ISSUE 1: BALD EAGLE

Changes from the Draft to the Final EIS

Figures 3.1.1, 3.1.2, and 3.1.3 were updated to include 2004 and 2005 monitoring data. Language was added interpreting productivity data on sensitivity of Narrows and Ridge bald eagle pairs to disturbance, and the description of the effects of Travel Plan alternatives on these territories was revised. The effects of Alternative 7-M on bald eagles were analyzed. The cumulative effects analysis was revised and includes consideration of a broader range of other programs and activities potentially affecting bald eagles. A discussion of the effects of backcountry airstrips on bald eagles as proposed under Alternatives 3 and 7-M was added. Numerous editorial changes were also made.

Affected Environment

Bald eagles may be affected by a variety of human activities that cause disturbance. Responses of eagles may range from abandonment of nest sites to temporary avoidance (temporal and spatial) of human activities. Responses may also vary depending on type, intensity, duration, timing, predictability and location of human activities. Individual pairs may respond differently to human disturbances because some bald eagles are more tolerant than others. Generally, eagles are most sensitive to human activities during the nest building, egg laying, and incubation period, which is normally from February 1 to May 30. Human activities during this time are more likely to cause nest abandonment and reproductive failure. Once young have hatched, a breeding pair is less likely to abandon the nest. However, eagles may leave the nest due to prolonged disturbances, exposing young to predation and adverse weather conditions (Montana Bald Eagle Working Group 1994:4, 22).

Most types of human travel are capable of causing disturbance to bald eagles under the right circumstances. Several studies have found that motorized vehicles including automobiles, ATVs, light planes and motorboats caused disturbance to breeding bald eagles (Grubb et al. 1992:449; Stalmaster and Kaiser 1999:36). Given that the literature shows a wide variety of motorized vehicles may cause disturbance to nesting eagles, it can be inferred that snowmobiles do as well, although published data are lacking. Foot travel such as hiking, skiing, and snowshoeing can also lead to substantial disturbance of nesting eagles (Stalmaster and Kaiser 1999:37). Eagles may learn to tolerate human activities occurring at predictable times, frequencies, intensities, and spatial limits (Harmata and Oakleaf 1992:45). Therefore, activities such as motor vehicle use on established routes may be much less disturbing to them than more unpredictable activities like off-trail motor vehicle use.

The Greater Yellowstone Bald Eagle Management Plan (GYBEMP) uses nest site management zones as one strategy to facilitate conservation of bald eagles (Greater Yellowstone Bald Eagle Working Group 1996:22-25). Zone I is the area within 400 meters (1/4 mile) of a nest where birds on the nest are likely to be especially sensitive to disturbance. The GYBEMP recommends that human activity not exceed minimal levels during the nesting season (approximately February 1 to August 15), with light activity allowable during the rest of the year. Zone II is within 800 meters (1/2 mile) of the active nest and all alternate nests, and is typically heavily used for foraging and

perching. The GYBEMP recommends that light human activity levels not be exceeded during the nesting season, with moderate use allowable during the rest of the year. Zone III is most of the home range used by eagles during the nesting season, generally within 4 km (2.5 miles) of the nest, and contains important foraging areas while providing management buffers for zones I and II. The GYBEMP recommends that moderate human activity levels not be exceeded.

Bald eagle populations in the United States have increased over the past several decades. All recovery criteria have been met, and the species was proposed for de-listing by the U.S. Fish and Wildlife Service in 1999 (although this has not yet occurred). Bald eagle nesting on the Gallatin National Forest is generally limited to Hebgen and Earthquake Lakes. There was an active nest located on Bear Creek near Gardiner in the 1990s, but this nest has not been occupied for several years. Hebgen and Earthquake Lakes provide the best bald eagle habitat because they are large water bodies with abundant fish populations (Stangl 2000:V-1). Bald eagles are designated by the Gallatin Forest Plan (USDA Forest Service 1987:II-18, II-19) as a Management Indicator Species, which is a species *"whose habitat is most likely to be affected by Forest management activities"* and whose populations will be monitored for change. Bald eagle productivity in this area has been monitored by the Forest since 1977. The first nest was discovered in that year, and an increasing trend in the number of occupied nests has been observed since then (Figure 3.1.1). The number of young fledged each year also shows an increasing trend that reflects the increasing number of occupied nests (Figure 3.1.2). The average number of young fledged per nest each year was 1.1, which was well above the value of 0.7 reported to be necessary to maintain a stable population (Greater Yellowstone Bald Eagle Working Group 1996:11). However, variation in productivity from year to year was high with no apparent trend (Figure 3.1.3). Variability in production from year to year could be influenced by many factors such as the number of years of breeding experience each pair has, population density (Montana Bald Eagle Working Group 1994:3), exposure and tolerance to human activities, and environmental factors. Periods of unusually cold, wet weather during egg laying, incubation, or hatching frequently lead to low chick survival (Swenson et al. 1986:28).

Stangl (2000:VI-4 through VI-25) provided management recommendations for all the bald eagle territories known to exist on Hebgen and Earthquake Lakes at the time. Characteristics of each known territory along with the pertinent management recommendations from Stangl (2000:VI-4 through VI-25) are discussed below.

Horse Butte

This territory on the Horse Butte Peninsula of Hebgen Lake was detected in 1977 and has been monitored annually since then. It has been the least productive territory in the analysis area, with young fledged only twice since 1990 even though the territory was active each year. The territory is characterized by a high level of human activity during both summer and winter. Forest Road #610, a major access route to Hebgen Lake, passes within Zones I, II and III of the nest. The Horse Butte Lookout Road is within Zone II, while several non-Forest Service roads through Zones I, II and III provide access to housing developments on private land. In winter, the groomed Horse Butte snowmobile trail passes through Zones I, II and III of the nest. Additionally, heavy off-trail snowmobile use occurs within Zones II and III of the nest. A Special Order closing an approximately 75-acre area encompassing much of Zone I of the territory from December 1 to

August 15 to all human activity (including snowmobile use) has been implemented since 1994. Stangl (2000:VI-8) recommended that this closure continue to be enforced, along with further restricting snowmobiles to groomed trails only on Horse Butte or closing Zone II of this territory to all snowmobiling. An additional recommendation was to consider obliteration of additional spur roads along the Madison Arm and Horse Butte.

Ridge

This territory is also located on the Horse Butte Peninsula of Hebgen Lake, and has been monitored annually since it was first detected in 1994. This pair has successfully fledged young during 7 of the 12 years it has been monitored, and is among the least productive territories in the analysis area. A two-track administrative road that currently receives little summer use passes very close to the nest within Zone I, while Forest Road #610 is a major access route for Hebgen Lake located within Zones II and III. A groomed snowmobile trail is within Zones II and III of the nest, and heavy off-trail snowmobile use occurs within Zones I, II and III of the nest. The snowmobile trail is generally groomed from December 1 to March 31, although in some years lack of snow cover terminates snowmobile use before then, while in heavy snow years, snowmobile use may continue into early April. Evidence indicates that these birds may be sensitive to off-trail snowmobile use, although insufficient data exist to definitively identify snowmobile use as a contributing factor to its lower productivity. Stangl (2000:VI-8) recommended that further restrictions on snowmobiling, such as restricting them to groomed trails only on Horse Butte or closing Zones I & II of this territory to all snowmobiling. An additional recommendation was to consider obliteration of additional spur roads along the Madison Arm and Horse Butte.

Narrows

This territory, located on the Horse Butte Peninsula of Hebgen Lake, was detected in 1995 and has been monitored annually since then. It has successfully fledged young nine of the eleven years it has been monitored. An open two-track Forest Service road passes within Zones I and II of the nest, as does a groomed snowmobile trail. Zones I, II and III receive heavy off-trail snowmobile use as well. The snowmobile season is the same as was described for the Ridge nest. The Narrows territory has been highly productive despite snowmobile use on and off the groomed trail in close proximity to the nest, indicating that these birds are tolerant of human activity. Stangl (2000:VI-8) recommended that further restrictions on snowmobiling, such as restricting them to groomed trails only on Horse Butte or closing Zones I & II of this territory to all snowmobiling. An additional recommendation was to consider obliteration of additional spur roads along the Madison Arm and Horse Butte.

Moonlight

This territory is located near the mouth of Moonlight Creek on Hebgen Lake. Young were fledged in 15 of the 16 years it has been monitored since it was first detected in 1990. Forest Road #167, which is the major access road for the west side of Hebgen Lake, passes within Zones I, II and III of this nest. The road is open for public passenger car use in the summer and snowmobile use in the winter. The area is open to off-designated route snowmobile use but there are no groomed trails and heavy forest cover precludes most snowmobile use off the roadway. Winter travel was not

identified as an issue for this territory, but a recommendation was made to obliterate spur roads accessing Moonlight Bay (Stangl 2000:VI-19).

Canyon

This territory located on Earthquake Lake was first detected in 1990. Young were fledged from this territory during 9 of 14 years. Zone I of this territory is within Earthquake Lake, and the steep, inaccessible terrain south of the Lake and has no summer travel routes. The only summer travel routes within Zone II are associated with the Beaver Creek Campground. Zones I, II and III are open for snowmobile use, but there are no groomed trails and the area south of the nest cannot be accessed by snowmobiles. A portion of Zones II and III north of Earthquake Lake are open to snowmobiles, but receive very light use. Winter travel was not identified as an issue for this nest, but a recommendation was made to not improve Forest Road #989 for summer travel beyond what is required for safety purposes (Stangl 2000:VI-17).

Halford Camp

This territory located on Earthquake Lake was detected in 2003, and has successfully fledged chicks in one of three years since then. There are no summer or winter travel routes within Zone I of the nest. The Campfire Lodge Road provides passenger car access to a popular parking and picnic area within Zone III, and an administrative road to Ghost Village that also receives heavy summer non-motorized use is located within Zones II and III. Much of Zone II is open to snowmobile use, but there are no groomed or designated trails and it receives only very light use. There is a designated ski/snowshoe trail within Zone III. This territory was detected after Stangl (2000) was completed, so there were no recommendations for this territory.

Grayling Arm

Travel planning is not issue for this nest located on the Grayling Arm of Hebgen Lake. There is only one low-standard administrative road that receives light use for power line right-of-way maintenance within Zones I, II and III of the nest. All of Zones I, II and III are open to snowmobile use, but there are no groomed trails and off-trail use is largely precluded by forest cover. Neither winter nor summer travel were identified as an issue for this territory in Stangl (2000:VI-20, VI-21). Therefore, direct and indirect effects of the proposed travel plan to this nest will not be discussed further.

Quake Lake

Travel planning is not issue for this nest located on Earthquake Lake. U.S. Highway 287 is within Zone II of the nest, but there are no other summer or winter travel routes within Zones I, II and III. The area receives little or no winter use, either motorized or non-motorized, due to the steep and inaccessible terrain. Neither winter nor summer travel were identified as an issue for this territory in Stangl (2000:VI-13 through VI-15). Therefore, direct and indirect effects of the proposed travel plan to this nest will not be discussed further.

Direct and Indirect Effects

Analysis Methodology

The area used to analyze the impacts of travel planning on bald eagles was the Hebgen Basin and Lionhead Travel Planning Areas (TPAs), because these are the only known areas used by nesting bald eagles on the Forest and effects of human activities on eagle productivity are not expected outside this area. Alternative 1 was considered the current condition for winter travel, while Alternative 2 was the current condition for summer travel. Nest sites were plotted and buffered by 400 meters and 800 meters. They were then displayed with Travel Plan alternatives to allow an assessment of travel within Zones I and II of each nest. Both winter and summer travel routes were included, along with open motorized and non-motorized travel routes and area closures. Seasonal restrictions on winter and summer travel within bald eagle territories were evaluated. Because restrictions on travel within bald eagle territories were very similar across alternatives, there were minimal differences in effects for all territories analyzed and seasonal restrictions received no further consideration.

Winter Travel

Horse Butte Territory

Alternatives 1-4

Under these alternatives, the Horse Butte snowmobile trail system would be groomed and there would be no restrictions on off-designated-route snowmobile use except for the 75-acre closure area within Zone I. Violations of this closure area during the nesting season have been documented in the past and would likely continue in the future, leading to some disturbance within Zone I. However, more disturbance to eagles from snowmobile use would occur in Zones II and III. Open water can be found on the Madison Arm of Hebgen Lake during the early nesting season, and the Horse Butte eagles have been documented to use this area heavily for perching and foraging at this time of the year (Stangl 2000:IV-13). Off-designated-route snowmobile use would cause disturbance of birds foraging in this important area during that part of the nesting season when forage is most limited due to ice cover. These alternatives would not meet the intent of the GYBEMP guidelines for management of Zones II and III, which recommend that light and moderate activity levels not be exceeded. Additionally, these alternatives would only partially meet the recommendations from Stangl (2000:VI-8) for management of snowmobiling on Horse Butte because there would be no restriction on off-designated-route snowmobile use or snowmobile closure within Zone II.

Alternatives 5-6

Snowmobiles would be restricted to groomed routes on Horse Butte and a snowmobile closure would be implemented along the Madison Arm of Hebgen Lake.[1] These alternatives would come closer to meeting the intent of the GYBEMP guidelines, which call for light to moderate activity

[1] In order to consider the potential benefits to bald eagle, Alternatives 5 and 6 were modified to restrict snowmobiles to designated routes on Horse Butte (i.e. roughly the National Forest lands bordered by private land to the east and Hebgen Lake to the north, west and south).

levels within Zones II and III. Snowmobile use of the groomed trail would still exceed GYBEMP recommendations, but would likely cause less disturbance to foraging and perching eagles in Zones II and III due to the more predictable nature of the use compared to off-designated-route snowmobiling. Management recommendations for this territory in Stangl (2000:VI-8) would be met. However, because snowmobile use off the groomed trail is well-established and the open terrain encourages this type of use, it is likely that violations of this restriction will occur despite efforts to enforce it. Because it is impossible to quantify what level of violations would occur, it is uncertain whether management of snowmobile use under these alternatives would lead to a meaningful decrease in disturbance to eagles.

Alternative 7-M
Effects to the Horse Butte territory would be similar to those under alternatives 1-4, except that a snowmobile closure would be implemented along the Madison Arm of Hebgen Lake and the Madison River. This would provide greater area for the Horse Butte pair to forage in without disturbance from snowmobiles. It is would also largely meet the recommendation made by Stangl (2000, page VI-8) to restrict snowmobile use adjacent to the Madison Arm.

Ridge and Narrows Territories

Alternatives 1-4 and 7-M
Impacts to nesting bald eagles in these territories from snowmobile use would be similar to those described for the Horse Butte territory. An important exception is that these nests would have no area closure for Zone I, as the Horse Butte territory would. Snowmobile use off the groomed trail regularly occurs through much of Zone I around both territories through late March, and this would continue under these alternatives. There would be high potential for disturbance of nesting birds during the part of the nesting season when they are most sensitive to disturbance. The Narrows birds appear to be highly tolerant of snowmobile use and the effects of snowmobile use under these alternatives would have minimal effects on them. The Ridge birds may be more sensitive to disturbance from snowmobile use, and could continue to exhibit lower than average productivity under these alternatives. GYBEMP guidelines recommending that minimal activity levels not be exceeded within Zone I would not be met for either territory under these alternatives. Recommendations for restricting snowmobile use within these territories from Stangl (2000:VI-8) would also not be met.

Alternatives 5-6
Impacts to nesting bald eagles in these territories from snowmobile use under these alternatives would be similar to those described for the Horse Butte territory. The potential for disturbance of nesting eagles from snowmobile use within Zone I of both territories could be considerably less than under Alternatives 1-4 and 7-M, because snowmobiles would be restricted to groomed trails. There is no groomed trail within Zone I of the Ridge nest. Elimination of off-trail snowmobile use would reduce disturbance to the Ridge territory. These birds appear sensitive to snowmobile use, and improved productivity could result under these alternatives. The Narrows territory would still have a groomed trail passing through Zone I, but this pair is tolerant of snowmobile use and the effects of the groomed trail would be minimal. As described for the Horse Butte territory, the terrain surrounding much of the Ridge and Narrows territories is highly conducive to snowmobile use off the groomed trail, and violations of the restriction would be likely. Because it is uncertain

how frequently violations would occur, it is impossible to predict what effect this would have on nesting eagles. These alternatives would come closer to meeting the intent of the GYBEMP guidelines calling for minimal activity levels within Zones I, but use of the groomed trail would likely exceed the recommendations. Management recommendations for this territory in Stangl (2000:VI-8) would be met.

Moonlight Territory

Alternatives 1 through 7-M
Winter travel within the management zones of this territory would be managed the same under all alternatives. Snowmobiles would continue to use Forest Road #176 within Zones I, II and III. This road does not lead to any destination snowmobiling areas, and therefore snowmobile traffic is lighter than in many other places around Hebgen Lake that are open to snowmobiling. Also, snowmobile use off the road is discouraged by forest cover in most places. It is likely that this pair has become habituated to snowmobile traffic, and that this would continue to be the case under these alternatives. Effects of snowmobile use would be minor.

Canyon Territory

Alternatives 1-4 and 7-M
Zones I, II and III would be open to snowmobile use under these alternatives. However, Zone I is inaccessible by snowmobiles due to the steep terrain. The terrain in portions of Zones II and III is technically accessible, but the area is not a snowmobile destination and receives only very light use, which is expected to continue. Additionally, any disturbance from winter travel would occur across Earthquake Lake from the nest where impacts to nesting and foraging eagles would be very limited. GYBEMP guidelines would be met in all management zones under these alternatives, given the infrequent snowmobile use the area receives.

Alternatives 5-6
All of Zones I, II and III would be closed to snowmobile use under these alternatives. However, any difference in effects to bald eagles from Alternatives 1-4 would be quite small due to the low use the area would receive.

Halford Camp

Alternatives 1-4
Management of snowmobile use and effects to bald eagles in this territory would be the same as described for the Canyon territory under these alternatives. The exception is that there would be a designated ski/snowshoe trail within Zone III of this territory. The effects to bald eagles from this use would be discountable, because it is located on a high bench across the lake from the nest away from open water areas that are most important for foraging.

Alternatives 5-6
Management of snowmobile use and effects to bald eagles in this territory would be the same as described for the Canyon territory under these alternatives.

Alternative 7-M
Under this alternative, there would be a designated snowmobile route within Zone II of this territory. However, off-trail snowmobile use would be prohibited in the surrounding area. Snowmobile use would continue to be so low that the effects to bald eagles would be discountable.

Summer Travel

Horse Butte Territory

Alternatives 1 through 7-M
Summer travel in the management zones for this territory would be the same under all alternatives, and would be the same as the existing condition. Forest Roads #610, #6697 and the Horse Butte Lookout Road would continue to facilitate heavy recreational use (fishing, boating, picnicking, sight-seeing, and numerous other recreational activities) within all management zones of this territory, including important foraging and perching areas. Disturbance to nesting eagles in Zone I would be minimized by continued implementation of the existing 75-acre closure. GYBEMP guidelines for recommended human activity levels within Zones I, II and III would be exceeded. However, eagles would have more options for foraging places by the time the road system opened for motor vehicle use in early May, compared to winter, because ice cover would be rapidly receding on Hebgen Lake.

Ridge Territory

Alternatives 1 through 7-M
Summer travel in the management zones for this territory would be the same under all alternatives, and would be the same as the existing condition. Forest Road #610 would continue to facilitate heavy summer recreational use (fishing, boating, picnicking, sight-seeing, and numerous other recreational activities) within Zones II and III of this territory, including important foraging areas. Zone I would have no travel routes other than a two-track project road that would be closed to public use. Some illegal use of this road would be expected because of the open, gentle terrain, but it is uncertain how frequently violations would occur and therefore how much disturbance to the nesting eagles there would be.

Narrows Territory

Alternatives 1-5
Forest Road #2530, which passes through Zones I and II of this territory, would be open for high-clearance vehicle use under these alternatives. While this is a low-standard road that receives much less use than main access roads on Horse Butte, some disturbance to nesting eagles would likely result.

Alternative 6
Forest Road #2530 would be managed for administrative use under this alternative. Although some illegal use of the road would be expected, overall disturbance to nesting eagles would be lower under this alternative.

Alternative 7-M
Forest Road 32530 would be managed for project use under this alternative. The least amount of disturbance to the Narrows bald eagles from summer travel would occur under this alternative.

Moonlight Territory

Alternatives 1 through 7-M
Management of summer travel and resulting effects to the Moonlight territory eagles would be the same under all alternatives. Forest Road #167 would be within Zones I, II and III. This is a main access road for the west side of Hebgen Lake, and it receives substantial use from recreationists and summer homeowners along the lake. Disturbance levels from motorized vehicle use on the road would exceed GYBEMP guidelines for Zones I and II. However, the road was constructed and had been used many years before the territory was established, and this pair has been among the most productive on Hebgen Lake. It is likely that this pair has become habituated to traffic along the road, and that this would continue to be the case. Recreational use along the lake facilitated by summer travel would be more likely to disturb nesting birds, but under all alternatives, there would be no motorized access routes leading directly to the lake in the vicinity of the Moonlight nest. Effects to nesting bald eagles from summer travel in this territory would be continue to be minor.

Canyon Territory

Alternatives 1 through 7-M
Summer travel in Zones I, II and III would be the same under all alternatives. The only motorized travel routes would be within the Beaver Creek Campground, in Zones II and III. This pair established their territory here long after the campground was developed and used. The routes are on the opposite side of Earthquake Lake from the nest, and would contribute little disturbance to foraging eagles because they are positioned on a bench above the lake and far enough back from the bank. Additionally, the roads do not open to motorized traffic until late May when the campground opens, by which time eagle sensitivity to disturbance decreases (Montana Bald Eagle Working Group:22). Therefore, the effects of summer travel would be minor.

Halford Camp

Alternatives 1 through 7-M
Summer travel in Zones I, II and III would be the same under all alternatives. There would be no summer travel routes within Zone I. The Campfire Lodge Road would continue to provide access for a large number of summer recreational users (mostly anglers) to Zones II and III, and the administrative road to the Crazy House would be heavily used for foot access to Earthquake Lake in Zones II and III. Zone I of the territory would be free of disturbance related to summer travel, but some disturbance to foraging eagles in Zones II and III would result. Because this territory has only been monitored for one year, this pair's tolerance of human disturbance is difficult to assess. GYBEMP guidelines for managing disturbance within bald eagle territories would be met for Zone I, but exceeded for Zones II and III.

Cumulative Effects

Net Effects of Past and Present Programs and Activities

A variety of human activities that could cause disturbance to nesting and foraging eagles other than travel on Forest Service lands occur within the analysis area (see cumulative effects worksheet for bald eagle issue in project record, Pils, 1/25/2006). These activities undoubtedly influence the way bald eagles use available habitat, leading to reduced foraging efficiency and periodic disturbance to nesting birds in most known bald eagle territories within the analysis area.

Projected Combined Effects of Reasonably Foreseeable Programs and Activities

The effects of most activities on bald eagles in the analysis area are expected to remain relatively constant in the foreseeable future, with the exception of dispersed recreation. This is an important source of disturbance for many territories within the analysis area. Therefore, it is likely that the cumulative disturbance of human activity to nesting and foraging bald eagles will continue to increase within the analysis area.

Cumulative Effects of Past, Present and Reasonably Foreseeable Programs and Activities with the Travel Plan Alternatives

Alternatives 1-4 and 7-M
Snowmobile use would probably be the most prevalent source of disturbance to bald eagles in the analysis area during the early nesting period, and would therefore contribute substantially towards cumulative effects on bald eagles. During the snow-free season, dispersed recreational activities such as fishing and boating are probably equally important sources of disturbance to nesting and foraging bald eagles relative to summer travel. These effects may be less important than winter travel because they occur later in the nesting season, when sensitivity to disturbance decreases.

Productivity trends for bald eagles within the analysis area have been consistent with those from an increasing population despite the large amount of human activity occurring throughout much of the analysis area (Figures 3.1.1, 3.1.2, and 3.1.3). An increasing trend in the number of occupied nests within the analysis area is readily apparent. The number of chicks fledged per nest averaged 1.1 during the period 1977-2005, which is consistent with the value of 1.05 reported for the entire Greater Yellowstone bald eagle population (Greater Yellowstone Bald Eagle Working Group 1996, page 7) and exceeds the national Recovery Plan objective of 1.0 young per occupied breeding area (Montana Bald Eagle Working Group 1994, page 15). Some eagles may become tolerant of human activities (Stalmaster and Kaiser 1998, page 40), and this is likely the case for many of the pairs within the analysis area. Bald eagles within the analysis area should continue to exhibit characteristics of a productive population until it nears biological carrying capacity under these alternatives. As recreational activities increase within the analysis area it is possible that a threshold may be reached where cumulative disturbance increases beyond the tolerance levels of most birds. Productivity could begin to decline under this scenario, but it is unknown how much increase in human activity would be necessary before that threshold is reached.

Alternative 5-6
Alternatives 5 and 6 would result in lower cumulative disturbance of nesting bald eagles compared to alternatives 1-4 and 7-M because they incorporate off-designated-route snowmobile closures within important bald eagle nesting and foraging habitat on Horse Butte. This could lead to improved productivity for the Ridge territory, but would likely not for the Narrows territory (which is already highly productive because of these birds' apparent high tolerance for snowmobile use) or the Horse Butte pair (which would continue to be exposed to high levels of disturbance from human activity on adjacent private lands within Zones I and II). Bald eagle productivity across the analysis area would improve only a small amount relative to alternatives 1-4 and 7-M.

Figure 3.1. 1 Number of known occupied bald eagle nests on Hebgen and Earthquake Lakes from 1976-2005.

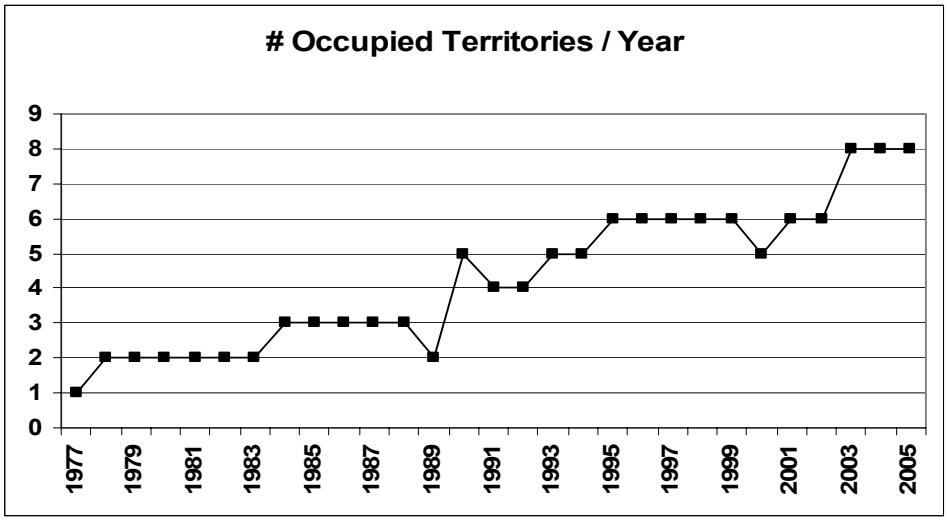


Figure 3.1. 2 Number of bald eagles fledged on Hebgen and Earthquake Lakes from 1976-2005.

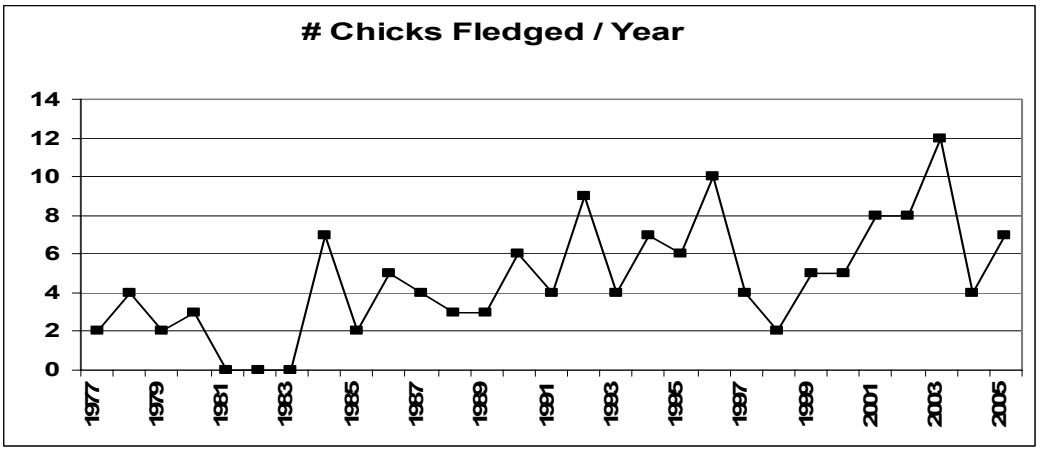
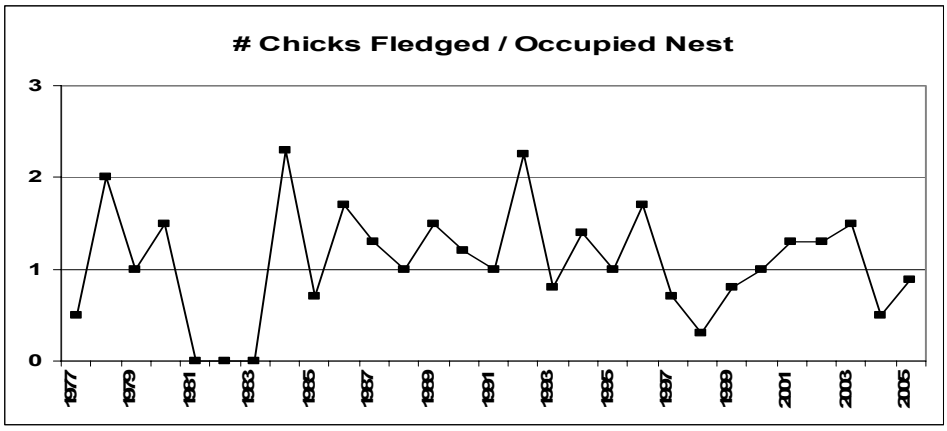


Figure 3.1. 3 Number of bald eagles fledged per occupied nest on Hebgen and Earthquake Lakes from 1976-2005.



Effects of Proposed Goals, Objectives, Standards and Guidelines

There would be no added programmatic direction for travel planning under Alternative 1, and no associated additional effects to bald eagles.

Alternatives 2 through 7-M propose a number of goals and objectives to provide for recreation opportunity, access and to improve other resource conditions that may have been adversely affected by the Forest's transportation system. Goals and objectives, by themselves, have no environmental effect because they do not constitute final agency decisions. Environmental effect under NEPA is more appropriately addressed at such time that specific actions are proposed to achieve these goals and objectives. The proposed Travel Management Plan does include the final agency decisions for management of public travel and this reflects implementation of the goals and objectives proposed for recreation opportunity (for example Forest-wide Goal A, Objective A-1, and Travel Planning Area Goals 1 and 2 and Objectives 1-1 and 2-1). The predicted direct, indirect and cumulative effects of public travel on bald eagles, and hence the implementation of these goals and objectives are addressed earlier in this section.

Alternatives 2 through 7-M also propose standards and guidelines to provide for protection of other resources during Travel Plan implementation. Standards and guidelines include protection measures within which future proposals for road and trail construction, reconstruction, maintenance and decommissioning must take place. These are considered final agency decisions because they set limitations within which future actions must take place.

The proposed goals, objectives, standards and guidelines that are relevant to the protection and improvement of bald eagle habitat are discussed below.

Several goals and objectives more specific to bald eagles would be applied under Alternatives 2 through 7-M. There is a Forest-wide Goal to "provide high quality security habitat in areas important to wildlife reproduction," with a corresponding Objective to "minimize stress factors from human recreation to species of concern during calving, fawning, denning and nesting seasons in habitats used for reproduction." Specific direction is also provided in a Goal for the Hebgen

Lake Basin Travel Planning Area: "provide secure bald eagle nesting habitat around Hebgen Lake" under alternatives 2 through 7-M. There is also a Forest-wide Goal to "manage human use of the Forest road and trail system that allows for the recovery of threatened and endangered species…"

Application of these goals and objectives would be beneficial to the species, but the alternatives vary in how well they address this goal (see discussion by alternative of direct, indirect, and cumulative effects).

Alternative 3 would provide for backcountry airstrips on the Gallatin National Forest, with one proposed site on Horse Butte. Airplane landing and takeoff in this area occurring from February 1-August 15 would create a large amount of disturbance to bald eagles and could disrupt nesting for up to 3 known bald eagle territories. A backcountry airstrip on Horse Butte would not be in compliance with the GYBEMP. Alternative 7-M contains an objective stating that the Gallatin National Forest would accept proposals for backcountry airstrips. Future site-specific backcountry airstrip proposals would be evaluated for their potential impacts to bald eagles before they could be permitted. Airstrips around Hebgen or Earthquake Lakes would have high potential to cause disturbance to bald eagle nesting and foraging.

Consistency with Laws, Regulations, Policy and Federal, Regional, State and Local Land Use Plans

Bald eagles are listed as a threatened species under the Endangered Species Act (ESA), and the Forest Service must therefore ensure that any action it authorizes is not likely to jeopardize the continued existence of this species {Section 7(a)(2)}. To comply with the ESA, effects of the preferred alternative on bald eagles will be analyzed in a Biological Assessment prepared for this project. Because they are a native species, the Forest Service has a responsibility under the National Forest Management Act (36 CFR 219.19) to provide habitat for bald eagles. This responsibility would be met under all alternatives.

The Gallatin Forest Plan specifies that *"management of the Forest will provide for the recovery of the bald eagle"* (USDA Forest Service 1987:II-4). All alternatives would be consistent with this goal, reflecting the fact that bald eagle productivity in the Hebgen and Earthquake Lakes area has increased considerably since the first nest was monitored by the Forest Service in 1977. No Travel Plan alternative would be expected to have more negative effects on bald eagles than the current management of summer and winter travel. The Forest Plan (USDA Forest Service 1987:II-19) also specifies that general habitat management direction for bald eagles would be provided by the GYBEMP. Guidelines from this document specific to management of activities that could disturb nesting bald eagles would not be met under any alternative for some territories (such as when nests exist in proximity to existing major access roads). Alternative 7-M would generally come closer to meeting these guidelines than Alternatives 1-4, but not as close as Alternatives 5-6. The actual effects of not meeting these guidelines vary among territories, and were discussed in the analysis of direct, indirect and cumulative effects sections. Site-specific nest management plan recommendations (Stangl 2000:VI-4 through VI-25) would generally be met under all alternatives, with exceptions of the Horse Butte, Ridge and Narrows territories under Alternatives 1-4 and 7-M for winter travel.