

# Chapter 3: Affected Environment and Environmental Consequences

## Introduction

This chapter describes general information, location, management direction, and existing conditions for the project area. It also describes the environmental impacts of the alternatives described in Chapter 2. Information in this chapter is based on reports written by various Resource Specialists (Appendix E – List of Preparers). These more detailed reports are kept in the project file located at the Swan Lake Ranger District Office. Analysis in the chapter is the basis for the summary of alternative comparisons given in Chapter 2.

The affected environment and environmental consequences are combined into one chapter for continuity and ease of reading. After providing the location and the Forest Plan management direction, this chapter discusses specific resources and issues.

## Project Area

The Mid Swan Blowdown Salvage Project Area lies in the Swan Valley, extending from Goat Creek on the north to Lion Creek on the south. National Forest System (NFS) lands occupy approximately 4000 acres of the project area (89 percent) and other private landowners own approximately 480 acres (11 percent). Elevation within the project area ranges from 3300 feet to 4140 feet (See Vicinity Map 1-1).

## Definitions

The following definitions should help the reader understand terms describing the analysis areas used to disclose the environmental consequences of implementing the alternatives.

### Project Area

As shown on Vicinity Map 1-1, the project area includes approximately 4480 acres. National Forest System lands occupy 4000 acres of the project area (89 percent) and other private landowners own about 480 acres (11 percent).

### Analysis Area

The analysis area is the area used for determining direct, indirect, and cumulative effects for the natural resources considered in this analysis. Note, the spatial and temporal bounds of the analysis (affected) area used for the effects analysis have been identified and described for each natural resource area included in this analysis and may vary from resource area to resource area.

### **Grizzly Bear Subunit**

A grizzly bear subunit is an area approximately the size of an average annual female home range (about 50 square miles), generally from ridge top to valley bottom, and including all seasonal habitats. The Mid Swan Salvage Blowdown Project Area falls within the Lion Creek, Goat Creek, and Piper Creek Grizzly Bear Subunits. The proposed management actions included in all action alternatives comply with the Swan Valley Grizzly Bear Conservation Agreement (SVGBCA) (Project File Exhibit F-233).

## **Affected Environment Analysis**

The resource information provided in the Affected Environment narratives includes the effects of past actions, assessing them as part of the existing condition of the landscape. For instance, consider a hypothetical example of a past timber sale in 1979 harvesting 150 acres of forest and constructing 2 miles of new road within the Mid Swan Blowdown Salvage Project Area. The effects of the harvest and road construction, as well as the vegetation re-growth and roadbed stabilization, occurring over the past 29 years would be accounted for in several assessments of the affected environment based on the specific resource being analyzed. Following are a few illustrations of the consideration of past actions in the affected environment with a scenario of this type:

- The change in forest structure from this past regeneration harvest would be displayed in the existing successional stage distribution disclosure in the Vegetation Section. Field examinations indicate this 150-acre harvest area supports a fully-stocked stand of 20-foot trees and has progressed into a mid-seral successional stage over the past 29 years. This information would be included in the acreage of mid-seral successional classification and used in disclosure of existing vegetation and wildlife habitat conditions.
- The existing level of past regeneration harvest in the project area would include the 150 acres from this activity.
- Stream channel surveys assessing stream conditions in the project area would reflect any remaining physical and biological effects of the past timber sale and road construction. These field classifications of existing conditions of specific streams would be disclosed in the Affected Environment Section.
- The present contribution of sediment and increased stream flow from the 2 miles of road construction would also be accounted for in the calculation of existing watershed conditions as specific road segments and their construction dates are entered into the WATSED models. Likewise, any residual effects of the 150-acre harvest unit would be reflected in the existing condition model outputs based on vegetative recovery validated through field and aerial photo reconnaissance.
- Field examinations of road conditions would provide additional data on residual contributions of sediment from the 2 miles of road. These effects would be incorporated into existing road condition disclosures and provide a basis for proposed BMP projects for improved drainage, if needed.

Specific past actions considered in the Mid Swan Project Environmental Assessment are summarized in Table 3-1 below. Project File Section S provides detailed information for these actions. A list of past actions is not necessarily exhaustive, as records may not exist for all past activities (by project). This is particularly true for those actions that predate the passage of the NEPA in 1969. Nevertheless, the effects of such past actions are fully accounted for in the assessment of existing condition as the current condition assessment necessarily reflects the impact of such actions (to the extent they are still affecting the particular resource considered).

## Environmental Consequences

The Environmental Consequences Section details the environmental effects that would occur for each alternative. It forms the scientific and analytical basis for the alternative comparisons presented at the end of Chapter 2. Information used to assess effects is based on the consideration of the best available sciences. The effects of Alternative A (No Action Alternative) form a baseline against which action alternatives are evaluated. Each narrative begins with a brief explanation of how effects were analyzed and the models used for each resource. When the effects or impacts are associated with an issue, as described in Chapter 2, their relevance and connectedness with the issue are discussed and play an important role in the evaluation of alternatives.

Environmental effects can be direct, indirect, or cumulative. They can be long or short duration. Effects can be quantitative or qualitative, adverse or beneficial, actual or potential. It is important to consider timing and location of effects. Direct effects are those caused by the action and occur at the same time and place. Indirect effects are those caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR 1508.8). In most cases, direct and indirect effects are discussed together. Cumulative effects are those that result from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions (40 CFR 1508.7). Therefore, the discussion of effects first considers the direct and indirect effects of each alternative and does not consider cumulative effects unless direct and indirect effects exist.

As the effects on a resource for each alternative are read, the supplemental maps should be referred to for the location of activities and area of analysis.

Discussions at the end of each resource section include a description of the Regulatory Framework associated with that resource. Environmental laws such as the NFMA, Endangered Species Act (ESA), Clean Water Act, and Clean Air Act provide the direction to the Forest Service for management of forest resources. These laws are interpreted and defined through the Code of Federal Regulations (CFRs), Administrative Rules of Montana (ARMs), Land and Resource Management Plan (Forest Plan) direction, Forest Service Manual (FSM) direction, and Forest Service policy. The Regulatory Framework associated with each resource is helpful in relating National and Forest direction to resource analysis procedures.

The cumulative effects analysis includes the additive effect of the action being considered when added to the effects of past, present, and reasonably foreseeable future actions. As past actions are already included in the affected environment, cumulative effects analysis builds upon this existing condition assessment by considering the incremental addition of direct and indirect effects of proposed, as well as present and reasonably foreseeable actions. While impacts can be differentiated by direct, indirect, and cumulative, the concept of cumulative impacts takes into account all disturbances since cumulative impacts result in the compounding of the effects of all actions over time.

Detailed descriptions of foreseeable actions and Cumulative Effects Worksheets by natural resource are filed in the Mid Swan Blowdown Salvage Project File. The cumulative effects analysis for each resource area considered only those actions that would have measurable effects. Reasons as to why other actions had no effects are documented in the project file and are not elaborated on further in this chapter.

Table 3-1 provides a summary of the actions considered in the cumulative effects analysis for the Mid Swan Project. Additional information such as maps and specific details such as the timing, type, location, and scale of these past, present, and future actions is also included in the project file. The effects of these activities are discussed by resource in Chapter 3 - Affected Environment and Environmental Consequences.

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**Past Actions**

Past actions are management activities (timber harvest and prescribed burning) and events (wildfire) that occurred in the analysis area. The effects of these activities and events provide baseline conditions for the affected environment resources existing in the analysis area, which are described in Chapter 3 of this document. Additional information is contained in the project file for each of the resources. Records of past activities and events for the analysis area were examined from years 1910 to 2008. Activities recorded during this time are listed in Table 3-1.

**TABLE 3-1.**  
**PAST ACTIONS CONSIDERED IN THE CUMULATIVE EFFECTS ANALYSIS**

Action	Description	Unit of Measure		
<b>Forest Service Lands</b>				
Fuels Management, Wildfire Suppression, and Vegetation Management Activities within the Mid Swan Blowdown Salvage Project Area	Wildfire (1910-2007)	717 acres (1910)		
	Vegetation Management (1955-1986)	Regeneration Harvest 791 acres	Uneven – Aged Harvest 50 acres	Intermediate Harvest 361 acres
	Timber Stand Improvement Treatments (1973-2008)	Pre-Commercial Thinning and Weeding 408 acres		
	Site Preparation	Burning, Mechanical Site Prep, Manual Site Prep, Slashing 841 acres		
Road Management/Maintenance within the Mid Swan Blowdown Salvage Project Area	Road Management	8.46 miles – Category 1 - Open Forest Roads with No Restrictions 3.49 miles – Category 5 – Year Round Closure with some Administrative Motorized Traffic 2.84 miles – Category 13 – IY (Impassable Year Round)		
Special Use Permits within the Mid Swan Blowdown Salvage Project Area	T23NR17W Section 17 – 343 (Sewage Transmission Line) – DNRC T23NR17W Section 17 – 751 (FRTA Easement) - DNRC T22NR17W Section 8 – 822 (Telephone Line) – Blackfoot Telephone Coop T22NR17W Section 8 – 823 (Fiber Optic Cable) – Blackfoot Telephone Coop T22NR17W Section 16 – 822 (Telephone Line) – Blackfoot Telephone Coop T22NR17W Section 16 – 823 (Fiber Optic Line) – Blackfoot Telephone Coop T22NR17W Section 17 – 823 (Fiber Optic Line) – Blackfoot Telephone Coop T22NR17W Section 17 – 822 (Telephone Line) – Blackfoot Telephone Coop T22WR17W Section 16 – 753 (FLPMA Private Road) – Babette Johnson T22NR17W Section 8 – 641 (Powerline) – Missoula Electric Coop T22NR17W Section 10 – 641 (Powerline) – Missoula Electric Coop T22NR17W Section 16 – 641 (Powerline) – Missoula Electric Coop T22NR17W Section 17 – 641 (Powerline) – Missoula Electric Coop T22NR17W Section 8 – 741 (DOT Easement) – MTDOT T22NR17W Section 16 – 741 (DOT Easement) – MTDOT T22NR17W Section 16 – 753 (FLPMA Private Road) – Natural Cemeteries T22NR17W Section 16 – 753 (FLPMA Private Road) – Stephen Phillips T22NR17W Section 17 – 753 (FLPMA Private Road) – Piper Creek Ridge RUA			
Noxious Weed Mid Swan Blowdown Project Area	Noxious Weed Spraying			
FS Land Acquisition	FS Acquisition of PCTC Lands within the Mid Swan Blowdown Salvage Project Area (1995 – 2008)	640 acres; T22NR17W Section 17 (2001)		
	FS Acquisition of PCTC Lands within the Swan Valley (1995-2008)	741 acres; T19N, R17 Sections 11 and 22 (1998) 1803 acres; T19N, R17W Sections 26, 27, and 35 (1998)		

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**TABLE 3-1.**  
**PAST ACTIONS CONSIDERED IN THE CUMULATIVE EFFECTS ANALYSIS**

Action	Description	Unit of Measure		
		480 acres; T19N, R16 Section 3 (2001) 640 acres; T22N, R17W Section 17 (2001) 600 acres; T19N, R16W Section 9 (2003) 307 acres; T21N, R17W Section 3 (2003) 640 acres; T21N, R17W Section 9 (2003) 110 acres; T22N, R17W Section 3 (2003) 600 acres; T19N, R16W Section 19 (2003) 553 acres; T19N, R16W Section 17 (2004) 102 acres; T19N, R16W Section 7 (2005) 220 acres; T19N, R17W Section 1 (2006) 640 acres; T19N, R17W Section 25 (2006) 160 acres; T19N, R17W Section 26 (2006)		
<b>Private and Industrial Lands</b>				
PCTC Fuels Management, Wildfire Suppression, and Vegetation Management Activities within the Mid Swan Blowdown Salvage Project	Vegetation Management (1960-2004) (Section 17 – Previously PCTC Ownership)	<sup>1</sup> Regeneration Harvest 365 acres	Uneven-Aged Harvest 42 acres	Intermediate Harvest 150 acres
Road Management, Maintenance, and Closures within the Mid Swan Blowdown Salvage Project	PCTC Roads	1.38 miles		
	Private Roads	1.29 miles		
	State of Montana Roads (Hwy 83)	2.19 miles		
PCTC Land Sales	PCTC Lands Sales within the Swan Valley (1995-2007)	44 parcels totaling 15,705 acres 11,489 acres sold to conservation buyers 4,216 acres sold to private parties 549 acres sold to private parties with conservation easements		
Private Land Development within the Mid Swan Blowdown Salvage Project Area	Lake County	No subdivision applications in Lake County portion of the project area.		
<b>Montana State and Counties (Missoula &amp; Lake)</b>				
State of Montana Timber Harvest	Vegetation Management within the Mid Swan Blowdown Salvage Project Area	No Montana State lands lie within the project area.		
<b>All Forest Lands (NFS, Public &amp; Timber Industry) Actions</b>				
Dispersed Recreation	The area offers a variety of motorized and non-motorized year-round recreation opportunities including, hiking, cross-country skiing, mountain biking, hunting, fishing, gathering forest products, driving for pleasure, and snowmobiling. Lion Creek Palisade Trail #25 is a Forest Development Trail located within the project area.	X		

**Present and Reasonably Foreseeable Actions**

Present and Reasonably Foreseeable Actions are management activities or projects planned by the Forest Service, other government agencies, or private landowners in or near the analysis area, which could occur regardless of which alternative is selected for implementation. Present and Reasonably

<sup>1</sup> Includes T22NR17W Section 17 which was acquired from PCTC following harvest activities.

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Foreseeable Actions are activities or protects that are ongoing or will be implemented within the next 10 years, including those that would recur annually.

Present and Reasonably Foreseeable Actions are displayed in Table 3-2.

**TABLE 3-2.  
PRESENT AND REASONABLY FORESEEABLE ACTIONS CONSIDERED IN THE CUMULATIVE EFFECTS ANALYSIS**

Action	Description	Present	Reasonably Foreseeable
<b>Forest Service Lands</b>			
Fuels Management, Wildfire Suppression, and Vegetation Management Activities within the Mid Swan Blowdown Salvage Project Area	Fire Suppression Activities will occur as needed. Control of wildfires will follow Forest Plan standards for the affected Management Areas.	X	X
Routine Road Management	Routine road maintenance will occur as needed on roads in the project area, separate from any road maintenance identified in this EA. Maintenance includes road grading, gate repair/replacement, cleaning ditches and culverts, brushing, and debris removal. Additional culverts are likely to be installed as needed.	X	X
Special Use Permits within the Mid Swan Blowdown Salvage Project Area	T23NR17W Section 17 – 343 (Sewage Transmission Line) – DNRC T23NR17W Section 17 – 751 (FRTA Easement) - DNRC T22NR17W Section 8 – 822 (Telephone Line) – Blackfoot Telephone Coop T22NR17W Section 8 – 823 (Fiber Optic Cable) – Blackfoot Telephone Coop T22NR17W Section 16 – 822 (Telephone Line) – Blackfoot Telephone Coop T22NR17W Section 16 – 823 (Fiber Optic Line) – Blackfoot Telephone Coop T22NR17W Section 17 – 823 (Fiber Optic Line) – Blackfoot Telephone Coop T22NR17W Section 17 – 822 (Telephone Line) – Blackfoot Telephone Coop T22WR17W Section 16 – 753 (FLPMA Private Road) – Babette Johnson T22NR17W Section 8 – 641 (Powerline) – Missoula Electric Coop T22NR17W Section 10 – 641 (Powerline) – Missoula Electric Coop T22NR17W Section 16 – 641 (Powerline) – Missoula Electric Coop T22NR17W Section 17 – 641 (Powerline) – Missoula Electric Coop T22NR17W Section 8 – 741 (DOT Easement) – MTDOT T22NR17W Section 16 – 741 (DOT Easement) – MTDOT T22NR17W Section 16 – 753 (FLPMA Private Road) – Natural Cemeteries T22NR17W Section 16 – 753 (FLPMA Private Road) – Stephen Phillips T22NR17W Section 17 – 753 (FLPMA Private Road) – Piper Creek Ridge RUA		
Fish Habitat Improvement Project	Replacement of Piper Creek Bridge at FDR #966 (2012)		
Noxious Weed Management with Mid Swan Blowdown Salvage Project Area	Efforts to control infestations of noxious weeds and reduce new infestations are ongoing and would continue through the foreseeable future. Control actions may include hand spraying herbicides, hand pulling, and biological control. All activities would comply with the 2001 Flathead National Forest Noxious and Invasive Weed Control EA and DN.		
Land Acquisition	Land & Water Conservation Fund Proposed Acquisition of PCTC Lands in the Swan Valley		1222 acres – Upper Swan Valley Linkage Zone (FY 2009) 1240 acres – Lower Cold, Smith, and Condon Creeks Linkage Zone (FY 2010) 915 acres – Lower Cold, Smith, and Condon Creeks Linkage Zone (FY 2011) 960 acres – Lower Lion and Piper Creeks Linkage Zone (2012) 1279 acres - Lower Lion and Piper Creeks Linkage Zone (2013)

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**TABLE 3-2.**  
**PRESENT AND REASONABLY FORESEEABLE ACTIONS CONSIDERED IN THE CUMULATIVE EFFECTS ANALYSIS**

Action	Description	Present	Reasonably Foreseeable
<b>Private and Industrial Lands</b>			
PCTC Land Sales	Sale of PCTC Lands within the Mid Swan Blowdown Salvage Project Area (2009)	No PCTC lands lie within the Mid-Swan Blowdown Salvage Project Area	
	PCTC Lands Sales within the Swan Valley (In addition see Special Note below)	120 acres – T22N R17W, Section 5 portion lying west of Hwy 83 480 acres – T22N R17W, Section 29 except portion in SW ¼ 140 acres – T22N R17W, S ½ Section 21 lying east of Highway 83 640 acres – T21N R17W, Section 31 200 acres – T21N R17W S ½ Section 11 lying east of Highway 83 and north of Holland Creek 640 acres – T20N R16W Section 33	
Timber Harvest	Private salvage of blowdown	1.0 MMBF	
Private Land Development	Lake County	No pending applications for subdivision development within the Mid Swan Blowdown Salvage Project Area.	
<b>Montana State and Counties (Lake)</b>			
State of Montana Timber Harvest	Vegetation Management within the Mid Swan Blowdown Salvage Project Area	No Montana State lands lie within the Project Area.	
	Vegetation Management within the Swan Valley	2064 acres - White Porcupine Multiple Timber Sale T23N R18W Sections 12, 13, 16, 22, 23, 24, 26, & 28 and T24N R18W Sections 22, 23, 24, 25, 26, 28, 34 & 36, 240 acres – Winter Blowdown Salvage T23N R28W Sections 24, & 26, and T23N R17W Sections 20, 30, 23 & 34 1884 acres - Three Creeks FEIS T24N R17W Sections 1, 3, 4, 9, 10, 11, 14, 15, 16, 22, 25, 26 and 27 50 acres – Main Wood 10 Salvage Permit Proposal T23N R18W Section 10	
Road Management/Maintenance	Road Construction within the Swan Valley	Three Creeks Timber Sale - 7.5 to 16 miles of new roads and 3 to 7 miles of new temporary roads	
	Applications of BMPs within the Swan Valley	56 miles - Three Creeks Timber Sale	
<b>All Forest Lands (NFS, Public &amp; Timber Industry) Actions</b>			
Dispersed Recreation within the Mid-Swan Blowdown Project Area	The area offers a variety of motorized and non-motorized year-round recreation opportunities including, hiking, cross-country skiing, mountain biking, hunting, fishing, gathering forest products, driving for pleasure, and snowmobiling. Lion Creek Trail #25 is a Forest Development Trail located within the project area.	X	X

**The Montana Legacy Project:** On June 30, 2008, the Nature Conservancy and The Trust for Public Land announced they reached agreement to purchase approximately 320,000 acres of PCTC lands. The lands in agreement include part of the Swan

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Valley. The lands would be purchased adjacent to NFS lands, and it is anticipated that much of this land would eventually be conveyed to the Forest Service. The property will be acquired by The Trust for Public Land and The Nature Conservancy in three phases. Phase 1 closed on January 15, 2009 where the Nature Conservancy and The Trust for Public Land purchased 130,000 acres of western Montana forest land from Plum Creek Timber Company. No lands in this first purchase are located in the Swan Valley. Phase 2 is expected to close in December 2009, and Phase 3 in December 2010. The sale is subject to financial and other contingencies typical in a sale of this size and complexity. Neither The Trust for Public Land nor The Nature Conservancy plans to retain long-term ownership of any lands.

For the purpose of this analysis, only definitive land transactions authorized under the Flathead National Forest Long Range Acquisition Plan are shown in the tables above.

## Forest Plan Management Direction

The Forest Plan sets management direction for this project area.

The Forest Plan provides forest-wide goals and objectives (pages II-1 through II-57). The Forest Plan also divides the Flathead National Forest into subunits called Management Areas (MAs). Each of these MAs has resource or activity goals and management standards (Forest Plan, pages III-1 through III-126). In keeping with Forest Service policy on multiple use, the Forest Plan established goals to strike a balance among different resources (Forest Plan, page II-5).

A brief overview of each of the MAs in this project area follows. More specific Forest Plan direction is discussed in each resource section later in this chapter.

**TABLE 3-3.**  
**MANAGEMENT AREA DESCRIPTIONS, EMPHASIS, AND MANAGEMENT AREA ACRES FOR THE MID SWAN SALVAGE BLOWDOWN PROJECT AREA**

MA	Description	Management Emphasis	Total Acres
5	Roaded timberlands in areas of high scenic value, area along MT Highway 83 (Swan Valley Highway).	Maintain a pleasing, natural appearing landscape in which management activities, including timber management with roads, do not dominate.	33
9	Timberlands capable of providing white-tailed deer winter habitat.	Provide cover and forage areas suitable for white-tailed deer winter habitat.	3865
12	Riparian Areas consisting of aquatic, riparian, and portion of terrestrial ecosystems along most perennial streams, lakes, ponds, marshlands, bogs and some important seasonal flows.	Manage to enhance vegetation and wildlife diversity and maintain or enhance water quality and fisheries.	102
<b>TOTAL NFS LANDS</b>			<b>4000</b>

Refer to Map 3-1 at the end of this chapter for a display of MAs in the project area.