

**ADDENDUM to**

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**Specialist Report 2.0  
Roadless and Eligible Wild and Scenic Rivers**

**Oil and Gas Leasing EIS  
on Lands Administered by the  
Dixie National Forest**

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## 1.0 INTRODUCTION

This addendum updates Specialist Report 2.0: Roadless and Eligible Wild and Scenic Rivers, which informed the DEIS. This addendum provides the supplemental information necessary to inform the FEIS and make a decision. The specific purposes of this supplement are to:

1. Provide an overview of changes between the Draft and Final EIS (**Section 2.0**)
2. Highlight the changes since the DEIS that were made specifically to protect Roadless and Eligible Wild and Scenic Rivers or that are otherwise relevant to Specialist Report 2.0 (**Section 3.0**)

## 2.0 CHANGES BETWEEN DRAFT AND FINAL EIS

A number of changes were made to the DEIS in preparing the FEIS. These changes were primarily minor edits, corrections, and updates, and are reflected in the FEIS. Chapter 7 was added to the FEIS and contains an analysis of the public comments received on the DEIS and responses from the Dixie National Forest. The public involvement process since the DEIS is described in detail in Chapter 7, and summarized in Section 1.9.1 of the FEIS.

A Supplemental Information Report (SIR) was issued in January 2009 to address comments on the DEIS from agencies and the public concerning air resources and climate change. Other changes (i.e., not related to air and climate change) were not substantial changes to the proposed action, or significant new circumstances bearing on the proposed action (following 40 CFR Part 1502.9) that would require a supplemental DEIS. These changes are summarized in the following sections.

### 2.1 Revised Leasing Options

Several changes were made to the action alternatives, and specifically leasing options, in response to public comments on the DEIS. Other changes to leasing options reflect Forest or other Agency decisions made since the DEIS that have bearing on the resources analyzed. **Table 1** summarizes the changes to leasing options since the DEIS.

**Table 1** Changes to leasing options since the DEIS reflected in the new GIS model.

Resource	DEIS Leasing Option	FEIS Leasing Option	Alternatives Affected
Inventoried Roadless Areas	NSO (mod*)	NSO	C, D1, and E1
SIO Unassigned	LN	CSU	B, C, D, and E
NPS Protective Measure (new)	n/a	NL	B
	n/a	NSO	C
ROS Primitive	NL	NSO	C
Sage-Grouse Leaks	1-mile buffer	2-mile buffer	B and C
Fisheries Habitat	300-foot buffer	500-foot buffer	C
Boreal Toad Habitat (new)	n/a	Added to "Forest Service-Sensitive Species and Suitable Habitat"	A-E
Desert Tortoise Habitat	various	No suitable habitat determination	A-E
Desert Tortoise Critical Habitat	various	No suitable habitat	A-E

		determination	
Lava Fields over Sensitive Aquifers	NSO	NL	B and C
Class I Airsheds – 60 km buffer (new)	n/a	CSU	A-E
Iron Town Historic District	various	No acres on Dixie National Forest	A-E

\*Actual leasing option CSU but called a “modified NSO.”

## 2.2 New GIS Model

The GIS model was re-run to incorporate the changes made to leasing options and the addition of new resources in the FEIS. The new model output, or the number of acres under each leasing option across the Forest, and revised baseline acres where appropriate, is reflected in each resource section in the FEIS. Regarding these specialist report updates (i.e., addendums), individual number replacements in the text that reflect the new model output for the FEIS are not listed in the errata sections. Instead, tables of data, usually replacing a specific table in the DEIS specialist report, are presented in each specialist report addendum to summarize the data changes in the FEIS.

## 2.3 Errata

Errata correct (**Section 2.3.1**) or expand on data previously presented (**Section 2.3.2**), or incorporate new information or decisions since the DEIS (**Section 2.3.3**).

### 2.3.1 Clarifications

Clarifications to the DEIS were made to correct errors or to eliminate confusion. Most were made as responses to public comments on the DEIS.

- Chapter 1
  - Section 1.5.2, Lands Not Legally Available for Leasing, clarification to language describing Utah Wilderness Act of 1984.
  - Section 1.5.2, Lands Not Legally Available for Leasing, clarification to language describing Split-estate parcels.
  - Section 1.8.2, 2001 Roadless Area Conservation Rule and Legal Activity, clarification to how Roadless Areas on the Dixie are officially identified.
- Chapter 3
  - Section 3.5.4, Aquatic Species and Habitat, clarification to which waterbodies on the Dixie are Blue Ribbon Fisheries, following a memo from the Blue Ribbon Fisheries Advisory Council dated 26 March 2006.
  - Section 3.6.2.3, Candidate Species, GIS error and clarification on acres of greater sage-grouse brood-rearing habitat within the Dixie.
- Chapter 4
  - All Sections, all effects determinations under NL were changed to “No Effect” (from “negligible”).
  - Section 4.6.4, Impacts of Connected Actions by Leasing Option, reducing impact adversity determinations for Utah prairie dog, greater sage-grouse, and pygmy rabbit.
  - Sections 4.6.4, 4.6.5, 4.9.4, and 4.9.5, Impacts of Connected Actions by Leasing Option and by Alternative: Reduced impact adversity determinations for pygmy rabbit, sensitive bats, sensitive raptors, big game, and marginally unstable slopes (soils) under CSU for some of the action alternatives due to misunderstanding (by the consultant) of the application of resource-specific CSUs.

- Section 4.6.4, Impacts of Connected Actions by Leasing Option, road density was clarified as Open Motorized Road Density (OMRD).
- Section 4.7.4, Impacts of Connected Actions by Leasing Option, clarification added to lava fields over sensitive aquifer impacts regarding the BLM Onshore Oil and Gas Order requirement for well casing.
- Section 4.12.2.4 and 4.12.2.5, Class I Cumulative Impact Analysis and Visibility and Deposition Analysis, clarifications added (since SIR) regarding the need for additional air quality analyses for proposed projects and the criteria under which further analyses are required.
- Section 4.12.2.7 (new), Direct Ozone Impacts, this section was added to clarify that ozone impacts are discussed in the cumulative effects section of Air Resources (5.12.3.1).
- Section 4.17, Forest Plan Consistency Determination, assessments of compliance with the Forest Plan in the DEIS were eliminated due to the Forest Plan amendment that will be implemented to reflect the stipulations needed for resource protection.
- Chapter 5
  - Section 5.6.2, Past, Present, and Reasonably Foreseeable Future Actions, cumulative effects discussion regarding grazing effects to Utah prairie dog and greater sage-grouse expanded to include more of the scientific information available.

### **2.3.2 Expanded Analyses**

Expanded analyses were made as a result of the comments received on the DEIS. Apart from the SIR, which presented a new analysis on Climate Change and other aspects of Air Resources not in the DEIS (e.g., ozone), the main areas with information added were night skies (Visual Resources, 3.2 and 4.2), unroaded/undeveloped areas (IRAs/WSRs, 3.3 and 4.3), and greater sage-grouse (Special Status Species, 3.6 and 4.6). In the case of greater sage-grouse, impact determinations were re-assessed for alternatives B-E. Scientific evidence or Agency direction not previously considered was added to these discussions in response to public comments on the DEIS from government agencies and environmental groups.

The Air Resources analysis expanded upon in the SIR was further expanded in response to public comment on the SIR. Areas with new information include NAAQS for nitrogen oxides and ozone, secondary PM<sub>2.5</sub> analysis, updated ozone monitoring data from Zion NP, an expanded ozone analysis based on the UBAQS, and additional information on the impacts to sagebrush habitat from climate change.

### **2.3.3 New information or Agency direction (since 2008)**

The following decisions, regulations, or information were incorporated in the FEIS where applicable:

- Omnibus Public Land Management Act 2009
- Memorandums 1042-154 (2009) and 1042-155 (2010) (RACR)
- Wild and Scenic Rivers Suitability Study (2008)
- Forest Service Strategic Plan (2007-2012)
- National Visitor Use Monitoring Study (2010)
- Motorized Travel Plan (2009)
- Dixie National Forest Annual Monitoring Reports (2008 and 2009)

- Dixie National Forest Aquatic Monitoring Amendment (2010)
- Conservation Agreements for southern leatherside (UDWR 2010)
- New BLM RFPs – Cedar City and Richfield Field Offices (both 2008)
- Alton Coal Development update
- Updated R4 TESP list (2011)
- New definition of Sensitive Fisheries Habitat on the Dixie (=occupied *and suitable*; 2009)
- Updated occurrence and habitat data for TES species on the Dixie (2008-2010)
- Biological Opinion from USFWS (2011), including Lease Notices
- USFS SOPA (since 1st quarter 2011; updates to Foreseeable Future Actions)
- BLM IM No. UT 2010-055 (Protection of Ground Water Associated with Oil and Gas Leasing, Exploration, and Development – Utah BLM)

### 3.0 CHANGES TO IRAS AND WSRs

#### 3.1 Revised Leasing Options and New Model

The primary modification to IRA/WSR resources between the DEIS and FEIS was the elimination of the “administrative” CSU being used to cover IRAs under the current Roadless Rule of 2001, and replacement of the administrative CSU with a NSO. NSO in IRAs was agreed upon following public comment and confusion over the administrative CSU that covered IRAs (for the purpose of upholding the Roadless Rule) in the DEIS. Although the administrative CSU was basically an NSO that prohibited mechanical construction or reconstruction of roads, it was determined to be confusing to the public. In the FEIS, NSO was determined to be the best option to preserve roadless and wilderness characteristics and the Forest’s ability to describe effects to IRAs under the intent of the Roadless Rule.

The following changes were made to the FEIS to reflect this decision:

- Section 2.5.4, last paragraph: Removed last sentence that begins with “In actuality”.
- Section 2.5.4.1 under CSU, first paragraph: Removed last four sentences, starting with “An agency-wide CSU...”.

Output of the new GIS model as pertains to IRAs/WSRs is shown in **Table 2.5-4**.

**Table 2.5-4 Acreage of Resource Components under each Leasing Stipulation by Alternative**

Resource Component	Alt <sup>1</sup>	Leasing Option					Total Acres
		NA	NL	NSO	CSU/TL	SLT	
Inventoried Roadless Areas	A	4,637	565,922				570,559
	B	4,637	565,922				570,559
	C	4,637	22,040	543,883			570,559
	D1	4,637		565,922			570,559
	D2	4,637		41,616	524,306		570,559
	E1	4,637		565,922			570,559
	E2	4,637					565,922
Unroaded-Undeveloped	A	88,327	815,102				903,429

<b>Areas<sup>2</sup></b>	<b>B</b>	88,327	686,025	109,479	19,598		903,429
	<b>C</b>	88,327	23,364	740,442	51,297		903,429
	<b>D1</b>	88,327		542,192	272,466	444	903,429
	<b>D2</b>	88,327		55,319	759,339	444	903,429
	<b>E1</b>	88,327		526,802		288,300	903,429
	<b>E2</b>	88,327				815,102	903,429
<b>Suitable Wild and Scenic Rivers</b>	<b>A</b>	5,733	279				6,012
	<b>B</b>	5,733	279				6,012
	<b>C</b>	5,733	7	273			6,012
	<b>D1</b>	5,733		7	273		6,012
	<b>D2</b>	5,733		7	273		6,012
	<b>E1</b>	5,733				279	6,012
	<b>E2</b>	5,733				279	6,012

<sup>1</sup> The dual analyses for Alternatives D and E represent a range of alternatives with or without application of the 2001 Roadless Area Conservation Rule to IRAs. Small discrepancies in the acreage presented for each alternative are due to the fact that the GIS database has limitations when applied over an extremely large area that result in an inability to calculate acreages that match exactly between alternatives.

<sup>2</sup> Those areas identified on the 2005 Draft Inventory Map of Unroaded-Undeveloped areas (AKA areas of wilderness potential).

### 3.2 Errata

Errata specific to Specialist Report 2.0 expand on or correct data previously presented, or incorporate new information or decisions since the DEIS. Some changes, clarification and updates to resource-specific data and analysis were made as a result of the comments received on the DEIS. The errata below update the original Specialist Report.

- WSR Suitability Study 2008: East Fork Boulder Creek and Moody Wash determined not suitable for consideration as Wild and Scenic Rivers; Removal of East Fork Boulder Creek and Moody Wash from EIS (**Section 2.1.2; 2.4.2**; See **REVISED Figure 2.4-1** at the end of this addendum). Discussions of WSR “eligibility” were eliminated and replaced with “suitability” where appropriate.

Replace **Section 2.1.2** with:

In November 2008, the Forest Service issued a Record of Decision for the Wild and Scenic River Suitability Study for National Forest System Lands in Utah. Out of 86 eligible river segments on National Forests in Utah that were found eligible for consideration for Wild and Scenic Rivers designation during forest planning efforts, ten rivers were found suitable for designation. The Dixie National Forest had six eligible segments and four of these segments were found suitable for inclusion in the National Wild and Scenic Rivers System. If a river was not found suitable, but previously had been found eligible, it is no longer eligible after the suitability decision. These segments are discussed in **Section 2.4.2**.

Replace **last four paragraphs** of **Section 2.4.2** with:

The Forest Service evaluated all rivers and streams on the Dixie National Forest

to determine which river segments meet eligibility criteria for inclusion in the National Wild and Scenic Rivers System. Segments of six different streams on the Dixie National Forest were determined to be eligible for inclusion. Four of these river segments were then found suitable for inclusion into the National Wild and Scenic Rivers System (**Table 2.4-2**). A summary of the characteristics of each suitable stream segment is presented below. The location of the streams is shown in **Figure 2.4-1**.

**Table 2.4-2 Suitable Wild and Scenic Rivers on the Dixie National Forest**

River	Classification	Segment Length (miles)	Acres within Buffer (at least ½-mile wide)
<b>Cedar City RD</b>			
North Fork of the Virgin River	Scenic	0.7	279
<b>Escalante RD</b>			
Death Hollow Creek	Wild	9.6	2,801
Mamie Creek	Wild	2.0	697
Pine Creek	Wild	7.8	2,234

Management guidelines in Section 10(a) of the Wild and Scenic Rivers Act dictates that designated Wild and Scenic Rivers should be administered in a manner that will protect and enhance the values that caused them to be designated. Specific direction for oil and gas development in Section 9 of the Act prohibits mining claims and mineral leases within ¼ mile of a designated Wild and Scenic River (¼ mile measured from each bank, for a total width of at least ½ mile around each stream). However, these management guidelines only apply to designated Wild and Scenic Rivers, or to legislatively mandated study rivers (defined in Section 5(a) of the Wild and Scenic Rivers Act). These guidelines do not apply directly to river segments determined to be eligible or suitable by the Forest Service under Section 5(d) of the Act. Protection for those river segments identified as suitable is provided through a forest plan amendment at II-48a (ROD for Wild and Scenic River Suitability Study, Nov 2008) and Forest Service Handbook 1909.12 at chapter 80, section 82.

The guidelines state that protection of Forest Service identified rivers is derived from existing authorities such as the Clean Water Act, the Endangered Species Act, the Archeological Resources Protection Act, etc. Furthermore, the guidelines state that projects and activities on National Forest System Lands within the river corridor (within ¼ mile) of an eligible or suitable river must be consistent with the following guidelines:

- The free-flowing character of the identified river is not modified
- Outstandingly remarkable values of the identified river area are protected
- Classification is maintained as inventoried unless a suitability study (a decision) is completed that recommends management at a less restrictive classification (such as from wild to scenic or scenic to recreational)

Regarding oil and gas development, Section 82.51 of USFS (2006a) states, "Leases, licenses, and permits under mineral leasing laws would be subject to conditions necessary to protect the values in the event it (a suitable Wild and

Scenic River) is subsequently included in the National System.” In accordance with this direction and to protect the suitability of these streams, a ¼-mile buffer measured out from either streambank is applied to suitable streams in this EIS. The area encompassed by the buffer around suitable streams is specified in **Table 2.4-2**.

Replace **Section 2.5.2.2** with:

*Post-leasing activities could degrade the values of eligible Wild and Scenic Rivers and could make these areas ineligible for future inclusion in the National Wild and Scenic River System.*

The construction and operation of oil and gas facilities such as power lines, drill pads, drill rigs, roads, and production facilities could alter the “outstandingly remarkable” values identified for the four different river segments that have been found suitable for inclusion in the national wild and scenic river system. Further, the construction of roads associated with oil and gas activity within the corridor of suitable streams could impact the tentative classification of the river. Chapter 80, Section 82.5 of Forest Service Handbook 1909.12 (USFS 2006a) specifies that any projects or activities within the river corridor of a suitable or eligible river must protect the “outstandingly remarkable” values and maintain the tentative classification until a decision on suitability.

➤ Clarification on identification of Roadless Areas (Section 2.1.1)

Add to **last paragraph after first sentence** in **Section 2.1.1**:

IRAs are those areas identified in a set of inventoried roadless area maps, contained in Forest Service Roadless Area Conservation, Final Environmental Impact Statement, Volume 2, dated November 2000, which are held at the National headquarters office of the Forest Service, or any subsequent update or revision of those maps.

➤ Addition of Memorandums 1042-154 (2009) and 1042-155 (2010) (Section 2.1.1)

Add **before last paragraph** in **Section 2.1.1**:

On May 28, 2009, Secretary of Agriculture Tom Vilsack issued Memorandum 1042-154 which reserves “to the Secretary the authority to approve or disapprove road construction or reconstruction and the cutting, sale, or removal of timber in those areas identified in the set of inventoried roadless area maps contained in Forest Service Roadless Area Conservation, Final Environmental Impact Statement, Volume 2, dated November 2000.” Approximately, 49.2 million acres are affected. The Secretary has since re-delegated some authorities back to the Forest Service. On May 29, 2010, the Secretary issued a new Memorandum 1042-155. It is essentially the same as the previous memorandum with the re-delegations, but includes the re-delegation to the Under Secretary Natural Resources and Environment for decisions covered by the 1872 Mining Laws. The new memorandum expires within one year, but can be re-issued.

➤ Unroaded/Undeveloped Areas added to IRA discussion, including baseline (**Sections 2.4.2,**

2.4.3.2, 2.4.4.2, 2.4.5.2, and 2.5.6.2), measurement indicators (**Section 2.5.3.1**), impacts (**Section 2.5.4**), and cumulative impacts (**Section 2.5.5.2**) Note that there are no leasing options assigned to unroaded/undeveloped areas and impacts to these unroaded/undeveloped areas are generally the same as for IRAs under each leasing option. For this reason, the words “and/or unroaded/undeveloped areas” were added to most mentions of “IRAs” throughout the general impacts section, where appropriate. Impacts by alternative were discussed explicitly for unroaded/undeveloped areas and are shown below.

Baseline:

Add (new) **Section 2.4.2** (baseline):

**2.4.2 Unroaded-Undeveloped Areas**

Unroaded-Undeveloped areas (AKA areas of wilderness potential) are all those classified as such within the Dixie National Forest GIS database and identified on the 2005 Draft Inventory map of Unroaded / Undeveloped Areas. The inventory of unroaded-undeveloped areas was conducted jointly with the Fishlake National Forest for their Forest Plan Revisions that are currently suspended, and was based on direction in the 2004 Intermountain Region Planning Desk Guide: A Protocol for Identifying and Evaluating Areas for Potential Wilderness” (cited in USFS 2009a). The purpose was not to identify roadless areas for roadless management, but to strictly use the identification and evaluation process to meet our obligations to consider the wilderness potential of still undeveloped lands. Unroaded-undeveloped areas identified according to this protocol only included classified Forest-system roads as of 2004, and thus still contained numerous “constructed” (unclassified) roads and trails, as well as timbered areas, powerlines, and other infrastructure. After the inventory of unroaded-undeveloped areas, the Fishlake and Dixie National Forests began an evaluation of the suitability of each unroaded-undeveloped area for wilderness recommendation. The purpose of this evaluation was to determine which areas met the definition of wilderness found in the 1964 Wilderness Act, and as such “meet the criteria for wilderness suitability and possibly recommendation to Congress for wilderness study or designation.” (Forest Service Handbook 1909.12: Chapter 70). Unroaded-undeveloped areas suitable for wilderness recommendation are those that meet the Wilderness Attributes listed in Section 3.3.2.2.

About sixty (59%) percent of the total unroaded-undeveloped area on the Dixie National Forest overlaps with IRAs. **Table 2** lists the unroaded-undeveloped areas in each Ranger District, their size, and the extent of overlap with IRAs.

**Table 2 Unroaded-Undeveloped Areas on the Dixie National Forest, by Ranger District**

Ranger District	Name	Total Acres	Acres within IRAs
Pine Valley	Atchinson	24,306	17,617
	Bull Valley	13,372	10,882
	Cave Canyon	8,136	5,660
	Cedar Bench	10,002	8,900
	Cottonwood <sup>1</sup>	8,845	6,752
	Cove Mountain	15,678	15,017

	Kane Mountain	9,632	7,955
	Lost Peak	6,053	4,143
	Moody Wash / Mogotsu	58,978	48,043
	North Hills	24,864	24,483
	Pine Park	31,550	16,367
	Pine Valley Mountain <sup>1</sup>	154,495	57,376
	Stoddard Mountain	14,196	12,981
	<b>TOTAL</b>	<b>380,108</b>	<b>246,578 (65%)</b>
<b>Cedar City</b>	Ashdown Gorge <sup>1</sup>	12,148	0
	Bear Valley Peak	11,379	6,136
	Bunker Creek	12,333	4,448
	Hancock	10,140	9,439
	Lava Beds #1	7,058	6,434
	Lava Beds #2	8,643	7,146
	Little Creek Peak	19,345	0
	Mineral Canyon	13,409	7,238
	Wagon Box	5,671	0
	<b>TOTAL</b>	<b>100,125</b>	<b>40,840 (41%)</b>
<b>Powell</b>	Big Hollow	7,791	0
	Blind Springs	9,917	0
	Casto Bluff	86,408	84,966
	Deep Creek	41,984	39,499
	Fishhook	11,437	11,326
	Horse Valley	14,588	12,760
	Lower Hoodle	10,254	9,398
	Red Canyon North	15,131	9,363
	Red Canyon South	5,597	2,642
	<b>TOTAL</b>	<b>203,106</b>	<b>160,555 (79%)</b>
<b>Escalante</b>	Antimony	20,604	0
	Barker	16,337	9,094
	Birch Creek	6,105	3
	Boulder Top	37,364	22,105
	Box-Death Hollow <sup>1</sup>	32,922	2,886
	Canaan Mountain	7,683	0
	Dry Lake	9,268	0
	Heaps Canyon	6,622	0
	Henderson Canyon	23,113	18,613
	Hog Ranch	5,924	3,761
	Jake Hollow	11,812	8,891
	Long Neck	12,711	10,903
	Pacer Lake	16,328	0
	Pretty Tree Bench	12,021	5,702
	Shakespeare Point	1,109	1,108
	<b>TOTAL</b>	<b>219,923</b>	<b>83,067 (38%)</b>
<b>Forest Total</b>		<b>903,262</b>	<b>531,040 (59%)</b>

<sup>1</sup> Partially within a Wilderness Area (see Table 1.5-1).

There is no policy, law, or directive guiding the management of unroaded-undeveloped areas that lie outside of IRAs or wilderness areas. Currently, the only guidance for these areas is general forest or management area direction and 2010 Secretary Memo 1042-155 that requires additional review. It is the intent of the Dixie National Forest to manage these unroaded-undeveloped areas for multiple resource benefits while maintaining their undeveloped character to

the extent possible.

Add (new) **Sections 2.4.3.2, 2.4.4.2, 2.4.5.2, and 2.5.6.2** (baseline for each Ranger District):

**2.4.3.2:** There are 13 unroaded-undeveloped areas in the Pine Valley Ranger District, covering 380,108 acres. Sixty-five percent of these areas fall within IRAs. None of these areas are less than 5,000 acres in size.

**2.4.4.2:** There are nine unroaded-undeveloped areas on the Cedar City Ranger District, covering 100,125 acres and none of these areas are less than 5,000 acres in size. Forty-one percent of these areas fall within IRAs. Three unroaded-undeveloped areas: Ashdown Gorge (12,148 acres), Little Creek Peak (19,345 acres), and Wagon Box (5,671 acres) are completely outside IRAs.

**2.4.5.2:** There are nine unroaded-undeveloped areas in the Powell Ranger District, totaling 203,106 acres and none of these areas are less than 5,000 acres in size. Seventy-nine percent of these areas fall within IRAs. Two unroaded-undeveloped areas: Big Hollow (7,791 acres) and Blind Springs (9,917 acres) are completely outside IRAs.

**2.5.6.2:** There are 15 unroaded-undeveloped areas on the Escalante Ranger District, totaling 219,923 acres. Only Shakespeare Point is less than 5,000 acres in size. Thirty-eight percent of these areas are within IRAs. Six unroaded-undeveloped areas: Antimony (20,604 acres), Birch Creek (6,105 acres), Canaan Mountain (7,683 acres), Dry Lake (9,268 acres), Heaps Canyon (6,622 acres), and Pacer Lake (16,328 acres) are completely outside IRAs.

Add to last indicator in **Section 2.5.3.1** (Inventoried Roadless Areas): “..or unroaded undeveloped areas.”

Impacts:

Replace first sentence in **Section 4.3.5.1** (Alternative A) under IRAs and Unroaded-Undeveloped Areas with:

No new oil and gas leases would be authorized under Alternative A and there would be no direct or indirect impacts to IRAs, unroaded-undeveloped areas, or suitable Wild and Scenic Rivers as a result of oil and gas leasing activity.

Add to **Section 4.3.5.2** (Alternative B) under IRAs and Unroaded-Undeveloped Areas:

The majority (84 percent) of unroaded-undeveloped areas would be stipulated as No Lease, and in these areas, no impacts to unroaded-undeveloped areas would occur. In the 13 percent of unroaded-undeveloped areas covered by NSO, only seismic activities would be allowed and wilderness attributes (*Measurement Indicator #1*) would be impacted temporarily (described in Section 4.3.4.3). There would be no impacts from roads (*Measurement Indicator #2*) as only seismic activities are allowed under NSO.

Add to **Section 4.3.5.3** (Alternative C) under IRAs and Unroaded-Undeveloped Areas:

Ninety-one percent of unroaded-undeveloped areas that are available for lease are covered by NSO (for other resources, including IRAs) under Alternative C. Only seismic activities would be allowed in these areas and wilderness attributes (*Measurement Indicator #1*) would be impacted temporarily (described in Section 4.3.4.3). More adverse impacts to wilderness attributes from roads (*Measurement Indicator #2*) could occur within “CSU” areas (overall, 9 percent of unroaded-undeveloped areas), under which impacts would be equivalent to SLT because the CSU is for other resources. Some unroaded-undeveloped areas would be disproportionately affected by having more area open under CSU for other resources (thus, effectively SLT for unroaded-undeveloped areas) to oil and gas activities under Alternative C. These areas include Antimony (32 percent or 6,744 acres CSU; Escalante Ranger District), Dry Lake (20 percent or 1,911 acres CSU; Escalante Ranger District), Little Creek Peak (25 percent or 4,780 acres CSU; Cedar City Ranger District), Pacer Lake (34 percent or 5,561 acres CSU; Escalante Ranger District), and Wagon Box (18 percent or 1,047 acres CSU; Cedar City Ranger District). Impacts within these areas would be as described in Section 4.3.4.6. Impacts from oil and gas activities discussed in Section 4.3.4.6 within Dry Lake and Wagon Box would be more adverse (moderate or major) due to their small size (<10,000 acres). Impacts from oil and gas activities discussed in Section 4.3.4.6 within the following Unroaded/Undeveloped areas would be more adverse due to their high potential for wilderness suitability: Cottonwood (Pine Valley Ranger District); Lava Beds #2, Little Creek Peak, and Bear Valley Peak (Cedar City Ranger District); Red Canyon South and Deep Creek (Powell Ranger District), Birch Creek, Pretty Tree Bench, Boulder Top, and Long Neck (Escalante Ranger District).

Add to **Section 4.3.5.4** (Alternative D1) under IRAs and Unroaded-Undeveloped Areas:

Sixty-seven percent of unroaded-undeveloped areas (that are available for lease) is covered by NSO under Alternative D1 (i.e., most of the unroaded-undeveloped areas that are within IRAs). Only seismic activities would be allowed in these areas and wilderness attributes (*Measurement Indicator #1*) would be impacted temporarily (described in Section 4.3.4.3). Thirty-three percent of AWP (that is available for lease) is covered by CSU (for other resources) under Alternative D1, and 32 out of 46 unroaded-undeveloped areas are covered by at least 15 percent CSU. Impacts in these areas would be as described under SLT (Section 4.3.4.6) because the CSU is for other resources and would not protect the unroaded-undeveloped area specifically. Impacts would be more adverse (moderate or major) in the smaller unroaded-undeveloped areas and in those with higher potential for wilderness designation. These smaller unroaded-undeveloped areas (<10,000 acres) include Cave Canyon, Cottonwood, Kane Mountain, and Lost Peak (Pine Valley Ranger District); Wagon Box (Cedar City Ranger District); Big Hollow, Blind Springs, and Red Canyon South (Powell Ranger District); and Birch Creek, Canaan Mountain, Dry Lake, Heaps Canyon, and Hog Ranch (Escalante Ranger District). Those with higher potential for wilderness designation include: Pine Valley Mountain and Cottonwood (Pine Valley Ranger District); Ashdown

Gorge, Lava Beds #1 and #2, Little Creek Peak, and Bear Valley Peak (Cedar City Ranger District); Red Canyon South and Deep Creek (Powell Ranger District); and Henderson Canyon, Birch Creek, Box-Death Hollow, Pretty Tree Bench, Shakespeare Point, Boulder Top, and Long Neck (Escalante Ranger District).

Add to **Section 4.3.5.5** (Alternative D2) under IRAs and Unroaded-Undeveloped Areas:

The majority of unroaded-undeveloped areas (93 percent) would be CSU under Alternative D2. Impacts to unroaded-undeveloped areas would be as described under SLT (Section 4.3.4.6) because the CSU is designed to protect other resources (i.e., not the unroaded-undeveloped areas).

Add to **Section 4.3.5.6** (Alternative E1) under IRAs and Unroaded-Undeveloped Areas:

Impacts to unroaded-undeveloped areas that overlap with IRAs would be as described under Alternative C for IRAs. Impacts for the remainder of unroaded-undeveloped areas (about 40 percent; under SLT) would be very similar to those described for Alternative D1 because CSU impacts are equivalent to SLT for unroaded-undeveloped areas. , There would be more acres under SLT than under CSU for Alternative E1 as compared to Alternative D1; however, impacts would be the same as described for D1.

Replace **Section 4.3.5.7** (Alternative E2) under IRAs and Unroaded-Undeveloped Areas:

All acres of IRAs and unroaded-undeveloped areas would be available under SLT and impacts would be as described for SLT in Section 4.3.4.6.

- Minor revisions to baseline acres (IRAs).

In **Table 2.4-1**:

Cove Mountain = 16,634 acres  
Pine Valley Mountains = 57,683 acres  
Bear Valley Peak = 7,419 acres  
Deer Creek = 39,784 acres  
Boulder Mtn/Boulder Top/Deer Lake = 14,888 acres  
Box-Death Hollow = 3,171 acres  
Long Neck Mesa/Steep Creek/Oak Creek = 11,139 acres

- Clarification on final disposition of roads created for oil and gas use to be determined at site-specific NEPA stage.

Add to last sentence of 2<sup>nd</sup> paragraph in **Section 2.5.4**:

“, because the final disposition of each road created for oil and gas use would be decided at the site-specific NEPA stage.”

- Cumulative Effects: Removal of misleading language in Past, Present, Future Actions re WSRs and IRAs and focus of cumulative effects discussion; removal of Grazing discussion due to removal of East Fork Boulder Creek

Replace first paragraph in **Section 5.3.2** with:

As shown in Table 5.3-1, approximately 95 percent of the CEA is land managed by the Dixie or Fishlake National Forests. Only four percent is private land and most of that is located near developed areas (such as Duck Creek). All suitable Wild and Scenic Rivers are located entirely on the Dixie National Forest. As a result, most of the discussion concerning past, present, and reasonably foreseeable actions will be focused on activities occurring on National Forest System land. Furthermore, the discussion will focus primarily on the following activities: timber harvest and road construction. In limiting the discussion to these activities, it is acknowledged that other types of activities may affect the broad array of roadless characteristics and wilderness attributes that help define IRAs and unroaded-undeveloped areas. However, these activities will primarily be discussed in other sections.

- Cumulative Effects: Removal of misleading language under “Roads” re WSR eligibility

Replace “Roads” section within **Section 5.3.2** with:

As discussed in Section 3.3.2, IRAs were set aside due to the fact that they were generally unfragmented by roads. Unroaded-undeveloped areas are those areas identified on the Dixie National Forest 2005 Inventory of Unroaded / Undeveloped Areas.” According to Dixie National Forest GIS data, both open and administrative roads are present in IRAs and unroaded-undeveloped areas. Projects on the Dixie National Forest and the portion of the Fishlake National Forests within the CEA that would include road construction are listed in Table 5.1-1. The only projects known to involve any road construction or reconstruction within IRAs/unroaded-undeveloped areas are the Mt Dutton Vegetation Management Project on the Powell Ranger District, and the Pockets Vegetation Management project on the Escalante Ranger District. The Mt Dutton project would not involve any new road construction, but would involve maintenance and reconstruction of existing roads. The project would include a 274-acre portion of the Deer Creek IRA. Approximately 40 acres of this same area was previously harvested in 1990 and there is evidence of stumps, slash, skid trails, and landings, as well as three miles of Forest Road #30358 (USFS 2006d). The Pockets Vegetation Management project is only within unroaded – undeveloped areas, and proposes 10.5 miles of temporary road construction.

On the North Fork of the Virgin River, a four-wheel-drive road provides access to private property below the Dixie National Forest Boundary. The only other road access is Forest Service Road #054, which ends 0.8 miles from the river corridor and is the starting point for the Cascade Falls Trail that provides access to a viewpoint at Cascade Falls. No other roads are planned on Forest Service land in the immediate vicinity; however, addition road construction could occur on private land below the Dixie National Forest Boundary.

- Cumulative Effects: Replace **Section 2.5.5.3** with the following:

**Alternative A**

Under Alternative A, no new oil and gas activity would occur and there would be no cumulative effects.

**Alternative B**

Under Alternative B, a NL option would be applied to IRAs and suitable Wild and Scenic Rivers. As a result, oil and gas activity would have no direct effect on these resources. Indirect effects could occur as a result of oil and gas activity on adjacent land. Impacts to unroaded-undeveloped areas would be limited to seismic activities and only minor impacts to wilderness attributes would occur. These effects would be negligible to minor and when combined with the past, present, and reasonable foreseeable actions in the CEA, would not be of a sufficient magnitude to result in cumulative effects.

**Alternative C**

Under Alternative C, direct effects to IRAs and suitable Wild and Scenic Rivers would be limited to seismic exploration by the application of an NSO leasing option (to IRAs), and overlap with NSO for Streams (for suitable Wild and Scenic Rivers). It is not expected that seismic exploration would produce disturbance of a magnitude sufficient to result in cumulative effects. For IRAs, the only portion of the CEA that is expected to be affected by other past, present, or reasonably foreseeable future actions is a small portion of the Deer Creek IRA on the Powell Ranger District. This area has been previously disturbed by a prior timber sale and may be disturbed by another (Mt Dutton Vegetation Treatment Project, see Table 5.1-1). If seismic exploration were to occur in the same area of the Deer Creek IRA, the disturbance would likely be undetectable relative to the disturbance that has occurred and will occur in the future from timber harvest. As a result, there would be no cumulative effects to IRAs under this alternative.

Some unroaded-undeveloped areas that are covered partially by CSU under Alternative C would be affected by connected actions; these areas are listed in Section 4.3.5.3. Site-specific NEPA analysis would determine whether cumulative effects would occur to a specific unroaded-undeveloped area if activities are proposed on a particular lease. In general, connected actions within unroaded-undeveloped areas would not lead to cumulative effects when past, present, and future actions in unroaded-undeveloped areas are considered.

**Alternative D1**

Under Alternative D with NSO in IRAs, oil and gas activity in IRAs would be limited to seismic exploration by the NSO leasing option and there would be no cumulative effects as described for Alternative C. Cumulative effects to unroaded-undeveloped areas would also be as described under Alternative C.

For suitable Wild and Scenic Rivers, up to 273 acres on the North Fork of the Virgin River could be disturbed by any of the activities predicted to occur by the RFDS, including roads, power lines, and pipelines, as limited by CSU. For the North Fork of the Virgin River, its outstandingly remarkable values are in spite of existing development in close proximity to the river. If this were combined with oil and gas activity of any type, it is possible that the stream would no longer be suitable for “Wild” status. This would be a major and long-term cumulative impact, as it would not likely be considered again in the near future.

### **Alternative D2**

Under this alternative, the majority of IRAs and unroaded-undeveloped areas would be available under CSU and oil and gas activity within these areas could include pipelines, power lines, well pads, etc. However, the construction or reconstruction of roads would be prohibited in IRAs and the development of a production field would be precluded by the inability to construct roads. This alternative assumes that timber harvest and road construction could occur at rates similar to the rest of the National Forest System land within the CEA (due to changes in the 2001 Roadless Area Conservation Rule). Under this scenario, any areas of timber harvest would represent a direct loss of roadless acres for the life of the development. If oil and gas activity were to occur on the same IRA/unroaded-undeveloped areas as other road construction or timber harvest, the direct loss of roadless acres would be larger than with either activity alone. This could result in increased fragmentation of these areas with subsequent impacts to the resources described in the roadless characteristics and wilderness attributes (see Section 3.3.2). As the amount of an IRA/unroaded-undeveloped areas that may potentially be impacted by well pads is small and would not bisect the area into smaller segments, the cumulative impacts would be minor. The effects would be short term as the only likely development would be exploratory wells.

For suitable Wild and Scenic Rivers, the CSU leasing option applied under this alternative would prevent degradation of the outstandingly remarkable values. As described for Alternative D1, disturbance under CSU is not expected to be of a magnitude sufficient to result in cumulative effects. However, major and long-term cumulative impacts may result to the North Fork of the Virgin River (see Section 5.3.3.4).

### **Alternative E1**

NSO would limit oil and gas activity in IRAs to seismic exploration and there would be no cumulative effects as described for Alternative C. Cumulative effects to unroaded-undeveloped areas would also be as described under Alternative C.

For suitable Wild and Scenic Rivers, up to 273 acres on the North Fork of the Virgin River could be disturbed by any of the activities predicted to occur by the RFDS, including roads, power lines, and pipelines. The impacts could include the degradation of outstandingly remarkable values and the possible loss of suitability for inclusion in the National Wild and Scenic River System due to the construction of roads.

### **Alternative E2**

Under this alternative, the majority of IRAs and unroaded-undeveloped areas would be available under SLT and oil and gas activity within IRAs/unroaded-undeveloped areas could include all activities predicted by the RFDS. This includes roads, pipelines, power lines, well pads, etc. Further, this alternative assumes that timber harvest and road construction could occur at rates similar to the rest of the National Forest System land within the CEA. Under this scenario, any road construction or timber harvest would represent a direct loss of roadless/unroaded acres for the life of the development. If oil and gas activity were to occur on the same IRA/unroaded-undeveloped area as other road construction or timber harvest, the direct loss of roadless/unroaded acres would be larger than with either activity alone. This could result in increased fragmentation of these areas with subsequent impacts to the resources described in the roadless characteristics and wilderness attributes (see Section 3.3.2). Also, in some cases, particularly with the smaller IRAs/unroaded-undeveloped areas, the fragmentation and

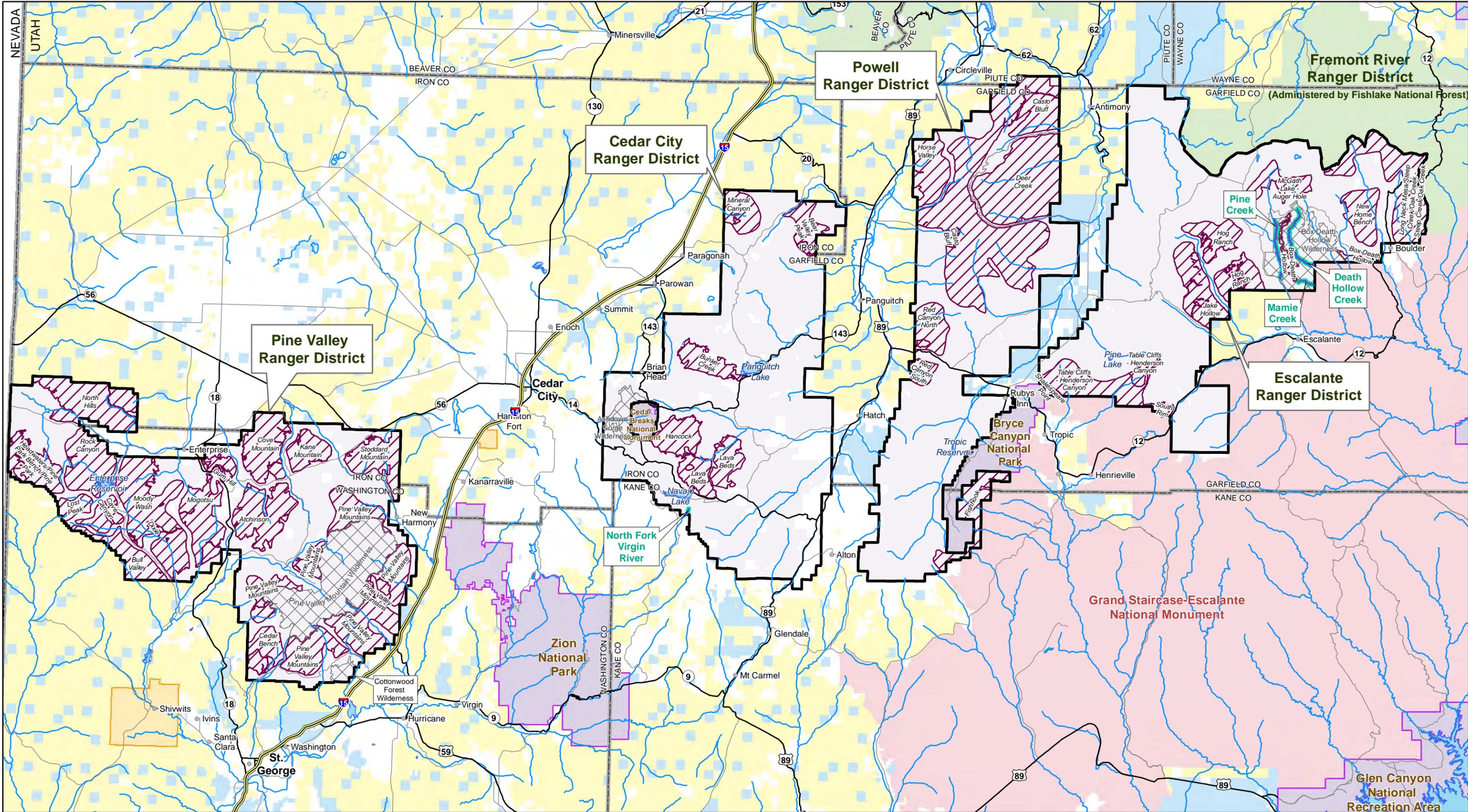
loss of roadless acres may be enough that the area could no longer be managed as an IRA or wilderness, considered as an unroaded-undeveloped area, or simply as a large area of contiguous habitat. These impacts would be minor to moderate if they were to affect only a small portion of a larger IRA/unroaded-undeveloped area; however, the impacts would range as high as major if a large proportion of IRAs/unroaded-undeveloped areas and the unfragmented areas they cover were fragmented by roads and other development. The cumulative effects would be short term for exploratory wells and roads and long term for a production field with its associated roads.

For suitable Wild and Scenic Rivers, all of the streams located outside wilderness areas (i.e., North Fork of the Virgin River) would be available for lease under SLT and the impacts would be the same as described for Alternative E1. However, under this alternative more acres on suitable Wild and Scenic Rivers would be available under SLT and the potential for the impacts described in Alternative E1 to occur is increased.

➤ Add new references:

USFS 2006a. Forest Service Handbook 1909.12 Land Management Planning Handbook. Chapter 80 Wild and Scenic River Evaluation. Washington D.C. January.

USFS 2009a. Specialist Report: Inventoried Roadless Areas and Unroaded and Undeveloped Areas. Motorized Travel Plan, Dixie National Forest. Updated March 2009.



**Oil & Gas Leasing EIS on Lands Administered by the Dixie National Forest**  
**FIGURE 2.4-1**  
**Inventoried Roadless Areas & Suitable Wild & Scenic Rivers**

Horizontal Datum = NAD 83  
 Coordinate System = Zone 12N  
 1:590,000  
 1 in = 9 miles



**Legend**

- Cities
- Freeways
- Highways
- Minor Roads
- Major Streams & Rivers
- Water Bodies
- County Boundaries
- State Boundaries
- National Forest System Lands
  - Dixie National Forest
  - Wilderness Areas
  - Fishlake National Forest
- Other Land Administration
  - Bureau of Land Management
  - GSENM\*\*
  - National Park Service
  - Private
  - State of Utah
  - Tribal
- Wild & Scenic Rivers
- Wild & Scenic River Corridors (0.5-mi wide)
- Inventoried Roadless Areas



Original data was compiled from multiple source data and may not meet the U.S. National Mapping Accuracy Standard of the Office of Management and Budget. For specific dates and/or additional digital information, contact the Forest Supervisor, Dixie National Forest, Cedar City, Utah. This map has no warranties to its contents or accuracy.

\*Not all roads are shown. Only some roads are depicted for orientation purposes.  
 \*\*Grand Staircase-Escalante National Monument. Managed by the Bureau of Land Management.