Wildlife

Threatened and Endangered Species

Introduction

There are three threatened and endangered wildlife species (TES) that may be found in the Mid Swan Blowdown Salvage Project Area and throughout the Swan Valley: Canada lynx, gray wolf, and grizzly bear. Life history information on these species can be found in the reference document "Distribution, Life History, and Recovery Objectives For Region One Threatened and Endangered Terrestrial Wildlife Species Occurring on the Flathead National Forest" (Project File Exhibit F-3).

TABLE 3-49.

THREATENED, ENDANGERED, AND PROPOSED SPECIES KNOWN OR SUSPECTED TO OCCUR WITHIN THE INFLUENCE AREA OF THE PROPOSED ACTION

Species	Status	Occurrence
Canada Lynx *(Lynx canadensis)*	Threatened; Proposed Critical Habitat	Resident
Gray Wolf *(Canis lupus)*	Endangered	Resident
Grizzly Bear *(Ursus arctos)*	Threatened	Resident

Canada Lynx

Analysis Area

Spatial Bounds

In accordance with the Lynx Conservation Assessment and Strategy (LCAS 2000), 109 Lynx Analysis Units (LAU's) were identified and mapped on NFS lands on the Flathead National Forest. The Mid Swan Blowdown Salvage Project is located mostly in the Lion LAU. There is also one unit in the Squeezer LAU near Goat Creek (Unit 1), one unit that straddles the Piper and South Woodward LAU's (Unit 26), and a log deck (Unit 25) in the Piper LAU (Map 3-2). These units approximate the size of an area used by an individual lynx and encompass both lynx habitat and areas classified as non-habitat. The LAU's are the geographic area used to analyze direct, indirect, and cumulative effects for Canada lynx.

Temporal Bounds

The length of time for effects analysis is approximately 3 to 5 years. This is based on the probable contract length for the proposed project, the timeframes for related activities, and the reasonably foreseeable actions identified.

Data Sources, Methods, and Assumptions Used

Data used included aerial photography, stand exams, Vector Map (VMAP) Data, field surveys of snags and downed logs, old growth surveys, project area field visits, research literature, and GIS and dataset information for features such as general forest attributes, slope, aspect, habitat type, forest type, elevation, and mapped lynx habitat.

Measurement Indicators

Based on current knowledge of the life history, biology, and ecology of lynx, certain elements are thought to be essential to the conservation of the species. These elements include the presence of snowshoe hares and their preferred habitat conditions (forage), sites for denning, and other habitats that do not necessarily support snowshoe hare or denning, but occur in close juxtaposition to such habitat, enabling lynx to access various portions of their home range. These elements of lynx habitat, and the anticipated effects to these elements from project implementation, are the measurement indicators used in this analysis.

Affected Environment

Historic Condition

Canada lynx are known to have been residents in the Swan Valley in the past. There would have been ample denning habitat for lynx; forage opportunities would have been dependent on vegetative patterns across the landscape at the time (e.g., snowshoe hare habitat). It is likely that the first non-Native Americans to visit the Upper Swan Valley were French-Canadian trappers, in the mid-1800s (SEC 2004). With Congress' passing of the Homestead Act in 1862, the way was paved for human development in the valley. As human activity levels in the Swan Valley increased, mortality risk for the lynx increased as well. In 1864, the Federal government granted land to the Great Northern Railroad for rail right-of-way development. The checkerboard ownership pattern found in the Upper Swan Valley today is largely the result of this rail development and later land exchanges. In the early 1900s, people began to move into the Swan Valley in greater numbers and active forest management began. By the mid-1900s aggressive fire suppression was already changing the landscape, as was active timber management and a recreating public.

Existing Condition

Canada lynx habitat is widespread across the Flathead National Forest. Canada lynx are known to occur in the Swan Valley, especially in the southern portion of the valley (Seeley/Swan). They are usually found at higher elevations where their distinctive physiology gives them an advantage over other predators (LCAS 2000).

Lands within the LAU's have been delineated into lynx habitat and non-lynx habitat. This delineation is based on both elevation and snow-depth, and on site characteristics. Dry site forest communities are not considered lynx habitat. The only blowdown salvage units located in designated lynx habitat are Unit 13 (11 acres) and Unit 26 (27 acres). Neither of these units provides lynx forage habitat. Both Units 13 and 26 provide potential lynx denning habitat, especially with the addition of blowndown trees and root wads. All of the other proposed salvage units are located in non-lynx habitat.

Foraging habitat for lynx includes sapling size stands that would likely support snowshoe hare (USDA 1999, pages 136 to 40 and 184 to 195) and multistory forest stands that include dense patches of trees or shrubs, or overstory trees with limbs that touch the ground. Denning habitat includes older forest stands where larger amounts of down woody material would be expected to occur (USDA 1999,

pages 346 and 347). In a recent study in northwestern Montana (Squires et al. 2007), it was found that lynx denned in pre-existing sheltered spaces created by downed logs (62 percent), root-wads from wind-thrown trees (19 percent), boulder fields (10 percent), slash piles (6 percent), and live trees (4 percent). In this study, 80 percent of dens were in mature forest stands and 13 percent in mid-seral regenerating stands; young regenerating stands and thinned stands were seldom used for denning.

The Canada lynx was listed as threatened in 2000. The LCAS was developed to guide lynx conservation and management. Recently, the Northern Rockies Lynx Management Direction or NRLMD (USDA Forest Service 2007) was approved and incorporated as lynx management direction into the Flathead's Forest Plan. The NRLMD directs the continued use of LAU's for effects analysis. On February 28, 2008, critical habitat was proposed for Canada lynx.

Throughout most of the Swan Valley, lands that are designated as lynx habitat are also proposed as critical lynx habitat. In the Mid Swan Blowdown Salvage Project Area, since Units 13 and 26 are located in designated lynx habitat, they would also be located in proposed critical lynx habitat.

Environmental Consequences

The Mid Swan Project consists of three action alternatives and a No Action Alternative. The alternatives are described in detail in Chapter 2 of this EA. The Cumulative Effects Worksheet, located in the Wildlife Project File (Project File Exhibit F-3) considers and describes proposed activities in addition to the past, current, and reasonably foreseeable activities listed at the beginning of this chapter in Tables 3-1 and 3-2. Those activities that cumulatively contribute indiscernible effects to Threatened and Endangered Species are not included in this section. Those activities that cumulatively affect these species are listed below.

Alternative A - No Action
Direct and Indirect Effects

There would be no blowdown salvage, or associated activities, proposed with this alternative. There would be no direct effects to lynx or lynx habitat. Blowndown trees are a natural occurrence in older forests, and the accumulation of significant amounts of down woody debris on the forest floor is an important characteristic of Canada lynx denning habitat.

It is possible that an indirect effect of Alternative A would be an increased likelihood of a more intense wildfire event in the blowdown area. Historically, wildfire positively affected lynx by providing large areas of potential forage in the form of sapling stands (snowshoe hare habitat). Unfortunately, a large intense wildfire would potentially decrease overall cover and potential denning habitat as well, at least short-term. The level of effects would depend on the size and intensity of the wildfire.

Alternative A - No Action
Cumulative Effects

Past land management activities in the area, including timber harvest, pre-commercial thinning, road construction, residential development, and agricultural conversion, have decreased and fragmented potential foraging, denning, and hiding/travel cover for lynx. Timber harvest activities on PCTC lands and on NFS lands in the salvage area peaked during the mid to late 1980s, and continue up to the present on all ownership lands.

Plum Creek Timber Company is in the process of selling some of their land to private individuals and to conservation buyers, including the Forest Service. The Lands Section of this EA provides a detailed discussion of this change in land ownership and the newly designed Montana Legacy Project. The existing intermingled ownership pattern in the Swan Valley presents difficulties in managing habitat

connectivity with patch sizes that occurred historically. As the Forest Service and other land conservation groups acquire lands in the Swan Valley, it may become easier to manage for historical levels of habitat connectivity.

The Mid Swan Blowdown Salvage Project is located near the community of Condon, Montana. There are part-year and yearlong residences in the area as well as many recreational activities. The level of human use in the area increases the chance for disturbance or displacement of lynx. Other human activity in the area includes various road use permits and easements.

The effects discussed in Alternative A would be in addition to the cumulative effects described here. Alternative A would not contribute significantly to cumulative effects in the Mid Swan Blowdown Salvage Project Area because existing lynx forage and denning habitat would not be directly altered.

Alternatives B (Proposed Action) and D
Direct and Indirect Effects

Under Alternatives B and D, there are 2 units (Units 13 and 26) proposed in designated lynx habitat.

Alternative D differs from Alternative B in that no salvage is proposed in RHCA's under Alternative D. Consequently, Units 24 and 25 have been dropped from Alternative D and some units are smaller in size compared to Alternative B, since, in Alternative D, these units do not include RHCA's. There is little difference between Alternatives D and B in their effects to lynx. These two alternatives do have a difference in effects when compared to either Alternative A or C in that both B and D include units in lynx habitat (Units 13 and 26) which provide high quality lynx denning habitat. The No Action Alternative contains neither unit, and Alternative C contains Unit 26.

Forage Habitat

Lynx foraging habitat consists of dense young trees or shrubs tall enough to protrude above the snow. These dense concentrations of trees or shrubs can be found in young regenerating forests, in multistoried forests with dense pockets of young trees or shrubs, or in older age class multistory forests where tree boughs touch the snow surface but stem density is low (Squires 2006). Lynx productivity is highly dependent on the quantity and quality of winter snowshoe hare habitat (USDA 2007).

There are no salvage units or temporary roads proposed in existing lynx foraging habitat under Alternatives B or D. The forest stands proposed for treatment do not have the vegetative characteristics that are associated with snowshoe hare habitat. Field surveys confirmed that there would be no effect to lynx foraging habitat as a result of implementing Alternatives B or D.

Denning Habitat

Lynx den sites are found in mature and younger boreal forest stands that have a large amount of cover and abundant, coarse, woody debris, such as downed trees and root wads. Den sites have also been associated with moister forest stands containing denser understory cover (Squires 2006).

With Alternatives B and D, there are two units proposed in lynx denning habitat. Unit 13 (11 acres) is an old growth unit with abundant down woody debris, and Unit 26 (27 acres in Alternative B and 26 acres in Alternative D) is a mid-seral stage forest stand. Unit 26 did not exhibit quality denning habitat characteristics until after the wind event; the addition of down woody material improved denning habitat characteristics. A direct effect to lynx habitat from salvaging blowdown in Units 13 and 26 would be the loss of potential lynx denning habitat. In Unit 13, an old growth forest stand, Design Criteria (Table 2-14) for retaining down woody material could provide lynx denning habitat after salvage operations; this would depend on the juxtaposition of the material retained and other

characteristics of the down logs. It is unlikely, due to the condition of the forest stand prior to the wind event, that Unit 26 would provide high quality denning habitat for lynx following salvage operations.

Temporary Roads

Alternative B proposes 0.3 miles of new temporary road and 1.0 mile of use of historic road templates. Alternative D proposes 0.1 mile of temporary road and 1.0 mile of use of historic road templates. None of this temporary road mileage is in designated lynx habitat. There would be no decrease in lynx habitat as a result of proposed temporary road.

Lynx Security and Mortality Risk

There is a potential for disturbing Canada lynx and displacing them from potential denning habitat in Units 13 and 26. The Design Criteria for grizzly bear that limits activity during the spring period (April 1 through June 15) would help to mitigate potential disturbance to lynx during the denning period.

Alternatives B (Proposed Action) and D
Cumulative Effects

There is a history of timber harvest and road building on all ownership lands in the vicinity of the blowdown salvage; it is anticipated that this would continue into the future. Other ongoing activities that would be included in the cumulative effects analysis include residential development, hunting, firewood cutting, recreational activities, existing special use permits, road maintenance activities, and noxious weed treatments. Plum Creek Timber Company is in the process of offering some of their lands for sale to the Forest Service, to conservation buyers, and to other private individuals. Many of the lands offered for sale have been located in the lower valley area, generally outside of designated lynx habitat.

There would be no new over-the-snow routes created in lynx habitat under Alternatives B or D. It is possible that dispersed snowmobile use in the blowdown salvage area could increase due to more open stand conditions. Dispersed recreation activities seldom result in a direct loss of habitat (LCAS 2000), but may indirectly increase competition for prey as a result of snow compaction. The possibility of increased snowmobile use would decline as vegetation grows in and stand conditions change. This potential is low due to the small amount of the salvage area being in designated lynx habitat.

Alternatives B and D would not increase potential lynx mortality. Cover for lynx would remain connected and continuous; any decrease in hiding or canopy cover as a result of salvaging blown down trees would be insignificant. Non-target trapping mortality could occur in the area, but it is outside the control of the proposed project.

There would be no significant adverse cumulative effects on Canada lynx as a result of implementing Alternatives B or D because:

1. Activities proposed under these alternatives are consistent with the standards and guidelines described in the NRLMD;

2. Most of the proposed salvage is proposed outside of lynx habitat;

3. There would be no loss of potential lynx foraging habitat;

4. Loss of potential lynx denning habitat would be 38 acres or less;

5. Implementation of Alternatives B or D would not preclude lynx use of habitats in the area;

6. There would be no increase in mortality risk for lynx as a result of implementing Alternatives B or D; and

7. Neither Alternative B nor D would result in the destruction or adverse modification of proposed critical habitat for Canada lynx.

Alternative C
Direct and Indirect Effects

The main difference between Alternative C and Alternatives B or D is that in Alternative C there is no blowdown salvage proposed in old growth forest stands which are also lynx habitat. Specifically, in Alternative C, Unit 13 is dropped which is an old growth unit within lynx denning habitat. Under Alternative C, Unit 26 (27 acres) is proposed in designated lynx habitat and 19 units proposed in non-lynx habitat (595 acres).

Forage Habitat

There are no salvage units or temporary roads proposed in existing lynx foraging habitat under Alternative C. The forest stands proposed for treatment do not have the vegetative characteristics that are associated with snowshoe hare habitat.

Denning Habitat

In Alternative C, there is one unit proposed in lynx denning habitat; Unit 26 (27 acres), a mid-seral forest stand. Unit 26 did not exhibit quality denning habitat characteristics until after the wind event. The addition of down woody material improved denning habitat characteristics for lynx in this stand. A direct effect to lynx habitat from salvaging blowdown in Unit 26 would be the loss of potential lynx denning habitat.

Temporary Roads

Alternative C proposes no new temporary road and 0.5 miles of use of historic road templates. None of the temporary road mileage is in designated lynx habitat. There would be no decrease in lynx habitat as a result of proposed temporary road.

Lynx Security and Mortality Risk

There is a potential for disturbing Canada lynx and displacing them from potential denning habitat in Unit 26. The potential would be low. The Design Criteria for grizzly bear that limits activity during the spring period (April 1 thru June 15) would help to mitigate potential disturbance to lynx during the denning period.

Alternative C
Cumulative Effects

As described above under Alternative B, there is a history of timber harvest and road building on all ownership lands in the vicinity of the blowdown salvage; it is anticipated that this would continue into the future. Other activities in the area include residential development, hunting, firewood cutting, recreational activities, existing special use permits, road maintenance activities, and noxious weed treatments. Plum Creek Timber Company is in the process of offering land for sale to the Forest Service, to conservation buyers, and to other private individuals.

There would be no new over-the-snow routes created in lynx habitat under Alternative C. It is possible that dispersed snowmobile use in the blowdown salvage area could increase due to more open stand conditions. This potential, however, is low due to the small amount of the salvage area in designated lynx habitat.

Alternative C would not increase potential lynx mortality. Cover for lynx would remain connected and continuous; any decrease in hiding or canopy cover as a result of salvaging blown down trees would be insignificant. Non-target trapping mortality could occur in the area, but it is outside the control of the proposed project.

There would be no significant adverse cumulative effects on Canada lynx as a result of implementing Alternative C because:

1. Activities proposed under Alternative C are consistent with the standards and guidelines described in the NRLMD;
2. Most of the proposed salvage is proposed outside of lynx habitat;
3. There would be no loss of potential lynx foraging habitat;
4. Loss of potential lynx denning habitat would be 27 acres or less and there is no salvage proposed in the high quality denning habitat located in Unit 13;
5. Implementation of Alternative C would not preclude lynx use of habitats in the area;
6. There would be no increase in mortality risk for lynx as a result of implementing Alternative C; and
7. Alternative C would not result in the destruction or adverse modification of proposed critical habitat for Canada lynx.

Regulatory Framework and Consistency

The Canada lynx was classified as “Threatened” in Montana on March 24, 2000, and is currently protected under the ESA. A recovery plan for the Canada lynx has not yet been completed.

The USFWS has estimated that more than 70 percent of the lynx habitat in the Northern Rockies is on NFS and Bureau of Land Management (BLM) lands. Further, the USFWS determined that the existing land management plans for these two agencies allow actions that cumulatively could adversely affect lynx. Forest Service and BLM biologists also analyzed the plans, and came to the same conclusion. The LCAS was developed to guide lynx conservation and management. Recently, the NRLMD (USDA Forest Service 2007) was approved and incorporated as lynx management direction into the Flathead’s Forest Plan. The NRLMD directs the continued use of LAU’s for effects analysis.

The alternatives comply with Section 9, ESA of 1973 as amended. All actions proposed in the Mid Swan Blowdown Salvage Project also comply with the standards and guidelines outlined in the NRLMD. A BA for Threatened and Endangered Wildlife Species was prepared. The impacts of the proposed action were determined to **“may affect – not likely to adversely affect”** the Canada lynx. Concurrence is expected from the USFWS at a later date.

GRAY WOLF

Analysis Area

Spatial Bounds

The effects analysis area for direct and indirect effects to the gray wolf is the Mid Swan Blowdown Salvage Project Area. The cumulative effects area is the Swan Valley. This area is large enough to include portions of the home ranges of several individuals or packs.

Temporal Bounds

The length of time for effects analysis is approximately 3 to 5 years. This is based on the probable contract length for the Mid Swan Project, the timeframes for related activities, and the reasonably foreseeable actions identified.

Data Sources, Methods, and Assumptions Used

Data used included open road densities, stand exam surveys, aerial photography, VMAP Data, project area field visits, research literature, and GIS and dataset information for features such as white-tailed deer winter range, deer summer range, and general forest attributes like habitat type, forest type, elevation, and slope.

Measurement Indicators

Based on current knowledge of the life history, biology, and ecology of the gray wolf, certain elements are thought to be essential to the conservation of the species. These elements include an adequate prey base, secure den sites, rendezvous areas, and whelping sites, and a low mortality risk. These elements of gray wolf habitat, and the anticipated effects to these elements from project implementation, are the measurement indicators used in this analysis.

Affected Environment

Historical Condition

Historically, the gray wolf is known to have been a resident of the Swan Valley. The wolf moved freely throughout the valley in the absence of human development feeding mostly on ungulate species that inhabited the valley. As human activity levels in the Swan Valley increased, mortality risk for the gray wolf increased as well.

Existing Condition

The wolf population in the northern Rocky Mountains has generally increased over the last 7 years (USFWS et al. 2006). The recovery goal for wolves in the northern Rocky Mountains is 30 breeding pairs distributed equitably throughout the 3 recovery areas in Montana, Idaho, and Wyoming for 3 years (USFWS 1987). The year 2007 was the 8th year in which 30 or more breeding pairs were documented. In 2007, there was a minimum estimate of 213 wolves in 36 packs in Montana. This was an increase from 167 wolves in 31 packs at the end of the year in 2006 (Sime et al. 2008). There were 7 newly identified packs in 2007; reproduction confirmed in 28 of the 36 packs. On the Flathead National Forest, there are approximately 12 packs located on or near the forest. The Montana wolf

population is secure, but very dynamic (Sime et. al. 2007). Some packs do not persist from year to year for many reasons, including mortalities and poor pup production or survival due to parasites and disease, and lethal control to address conflicts with livestock.

There is known wolf use of the Swan Range, Mission Mountains, and Swan Valley. Attempts to confirm a pack in the Swan Valley were unsuccessful until 2006. By the end of December 2006, 4 wolves were documented in the Swan Valley. As of the summer of 2008, there are 2 known wolf packs in the Swan Valley. There are no known livestock depredations from these packs. Wolves are known to move through forest stands in the vicinity of the blowdown salvage. There are no known current or historical denning sites, whelping areas, or rendezvous sites in the Mid Swan Blowdown Salvage Project Area.

Environmental Consequences

Alternative A - No Action
Direct, Indirect, and Cumulative Effects

There would be no salvage of blowdown, or associated activities, proposed with this alternative; there would be no direct effects to gray wolf or gray wolf habitat because of proposed salvage actions in the Mid Swan Blowdown Project Area. As natural vegetative succession occurs, ungulate use patterns would change and wolves would vary their use patterns as well.

Indirectly, as a result of not implementing the proposed salvage, there may be an increased risk of a more intense fire burning in the blowdown area should a wildfire occur. A large intense wildfire could potentially decrease overall cover for ungulate species, at least short-term. This would potentially cause a short-term decrease in wolf prey species. The potential for a wildfire to occur, and the intensity of a potential fire, would be dependent on many factors, including weather at the time, location of the fire start, and fuel loadings in the path of the wildfire. Much of the existing winter range areas for white-tailed deer in the Swan Valley are located adjacent to private corporate lands. Many of these lands have been heavily managed and do not currently carry heavy fuel loading. Alternative A would not contribute significantly to cumulative effects in the project area.

Alternative B (Proposed Action)
Direct and Indirect Effects

Key components of wolf habitat are:

1. A sufficient, year-round prey base of ungulates and alternate prey,
2. Suitable and somewhat secluded denning and rendezvous sites, and
3. Security; sufficient space with minimal exposure to humans (USFWS 1987, Sime et. al. 2007).

Prey Base

White-tailed deer make up the greatest proportion of the wolf diet in northwestern Montana, followed by elk and moose (Kunkel 1997). Mule deer and smaller mammals or birds may also be preyed upon opportunistically throughout the year. The Swan Valley has historically provided spring, summer, fall, and winter range for white-tailed deer, mule deer, and elk. White-tailed deer sightings are common and their numbers are thought to be stable. Forest-wide population trends for elk and mule deer are thought to be stable; a relatively constant total mule deer and elk harvest has been observed (Project File Exhibit F-4).

The mature and immature forest stands where blowdown salvage is proposed currently provide hiding and/or thermal cover for wolf prey species (e.g., deer and elk). Although there may have been a decrease in the amount of hiding or thermal cover as a result of the wind event itself, the salvage of downed logs would not decrease thermal cover. Existing hiding cover may be decreased as a result of running heavy equipment in a unit to salvage the actual down material. This decrease in hiding cover within the unit boundaries would be minimal and short term (1 to 3 years). Under Alternative B, an adequate prey base for wolves would be maintained in the Swan Valley and any effects to the wolf ungulate prey base would be minimal.

Key Habitat Areas (denning sites, rendezvous areas, and whelping sites)

There are no known or historical den sites, rendezvous areas, or whelping sites in the area proposed for blowdown salvage under Alternative B. Wolves commonly den in undisturbed sites, usually within 400 yards of water. A wolf pack will move up to 6 miles to a number of rendezvous sites, typically meadows, until the pups can travel with the adults. Potential denning and rendezvous habitat sites are not considered limiting across the Swan Valley. There would be no direct or indirect effect on wolf security from disturbance to these key habitat areas with the implementation of Alternative B. It should be noted that, under any alternative, the contract for operations would include provisions to cease activity or otherwise protect any denning, rendezvous, or whelping site that may be discovered.

Temporary Roads

In addition to the actual logging activity (salvage of downed logs), approximately 1.3 miles of temporary road would be needed to access units under Alternative B. Approximately 1.0 mile of the required temporary road miles would use historic templates (they already exist on the ground) and approximately 0.3 miles of temporary road would be newly constructed under Alternative B. All temporary roads would be reclaimed and public use of temporary roads would be prohibited. Temporary road construction would have minimal impact on the gray wolf because it would not significantly effect prey populations and would not increase mortality risk for the gray wolf.

Security/Mortality Risk

Implementing Alternative B could displace wolves. Because wolves are adaptable animals, the expected increase in activity level within the project area would only result in temporary displacement of wolves from habitats that they might otherwise use. Wolves occupying the project area would likely move to adjacent areas further from human development and disturbance. Implementing Alternative B would not significantly increase the mortality risk for the gray wolf. Any increased chance for an encounter between wolves and humans because of the Mid Swan Project would present a low risk of mortality for the wolf, since the encounter would center around land management activities and not livestock depredation or other high risk activities commonly associated with wolf mortality.

Under Alternative B, there is proposed salvage in old growth habitats and in RHCA's (riparian areas). Old growth forest and wet areas are important white-tailed deer habitat and wolves may have more success finding prey in these habitats. The potential for disturbance of gray wolf could be greater in salvage units located in old growth or riparian areas.

Alternative B
Cumulative Effects

The Mid Swan Project would not increase cumulative effects to the gray wolf, due, in large part, to its location in an area where wolves are already accustomed to human activity.

Under Alternative B the existing wolf prey base would be maintained. There are no livestock grazing concerns associated with this project. Road closures in the Swan Valley that have been implemented to increase grizzly bear security have increased wolf security as well. There would be no increase in mortality risk with the implementation of Alternative B.

There is the potential for increased human occupancy of private lands near the project area due to sales of commercial timber lands. The conditions placed on lands sold to private individuals are highly variable. All development is regulated by State of Montana and County regulations specific to specific developmental activities. As previously stated, many acres of industrial forest lands have also been sold to public land management agencies. The Montana Legacy Project as discussed in the Lands portion of this EA, appears likely to further reduce the possibility of the conversion of industrial lands to private ownership. The cumulative effect of private land development in or near the project area with the project itself and coupled with previous land management projects are not likely to measurably affect the gray wolf on a population basis. There appears to be little risk of population loss, and species viability would be maintained (Project File Exhibit F-4).

Alternative C
Direct and Indirect Effects

The main difference between Alternative C and Alternative B is that there is no blowdown salvage proposed in old growth forest stands under Alternative C.

Prey Base

Although there may have been a decrease in the amount of hiding or thermal cover as a result of the wind event itself, the salvage of downed logs would not decrease thermal cover under Alternative C. Existing hiding cover could be decreased as a result of running heavy equipment in a unit to salvage the actual down material. This decrease in hiding cover within the unit boundaries would be minimal and short-term (1 to 3 years). Under Alternative C, an adequate prey base for wolves would be maintained in the Swan Valley and any effects to the wolf ungulate prey base would be minimal.

Key Habitat Areas (denning sites, rendezvous areas, and whelping sites)

There are no known or historical den sites, rendezvous areas, or whelping sites in the area proposed for blowdown salvage under Alternative C. There would be no direct or indirect effect on wolf security from disturbance to these key habitat areas because of implementing Alternative C. As would be the case for any of the action alternatives, the contract for operations would include provisions to cease activity or otherwise protect any denning, rendezvous, or whelping site that may be discovered.

Temporary Roads

Approximately 0.5 miles of temporary road would be needed to access units under Alternative C. All of the temporary road miles would use historic templates (they already exist on the ground). Under Alternative C, there would be no newly constructed temporary road templates. Temporary roads would be reclaimed and public use of temporary roads would be prohibited. Temporary roads would have minimal impact on the gray wolf, because it would not significantly effect prey populations and would not increase mortality risk for the gray wolf.

Security/Mortality Risk

Implementing Alternative C could displace wolves. Because wolves are adaptable animals, the expected increase in activity level within the project area would only result in temporary displacement

of wolves from habitats that they might otherwise use. Wolves occupying the project area would likely move to adjacent areas further from human development and disturbance. Implementing Alternative C would not significantly increase the mortality risk for the gray wolf. Any increased chance for an encounter between wolves and humans because of the Mid Swan Project would present a low risk of mortality for the wolf since the encounter would center around land management activities and not livestock depredation or other high risk activities commonly associated with wolf mortality.

There is no proposed salvage in old growth habitats under Alternative C. Salvage of blowdown is still proposed in RHCA's (riparian areas) under Alternative C. Wet areas are important white-tailed deer habitat and wolves may have more success finding prey in these habitats; the potential for disturbance of gray wolf may be greater in salvage units located in riparian areas.

Alternative C
Cumulative Effects

Under Alternative C, the existing wolf prey base would be maintained. There are no livestock grazing concerns associated with this project. Road closures in the Swan Valley that have been implemented to increase grizzly bear security have increased wolf security as well. There would be no increase in mortality risk as a result of implementation.

There is the potential for increased human occupancy of private lands near the project area due to sales of commercial timber lands. As previously stated, many acres of industrial forest lands have also been sold to public land management agencies. The cumulative effect of private land development in or near the project area, with the project itself and coupled with previous land management projects, are not likely to measurably affect the gray wolf on a population basis.

Adverse cumulative effects are not expected. There appears to be little risk of population loss and species viability would be maintained with implementation of Alternative C.

Alternative D
Direct and Indirect Effects

The main difference between Alternative D and Alternative B is that there is no blowdown salvage proposed in RHCAs under Alternative D.

Prey Base

The salvage of downed logs would not decrease thermal cover under Alternative D. Existing hiding cover may be decreased as a result of running heavy equipment in a unit to salvage the actual down material. This decrease in hiding cover within the unit boundaries would be minimal and short-term (1 to 3 years). Under Alternative D, an adequate prey base for wolves would be maintained in the Swan Valley and any effects to the wolf ungulate prey base would be minimal.

Key Habitat Areas (denning sites, rendezvous areas, and whelping sites)

There are no known or historical den sites, rendezvous areas, or whelping sites in the area proposed for blowdown salvage under Alternative D. There would be no direct or indirect effect on wolf security from disturbance to these key habitat areas. As described previously, the contract for operations would include provisions to cease activity or otherwise protect any denning, rendezvous, or whelping site that may be discovered.

Temporary Roads

Approximately 1.1 miles of temporary road would be needed to access units under Alternative D. Approximately 1.0 mile of the required temporary road miles would use historic templates (they already exist on the ground). Under Alternative D, there would be approximately 0.1 mile of newly constructed temporary road. Temporary roads would be reclaimed and public use of temporary roads would be prohibited. Temporary roads would have minimal impact on the gray wolf, because it would not significantly affect prey populations and would not increase mortality risk for the gray wolf.

Security/Mortality Risk

Implementing Alternative D could displace wolves. Because wolves are adaptable animals, the expected increase in activity level within the project area would only result in temporary displacement of wolves from habitats that they might otherwise use. Wolves occupying the project area would likely move to adjacent areas further from human development and disturbance. Implementing Alternative D would not significantly increase the mortality risk for the gray wolf. Any increased chance for an encounter between wolves and humans because of the proposed project would present a low risk of mortality for the wolf since the encounter would center around land management activities and not livestock depredation or other high risk activities commonly associated with wolf mortality.

There is no proposed salvage in RHCAs under Alternative D. Salvage of blowdown is still proposed in old growth forest stands under Alternative D. Old growth habitats are important for white-tailed deer; wolves may have more success finding prey in these habitats. The potential for disturbance of gray wolf may be greater in salvage units located in old growth habitats.

Alternative D
Cumulative Effects

The project proposal would not increase cumulative effects to the gray wolf, due, in large part, to its location in an area where wolves are already accustomed to human activity. The existing wolf prey base would be maintained. There are no livestock grazing concerns associated with this project. Road closures in the Swan Valley that have been implemented to increase grizzly bear security have increased wolf security, as well. There would be no increase in mortality risk with implementation of this alternative.

As described under Alternatives B and C, the cumulative effect of past activities, the Mid Swan Project, and future activities, would not preclude or negatively affect gray wolf use of habitats in the area. Adverse cumulative effects are not expected. There appears to be little risk of population loss and species viability would be maintained (Project File Exhibit F-4).

Regulatory Framework and Consistency

The gray wolf was removed from the Federal list of threatened and endangered species on March 28, 2008. After delisting, a lawsuit was filed to reverse the USFWS decision. On July 18, 2008, the court granted an injunction and the “Endangered” status of the gray wolf was reinstated pending final resolution of the lawsuit.

All of the alternatives comply with Section 9, ESA of 1973 as amended. All actions proposed in the Mid Swan Blowdown Salvage Project also comply with the standards and guidelines described in the Flathead Forest Plan. A BA for Threatened and Endangered Wildlife Species was prepared. The impacts of the proposed action were determined to **“may affect – not likely to adversely affect”** the gray wolf. Concurrence is expected from the USFWS at a later date.

Grizzly Bear

Analysis Area

Spatial Bounds

The Mid Swan Blowdown Salvage Project is located in the Northern Continental Divide Grizzly Bear Ecosystem (NCDE), as identified in the Recovery Plan for grizzly bear. The NCDE has been divided into Bear Management Units (BMU's), Areas (BMA's), and Subunits. The BMU Subunits approximate the size of a female grizzly bear's home range. The Mid Swan Blowdown Salvage Project lies within several grizzly bear subunits. Unit 1 is located in the Goat Creek Subunit, and Unit 26 is located in the Piper Creek Subunit. All of the other proposed units are located in the Lion Creek Grizzly Bear Subunit (Map 3-3). These subunits were used to analyze direct, indirect, and cumulative effects to the grizzly bear. Cumulative effects were also analyzed at the larger BMA and BMU scale. Conservation measures for the grizzly bear, including standards and guidelines, have been addressed at the Subunit, BMA, and BMU scale (e.g., Interagency Grizzly Bear Guidelines (IGBG), Forest Plan Amendment 19, and the SVGBCA).

Temporal Bounds

The length of time for effects analysis is approximately 3 to 5 years. This is based on the probable contract length for the Mid Swan Project, the timeframes for related activities, and the reasonably foreseeable actions identified.

Data Sources, Methods, and Assumptions Used

Data used included aerial photography, stand exams, VMAP Data, project area field visits, research literature, and GIS and dataset information for features such as general forest attributes, slope, aspect, habitat type, forest type, elevation, and mapped security core and road density information.

Measurement Indicators

Based on current knowledge of the life history, biology, and ecology of grizzly bear, certain elements are thought to be essential to the conservation of the species. These elements include adequate amounts of denning and forage habitat, and a level of security within their territory that provides for a low risk of displacement or mortality. These elements of grizzly bear habitat, and the anticipated effects to these elements from project implementation, are the measurement indicators used in this analysis

Affected Environment

Historic Condition

In the past, the grizzly bear would have moved freely throughout the Swan Valley in the absence of human development. With Congress' passing of the Homestead Act in 1862, the way was paved for human development in the valley. In 1864, the Federal government granted land to the Great Northern Railroad for rail right-of-way development. The checkerboard ownership pattern found in the Upper Swan Valley today is largely the result of this rail development and later land exchanges. In the early 1900s, people began to move into the Swan Valley in greater numbers and active forest management began. By the mid-1900s active timber management was already changing the

landscape, as was aggressive fire suppression and a recreating public. As human activity levels in the Swan Valley increased, mortality risk for the grizzly bear increased as well.

Existing Condition

The Mid Swan Blowdown Salvage Project lies within the NCDE. It appears that in the NCDE, grizzly bears are increasing their range and have a population beyond recovery plan levels (USFS 2002, USFS 2006). The Grizzly Bear Recovery Plan (USFWS 1993) identifies a minimum NCDE-wide grizzly bear population of 391 (211 bears outside Glacier National Park and 180 bears inside Glacier National Park). Grizzly bear population monitoring using a DNA sampling technique was carried out in 1998 and 2000 in approximately the northern one-third of the NCDE. The sample area included the North Fork of the Flathead River and Glacier National Park. The population estimates from this study area cannot be simply extrapolated to the rest of the NCDE, but it does serve to indicate a population exists in the study area that is contributing substantially to the NCDE-wide population goal. Adjusted for lack of study area closure, the average number of grizzly bears in 1998 was 241; in 2000 the average number of grizzly bears was also 241 (Kendall, et al. 2008). Numbers not adjusted for geographic closure were 319 in 1998 and 336 in 2000.

The Flathead National Forest was also an active participant in the 2004 USGS Northern Continental Divide Grizzly Bear Project, which was designed to derive a population estimate for grizzly bears in the entire Northern Continental Divide Grizzly Bear Ecosystem based on DNA sampling. On September 16, 2008, the population results of the 2004 study were released (USGS 2008). The NCDE grizzly bear population estimate is 765 animals, with the range estimated to be between 715 and 831 individuals. An NCDE-wide population trend study is currently being conducted to compliment the 2004 DNA population study. Estimating population trend is not easy and takes many years to achieve a high degree of scientific confidence. Results from the current population trend study will not be known for at least 2 to 3 years.

The Mid Swan Blowdown Salvage Project is located predominately in lands that have been designated as Management Situation (MS) 1 for grizzly bears, which is identified as areas needed for the survival and recovery of the species (Forest Plan). Unit 1 (15 acres) is the only unit not located in MS-1. This unit is located adjacent to the Swan River State Forest, in MS-2 lands; areas considered either unnecessary for survival and recovery of the grizzly bear, or the need has not yet been determined but habitat resources may be necessary. The entire Mid Swan Blowdown Salvage Project is located within the SVGBCA Area.

The situation for grizzly bears in the salvage area is summarized in the following table:

TABLE 3-50.
GRIZZLY BEARS, POPULATION, AND HABITAT STATUS

Bear Management Unit (BMU)	Subunit	Visual Sightings	Den Sites	Mortality
Bunker Creek	Lion Creek/ Goat Creek	Grizzly bear are known to use lands in these subunits. There have been reliable visual sightings and information on radio-collared grizzlies.	There are no known den sites in the vicinity of the proposed project.	In 2004, there were 5 mortalities in the Swan Valley. From fall 2003 thru winter 2005, there were 9 grizzly bear mortalities in the Swan Valley. Most of these mortalities were management actions as a result of conflicts near human dwellings. Grizzly bear mortalities have continued from 2006 thru 2008, in lesser numbers. The mortalities continue to be human related; highway related deaths (collision with automobiles) and management actions as a result of conflicts near human dwellings.

TABLE 3-50.
GRIZZLY BEARS, POPULATION, AND HABITAT STATUS

Bear Management Unit (BMU)	Subunit	Visual Sightings	Den Sites	Mortality
Mission Range	Piper Creek	Grizzly bear are known to use lands in this subunit. There have been reliable visual sightings and information on radio-collared grizzlies.	There are no known den sites in the vicinity of the proposed project.	(See Above)

Environmental Consequences

Alternative A - No Action
Direct, Indirect, and Cumulative Effects

Since there would be no salvage activities proposed with this alternative, there would be no direct effects to grizzly bear as a result of implementing Alternative A. Indirectly, not implementing the blowdown salvage could increase the risk of a wildfire burning more intensely in the blowdown area, which would result in a change in available forage and cover for grizzly bear over the short and long term. Fires have historically produced both positive and negative effects for grizzly bears. On the negative side, there could be a loss in hiding cover and security. On the positive side, forage habitat would be potentially increased.

Alternative B (Proposed Action)
Direct and Indirect Effects

Denning Habitat

Denning habitat has been characterized as steep (> 45 percent slope), relatively inaccessible slopes with northern and western aspects at or above 5,900 feet in elevation (Mace 1997). The proposed blowdown salvage units are outside of areas that would be expected to provide potential denning habitat for grizzly bear. There is no proposed salvage activity in known or potential grizzly bear denning habitat under Alternative B. There would be no direct or indirect effects to grizzly bear denning habitat as a result of implementing Alternative B.

Cover

Implementation of Alternative B includes 690 acres of blowdown salvage in mature and immature forest stands. Included in this acreage are 61 acres of proposed blowdown salvage in old growth forest habitats. The forest stands where blowdown salvage is proposed currently provide hiding cover for grizzly bear (Map 3-4). Although salvage activities target downed logs, there would be a short-term (1 to 3 years) decrease in hiding cover in the salvage units due to damage from equipment use in the units during salvage logging activity. The loss of hiding cover would be minimal and incidental. Currently, hiding cover is not a limiting factor in the subunits (Project File Exhibit F-2). The SVGBCA has established that each major landowner (e.g., Forest Service, DNRC, and PCTC) will maintain at least 40 percent of the area in cover. The following table displays the current hiding cover situation for

grizzly bear on the subunits where salvage of blowdown is proposed (SVGBCA Monitoring Report, 2008):

TABLE 3-51.
COVER ANALYSIS

Grizzly Bear Subunit	Percent Cover Forest Service	Percent Cover PCTC	Percent Cover DNRC
Goat Creek	67	56	47
Lion Creek	70	66	57
Piper Creek	90	58	99

As per the SVGBCA, vegetative screening, where it exists, would be retained along open roads in the project area to mitigate potential effects to grizzly bear from any short term loss of hiding cover.

Forage Production

Grizzly bears are opportunistic feeders and will prey or scavenge on almost any available food. Plants with high crude protein content and animal matter are the most important food items. The forest stands where blowdown salvage is proposed offer foraging opportunities for grizzly bear, although vegetative forage may be limited where the canopy cover is thicker. Proposed salvage activities in Alternative B would initially decrease the amount of available forage due to ground disturbance; however, forage opportunities would increase over existing conditions within 1 to 3 years as a greater amount of sunlight and moisture reach the forest floor. As with hiding cover, forage is not limited across the subunits.

Temporary Roads

There is no permanent road construction under Alternative B; however, approximately 1.3 miles of temporary road would be needed to access treatment units. Of this amount, 1.0 mile is existing templates (historic road), and approximately 0.3 miles would be newly constructed temporary road. Table 3-52 displays temporary road information for Alternative B.

TABLE 3-52.
PROPOSED TEMPORARY ROADS IN ALTERNATIVE B

Temporary Road	Unit Accessed	Approx. Length (Miles)	Miles in Unit	Miles Out of Unit
Historical	3	0.1	0.1	--
Historical	8	0.4	0.1	0.3
New Construction	8	0.2	0.1	0.1
Historical	18	0.5	--	0.5
New Construction	18	.08	0.04	0.04
TOTAL		**~ 1.3**	**0.34**	**0.94**

Temporary roads would be constructed to the minimum standards necessary for log hauling. Public access would be prohibited on temporary roads and proposed temporary roads would be reclaimed following use. The reclamation work would include the removal of any culverts, water bar placement, seeding, recontouring, and the placement of large woody debris on the reclaimed road. Temporary

roads would not increase the total road density (TRD) in the subunits and would not decrease security core for the grizzly bear. Open road densities (ORD) would increase temporarily during sale activities; this is allowed under the SVGBCA in an Active Subunit.

There is also 0.5 miles of skid trail (e.g. tractor or forwarder; no truck hauling) proposed under Alternative B (Units 16 and 19).

Displacement/Mortality Risk/Security

Design Criteria in Alternative B include the Subunit Activity Schedule in the SVGBCA. Mid Swan Blowdown salvage operations are expected to begin in late 2009 and may continue for approximately 2 years, through 2011. According to the rotation schedule set up in the SVGBCA, the Goat Creek and Piper Creek Subunits are Inactive during this period; salvage harvest in the Goat Creek Subunit (Unit 1 - 15 acres) and the Piper Creek Subunit (Unit 26 - 27 acres) would be conducted between June 16 and August 31 and would not continue for periods of more than 2 consecutive weeks or for more than 30 days aggregate in a given calendar year in the non-denning period for each Subunit. The Lion Creek Subunit is Active during this period; most of the salvage units are located in this Subunit (648 acres); major forest management activities may be conducted throughout the year, with few limitations in an Active Subunit. If salvage activity is not completed by the end of 2011 (Lion Creek), proposed actions would comply with SVGBCA guidelines for an Inactive Subunit. These Design Criteria limit potential long-term displacement of grizzly bears, reduce the mortality risk as a result of project implementation, and help provide for grizzly bear security.

There is a potential for short term displacement of bears from the immediate salvage area during actual implementation of the proposed activities. Old growth habitats and riparian habitats (RHCAs) are important habitats for grizzly bear, frequently providing greater foraging opportunities and greater security (increased hiding cover) than adjacent forest stands. The potential for displacement of grizzly bear is probably higher in Alternative B, because salvage activities are proposed in old growth habitats and in RHCAs.

In order to avoid the potential disturbance of grizzly bears in important spring habitat, management activities that are planned in spring habitat [defined as areas within designated linkage zones and below 5,200 feet (USFWS 1997)], would not occur within the Spring Period (April 1 through June 15). This timing restriction would apply to all of the salvage units in Alternative B.

The temporary roads are not located near security core. Construction and use of the temporary roads would not decrease security core in the subunit.

Existing open roads and closed roads (currently bermed or gated) would be used to conduct the proposed blowdown salvage operations. Use of open roads would not be a change from the existing condition. Roads that are currently closed, but that would be used for proposed activities, would be closed to the general public during the time that they are used for timber management activities. The following table displays the use of closed roads in Alternative B.

TABLE 3-53.

RESTRICTION ROADS – MID SWAN BLOWDOWN SALVAGE PROJECT

Restricted Road #	Units Accessed By Road	Closure Device	Length Opened (miles)
5377	4,8,9	Gate	0.9
9882	5,6,8	Gate	1.4
5381	11	Gate	0.8
10323	15,16,17	Berm	1.0

TABLE 3-53.
RESTRICTION ROADS – MID SWAN BLOWDOWN SALVAGE PROJECT

Restricted Road #	Units Accessed By Road	Closure Device	Length Opened (miles)
10655	22	Berm	0.4
11630	23	Berm	2.4

Actions implemented under Alternative B would not increase the total road density (TRD) in the subunits and would not decrease security core for the grizzly bear. Open road densities (ORD) would increase temporarily during sale activities; this is allowed under the SVGBCA in an Active Subunit.

The contract for the Mid Swan Blowdown Salvage Project would include a clause for the temporary suspension or cessation of activities, if needed, to resolve any grizzly bear/human conflict. A Special Order is in effect that requires all users of NFS lands within the NCDE to store food, garbage, and other bear attractants in a bear resistant manner. Contractors, and others implementing the Mid Swan Blowdown Salvage Project, would be required to comply with this order.

Alternative B (Proposed Action) Cumulative Effects

The Mid Swan Blowdown Salvage Project Area contains established human activities, including vegetation management, road management, private land development, and recreational use. Road construction and logging activity have occurred on Federal and private forested land throughout the Swan Valley. Most major logging activity on NFS lands, including road building, occurred almost a decade ago. Logging and road construction have continued on private timberlands up to the present time.

In 1995 a Conservation Agreement was entered in to by PCTC, DNRC, the Forest Service, and the USFWS. The purpose of the agreement has been to adopt an adaptive management approach to manage the integrated pattern of ownership and development in such a way as to reduce the impact of activities on the grizzly bear in the Swan Valley. Since 1995, the different timberland managers have adhered to the agreement. Adherence to the agreement has helped to ensure that negative cumulative impacts to the grizzly bear do not occur.

Recently, PCTC has offered up tracts of land in the Swan Valley for sale to the Forest Service, conservation buyers, or other private individuals. From 1995 to 2007, 44 parcels totaling approximately 15,705 acres of PCTC lands in the Swan Valley were sold to conservation buyers, private parties, or private parties with conservation easements. Deed restrictions on the land sales include setback standards for streams and sanitation guidelines (e.g., no outdoor barbeque pits, no birdfeeders within reach of bears, and fenced gardens). In Missoula County, a subdivision review is required if parties propose to subdivide 160 acres or more. Despite these provisions, there is the risk that an increase in private parcels of land in the Swan Valley may further fragment wildlife habitat and increase human-bear encounters. As described above, many of the land sales by PCTC have been to conservation buyers, which should help mitigate the risks associated with private land development. During the period 1995 to 2008, the Forest Service has acquired approximately 8,000 acres in the Swan Valley. The acquisition of lands by the Forest Service has helped to maintain natural landscape linkages and to reduce the risk of private land development. It is anticipated that this situation would continue to improve with the recent Montana Legacy Project (See Lands Section).

The primary cause of grizzly bear mortality in the Swan Valley, at least recently, has been human related. Grizzly bear mortalities have occurred primarily as a result of food conditioning and habituation and the ultimate removal from the population due to human safety concerns, or as a result of poaching/illegal actions. In the last few years, there have also been more grizzly bear deaths due to highway traffic (collision with automobiles). Occasionally, grizzly bear mortalities have occurred in the Swan Valley as a result of livestock depredation, but those instances have been rare. To minimize the risk of human-grizzly conflicts in the Swan Valley, the Forest Service and local residents have become very active in providing information and educational programs on living in grizzly bear country and on food storage techniques. In addition, the Forest and local partners have provided bear-proof storage containers and employed a Bear Ranger to educate and enforce a Forest Food Storage Order. There is currently a multi-party monitoring/research effort being conducted in the SVGBCA Area. The objective of the study is to gain information that will ultimately help land owners in the Swan Valley understand and mitigate human-caused grizzly bear mortality. In 2008, a Grizzly Bear Task Force was initiated in the upper Swan Valley, near the community of Condon, Montana. The mission of this task force is to involve the community in a Bear Smart Program.

Alternative B would not contribute significantly to cumulative effects in the area because:

1. There would be no direct or indirect effects to grizzly bear denning habitat;
2. The loss of hiding cover would be minimal;
3. Although forage production would initially decrease, forage opportunities would increase over existing conditions within 1 to 3 years;
4. Design Criteria limit potential long-term displacement of grizzly bears and help provide for grizzly bear security;
5. There would be no decrease in security core;
6. There is a Forest Food Storage Order in place; and
7. Implementation of Alternative B would not significantly increase the mortality risk for grizzly bear.

Alternative C
Direct and Indirect Effects

Under Alternative C, there would be no salvage of blowdown in old growth forest habitat. Old growth forest usually provides higher quality forage and cover than other mature and immature forest stands.

Denning Habitat

The Mid Swan Project salvage units are outside of areas that would be expected to provide potential denning habitat for grizzly bear. There is no proposed salvage activity in known or potential grizzly bear denning habitat under Alternative C.

Cover

Implementation of Alternative C includes 622 acres of blowdown salvage in mature and immature forest stands. The forest stands where blowdown salvage is proposed currently provide hiding cover for grizzly bear. There would be a short-term (1 to 3 years) decrease in hiding cover in the salvage units due to damage from equipment use in the units during salvage logging activity. The loss of hiding cover would be minimal and incidental. Currently, hiding cover is not a limiting factor in the

subunits. Vegetative screening would be retained along open roads in the project area to mitigate potential effects to grizzly bear from any short term loss of hiding cover.

Forage Production

Proposed salvage activities in Alternative C would initially decrease the amount of available forage due to ground disturbance; however, forage opportunities would increase over existing conditions within 1 to 3 years as a greater amount of sunlight and moisture reach the forest floor. As with hiding cover, forage is not limited across the subunits.

Temporary Roads

There is no permanent road construction proposed under Alternative C, however approximately 0.5 miles of temporary road would be needed to access treatment units. The temporary roads are existing templates (historical roads). There would be no newly constructed temporary road under Alternative C. Table 3-52 displays temporary road information for Alternative C.

TABLE 3-54.
PROPOSED TEMPORARY ROADS IN ALTERNATIVE C

Temporary Road	Unit Accessed	Approx. Length (Miles)	Miles in Unit	Miles Out of Unit
Historical	3	0.1	0.1	--
Historical	8	0.4	0.1	0.3
TOTAL		**0.5**	**0.2**	**0.3**

Public access would be prohibited on temporary roads and proposed temporary roads would be reclaimed following use. The reclamation work would include the removal of any culverts, water bar placement, seeding, re-contouring, and the placement of large woody debris on the reclaimed road. Temporary roads would not increase the TRD in the subunits and would not decrease security core for the grizzly bear

There is also 0.5 miles of skid trail (e.g., tractor or forwarder; no truck hauling) proposed under Alternative C (Units 16 and 19).

Displacement/Mortality Risk/Security

The Design Criteria in Alternative C include the Subunit Activity Schedule in the SVGBCA. Mid Swan Blowdown salvage operations are expected to begin in late 2009 and could continue for approximately 2 years through 2011. According to the rotation schedule set up in the SVGBCA, the Goat Creek and Piper Creek Subunits are Inactive during this period; salvage harvest in the Goat Creek Subunit (Unit 1 - 15 acres) and the Piper Creek Subunit (Unit 26 - 27 acres) would be conducted between June 16 and August 31 and would not continue for periods of more than 2 consecutive weeks or for more than 30 days aggregate in a given calendar year in the non-denning period for each subunit. The Lion Creek Subunit is Active during this period; most of the salvage units are located in this subunit (648 acres); major forest management activities may be conducted throughout the year, with few limitations in an Active subunit. If salvage activity is not completed by the end of 2011 (Lion Creek), proposed actions would comply with SVGBCA guidelines for an Inactive Subunit. These Design Criteria limit potential long-term displacement of grizzly bears, reduce the mortality risk as a result of project implementation, and help provide for grizzly bear security.

There is a potential for short term displacement of bears from the immediate salvage area during actual implementation of the proposed activities.

In order to avoid the potential disturbance of grizzly bears in important spring habitat, management activities that are planned in spring habitat, which is defined as areas within designated linkage zones and below 5,200 feet (USFWS 1997), would not occur within the Spring Period (April 1 through June 15). This timing restriction would apply to all of the salvage units in Alternative C.

The temporary roads are not located near security core. Construction and use of the temporary roads would not decrease security core in the subunit.

Existing open roads and closed roads (currently bermed or gated) would be used to conduct the proposed blowdown salvage operations. Use of open roads would not be a change from the existing condition. Roads that are currently closed, but that would be used for proposed activities, would be closed to the general public during the time that they are used for timber management activities. The following table displays the use of closed roads in Alternative C:

TABLE 3-55.
RESTRICTION ROADS – MID SWAN BLOWDOWN SALVAGE PROJECT – ALTERNATIVE C

Restricted Road #	Units Accessed By Road	Closure Device	Length Opened (miles)
5377	4,8,9	Gate	0.9
9882	6,8	Gate	0.9
5381	11	Gate	0.8
10323	15,16,17	Berm	1.0
10655	22	Berm	0.4
11630	23	Berm	2.4

Actions implemented under Alternative C would not increase the total road density (TRD) in the subunits and would not decrease security core for the grizzly bear. Open road densities (ORD) would increase temporarily during sale activities; this is allowed under the SVGBCA in an Active Subunit.

The contract for the Mid Swan Blowdown Salvage Project would include a clause for the temporary suspension or cessation of activities, if needed, to resolve any grizzly bear/human conflict. A Special Order is in effect that requires all users of NFS lands within the NCDE to store food, garbage, and other bear attractants in a bear resistant manner. Contractors, and others implementing the proposed project, would be required to comply with this order.

Alternative C
Cumulative Effects

Cumulative effects in Alternative C would be the same as the cumulative effects described above in Alternative B. The Mid Swan Blowdown Salvage Project Area contains established human activities, including vegetation management, road management, private land development, and recreational use.

Alternative C would not contribute significantly to cumulative effects in the area because:

1. There would be no direct or indirect effects to grizzly bear denning habitat;
2. The loss of hiding cover would be minimal;
3. Although forage production would initially decrease, forage opportunities would increase over existing conditions within 1 to 3 years;
4. There would be no displacement of grizzly bear from important old growth habitats;
5. Design Criteria limit potential long-term displacement of grizzly bears and help provide for grizzly bear security;
6. There would be no decrease in security core;
7. There is a Forest Food Storage Order in place; and
8. Implementation of Alternative C would not significantly increase the mortality risk for grizzly bear.

Alternative D
Direct and Indirect Effects

Under Alternative D there would be no salvage of blowdown in RHCA's. Blowdown salvage would still occur in old growth habitats.

Denning Habitat

There is no proposed salvage activity in known or potential grizzly bear denning habitat under Alternative D. There would be no direct or indirect effects to grizzly bear denning habitat as a result of implementing Alternative D.

Cover

Implementation of Alternative D includes 636 acres of blowdown salvage in mature and immature forest stands. Included in this acreage are 59 acres of proposed blowdown salvage in old growth forest habitats. The forest stands where blowdown salvage is proposed currently provide hiding cover for grizzly bear. Although salvage activities target downed logs, there would be a short-term (1 to 3 years) decrease in hiding cover in the salvage units due to damage from equipment use in the units during salvage logging activity. The loss of hiding cover would be minimal and incidental. Currently, hiding cover is not a limiting factor in the subunits. Vegetative screening would be retained along open roads in the project area to mitigate potential effects to grizzly bear from any short term loss of hiding cover.

Forage Production

Proposed salvage activities in Alternative D would initially decrease the amount of available forage due to ground disturbance; however, forage opportunities would increase over existing conditions within 1 to 3 years as a greater amount of sunlight and moisture reach the forest floor. As with hiding cover, forage is not limited across the subunits.

Temporary Roads

There is no permanent road construction proposed under Alternative D. Approximately 1.1 miles of temporary road would be needed to access treatment units. Of this amount, 1.0 mile are existing templates (historical roads), and approximately 0.1 miles would be newly constructed temporary road. Table 3-56 displays temporary road information for Alternative D.

TABLE 3-56.
PROPOSED TEMPORARY ROADS IN ALTERNATIVE D

Temporary Road	Unit Accessed	Approx. Length (Miles)	Miles in Unit	Miles Out of Unit
Historical	3	0.1	0.1	--
Historical	8	0.4	0.1	0.3
Historical	18	0.5	--	0.5
New Const.	18	0.08	0.04	0.04
TOTAL		**~ 1.1**	**0.24**	**0.84**

Temporary roads would be constructed to the minimum standards necessary for log hauling. Public access would be prohibited on temporary roads and proposed temporary roads would be reclaimed following use. The reclamation work would include the removal of any culverts, water bar placement, seeding, re-contouring, and the placement of large woody debris on the reclaimed road. Open road densities would increase temporarily during sale activities; this is allowed under the SVGBCA in an Active Subunit.

There is also 0.5 miles of skid trail (e.g., tractor or forwarder; no truck hauling) proposed under Alternative D (Units 16 and 19).

Displacement/Mortality Risk/Security

Design Criteria in Alternative D include the Subunit Activity Schedule in the SVGBCA. These Design Criteria, described above in Alternatives B and C, limit potential long-term displacement of grizzly bears, reduce the mortality risk as a result of project implementation, and help provide for grizzly bear security.

There is a potential for short term displacement of bears from the immediate salvage area during actual implementation of the proposed activities. Old growth habitats are important habitats for grizzly bear, frequently providing greater foraging opportunities and greater security (increased hiding cover) than adjacent forest stands. The potential for displacement of grizzly bear is probably higher in Alternative D than in Alternative C, because salvage activities are proposed in old growth habitats.

In order to avoid the potential disturbance of grizzly bears in important spring habitat, management activities planned in spring habitat would not occur within the Spring Period (April 1 through June 15). This timing restriction would apply to all of the salvage units in Alternative D.

The temporary roads are not located near security core. Construction and use of the temporary roads would not decrease security core in the subunit.

Existing open roads and closed roads (currently bermed or gated) would be used to conduct the proposed blowdown salvage operations. Use of open roads would not be a change from the existing condition. Roads that are currently closed, but that would be used for proposed activities, would be closed to the general public during the time that they are used for timber management activities. The following table displays the use of closed roads in Alternative D.

TABLE 3-57.
RESTRICTED ROADS – MID SWAN BLOWDOWN SALVAGE PROJECT – ALTERNATIVE D

Restricted Road #	Units Accessed By This Road	Closure Device	Length Opened (miles)
5377	4,8,9	Gate	0.9
9882	5,6,8	Gate	0.9
5381	11	Gate	0.8
10323	15,16,17	Berm	1.0
10655	22	Berm	0.4
11630	23	Berm	2.4

Actions implemented under Alternative D would not increase the TRD in the subunits and would not decrease security core for the grizzly bear. Open road densities would increase temporarily during sale activities; this is allowed under the SVGBCA in an Active Subunit.

As described above in Alternatives B and C, the contract for the Mid Swan Blowdown Salvage Project would include a clause for the temporary suspension or cessation of activities, if needed, to resolve any grizzly bear/human conflict, and a Special Food Order is in effect for the Mid Swan Blowdown Salvage Project Area.

Alternative D
Cumulative Effects

Cumulative effects in Alternative D would be the same as the cumulative effects described above in Alternative B. The Mid Swan Blowdown Salvage Project Area contains established human activities, including vegetation management, road management, private land development, and recreational use.

Alternative D would not contribute significantly to cumulative effects in the area because:

1. There would be no direct or indirect effects to grizzly bear denning habitat;
2. The loss of hiding cover would be minimal;
3. Although forage production would initially decrease, forage opportunities would increase over existing conditions within 1 to 3 years;
4. There would be no displacement of grizzly bear from RHCAs;
5. Design Criteria limit potential long-term displacement of grizzly bears and help provide for grizzly bear security;
6. There would be no decrease in security core;
7. There is a Forest Food Storage Order in place; and
8. Implementation of Alternative D would not significantly increase the mortality risk for grizzly bear.

Regulatory Framework and Consistency

The grizzly bear is currently classified as Threatened in Montana and is protected under the ESA. The Mid Swan Blowdown Salvage Project is located in lands that have been designated as MS-1 and MS-2 for grizzly bear (Forest Plan). The Mid Swan Blowdown Salvage Project is located within the SVGBCA Area.

Forest-wide management direction for grizzly bear is included in the Forest Plan, including Amendments 8, 9, 11, and 19. Interagency Grizzly Bear Guidelines (1986) were adopted as Forest Plan Appendix OO.

The alternatives comply with Section 9, ESA of 1973 as amended, Forest Plan as amended, the Interagency Grizzly Bear Guidelines, and the SVGBCA. A BA for Threatened and Endangered Wildlife Species was prepared. The impacts of the proposed action were determined to **"may affect – not likely to adversely affect"** the grizzly bear. Concurrence is expected from the USFWS at a later date.