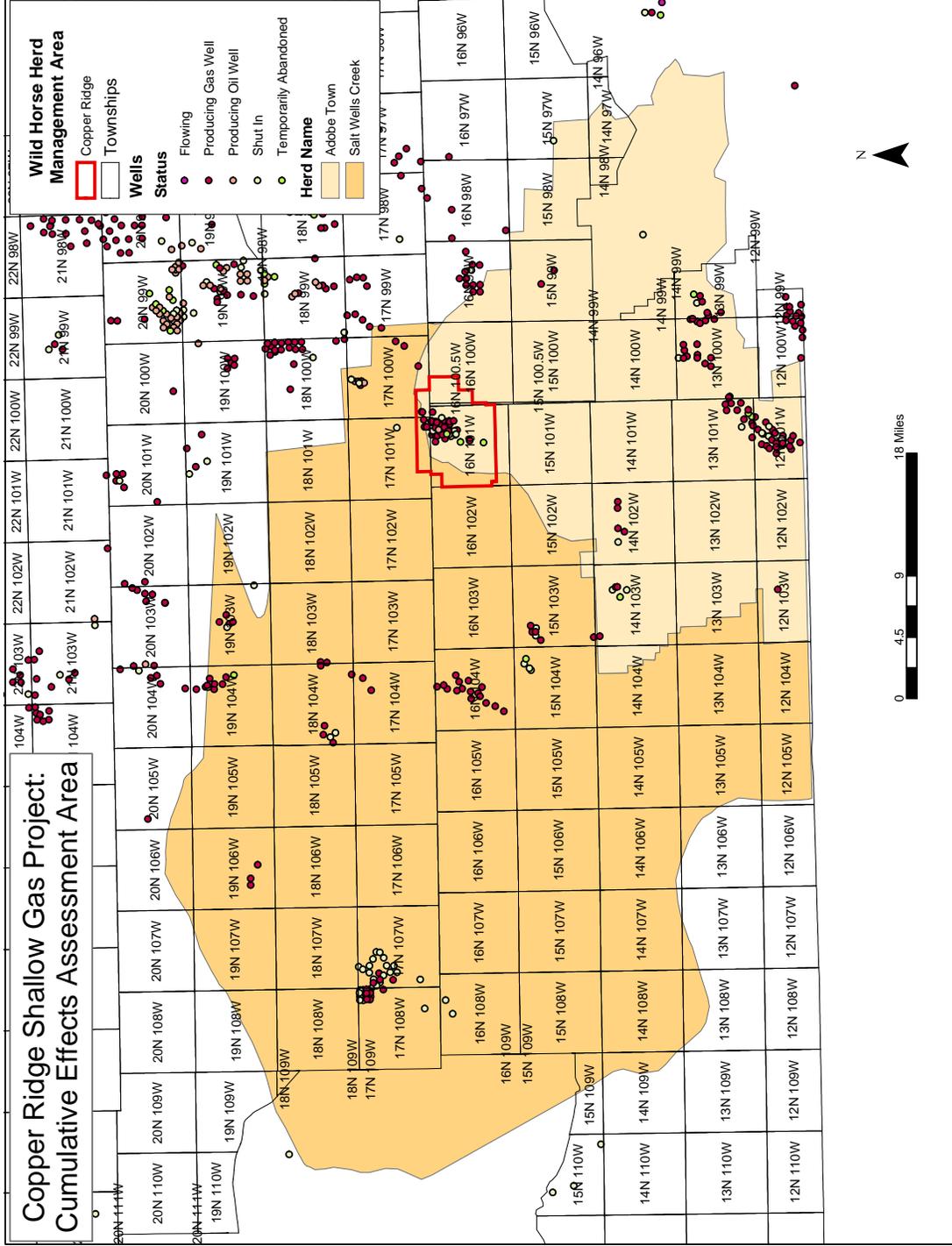


Figure 5-11. Cumulative Effects Assessment Area – Wild Horses.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

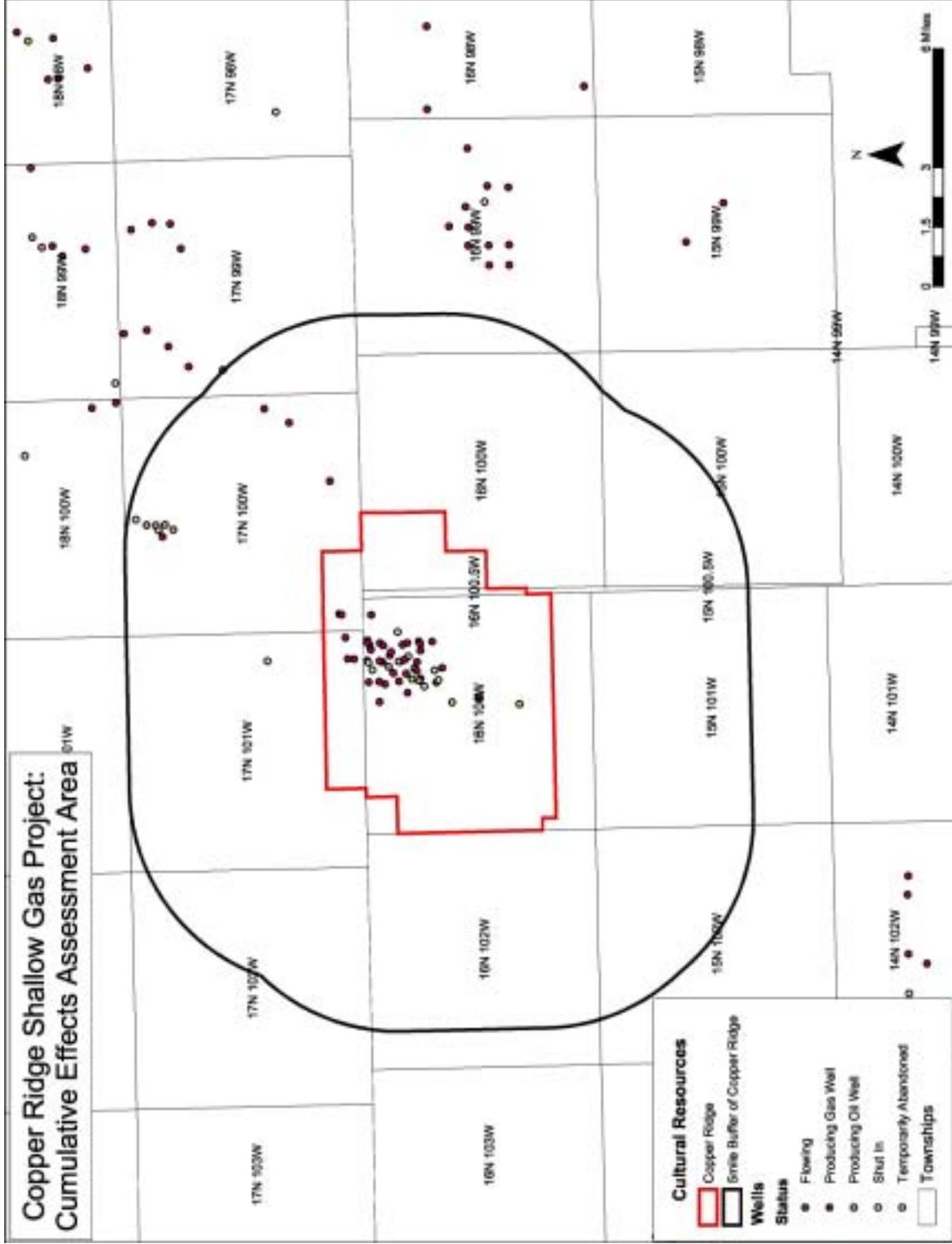


Figure 5-12. Cumulative Effects Assessment Area – Cultural Resources.

CHAPTER 5: CUMULATIVE IMPACTS ANALYSIS

5.3.14 Health and Safety

Cumulative health and safety impacts would be limited to those associated with the proposed drilling proposal and existing grazing and recreation activities. Occasional traffic and activity associated with oil and gas exploration activities would generate small increases in risks to project workers and the public. Cumulative impacts to health and safety conditions are anticipated to be similar to those described for the Proposed Action.

5.3.15 Noise

Noise would result from on-going construction, drilling, and production operations during the life of the project. Increased traffic on existing transportation system roads within the project area would occur, thus adding to existing traffic noise. Given the current and anticipated traffic volumes and dispersed nature of traffic and operations within the CRPA, the projected additions to cumulative, traffic-related noise impacts would be minimal. Use of best available technology requirements for compressors and other equipment would help limit the level of noise.

Based on analysis of the cumulative effects for the identified areas by resource and considering that existing, proposed, and foreseeable actions would result in the disturbance of no more than 2.5% of any one area assessed, the proposed action would not result in considerable degradation to the resource.