



# North Cascades Bear Smart Assessment

## Results from a Preliminary Assessment of Six Communities in Eastern Skagit and Whatcom Counties

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This report provides preliminary observations regarding actual and potential human-bear conflicts in and around six communities in eastern Whatcom and Skagit Counties. Despite extensive fact-finding activities that included field assessments and interviews with community members, results may be subjective and should be treated as a preliminary step that will require further investigation by GBOP staff and community members. We look forward to working with the focus communities to further define necessary actions based upon the findings of the Bear Smart Assessment.

## Summary

This report outlines the methods and results of a Bear Smart Assessment conducted by the Grizzly Bear Outreach Project (GBOP) in eastern Skagit and Whatcom Counties. The assessment examined existing and potential human-bear conflicts associated with natural conditions, agriculture practices, sanitation practices, and other human behaviors. Information was obtained through review of aerial photographs and topographic maps, personal interviews with local residents and agency representatives, on-site visual assessments of community conditions, and a roadside examination of household garbage disposal behaviors. The report summarizes assessment results by community and behavioral context, draws conclusions about the extent of current and future human-bear conflicts in the area, and provides recommendations that will assist local residents in living safely in a shared environment with black bears and grizzly bears.

The assessment revealed that human-bear conflicts are most prevalent in and around the communities of Marblemount, Glacier, and Maple Falls (with most human-bear conflicts occurring in outlying residential and recreational developments). Local residents also reported significant human-bear conflicts associated with apple orchards and beehives. No significant problems were reported for berry farms and ranches. Garbage management was found to be the most important determinant of whether black bears and grizzly bears will become a serious problem in eastern Skagit and Whatcom Counties. Inadequate dumpsters and poor sanitation practices in campgrounds and several outlying communities could result in future human-bear conflicts. Inappropriate storage and disposal of household garbage in rural areas is another potential source of human-bear conflicts.

Primary recommendations in the report address the need for more in depth bear smart assessments in Marblemount, Glacier, and Maple Falls; bear-proof dumpsters in campgrounds and outlying recreation and residential communities; enhanced protection and sanitation for apple orchards and beehives; and education programs on bear smart behaviors for residents of the assessment area. The report concludes that local residents in the assessment area are in an excellent position to prevent current and future conflicts with black bears and grizzly bears.

This report, and associated community on-site assessments are available from the GBOP website at: ([www.bearinfo.org/bearsmart.htm](http://www.bearinfo.org/bearsmart.htm)).

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## Introduction

Black bears and grizzly bears have been a component of the North Cascades ecosystem since prehistoric times. Native Americans coexisted with both species of bears for thousands of years. Black bears adapted more readily to the arrival of Europeans, while grizzly bear populations declined precipitously during the nineteenth century. There are about 6,000 black bears in the North Cascades of Washington, while only five to twenty grizzly bears remain in the same area (US Fish and Wildlife Service).

Grizzly bears are listed as threatened under the Endangered Species Act (ESA) and are considered endangered at the state level. The North Cascades serves as one of six grizzly bear recovery zones in the lower 48 states. The 10,000 square mile North Cascades Recovery Zone is primarily public land (90% state or federally owned) with 40% designated as wilderness and 68% having no motorized access. Privately owned land in the eastern portion of the Skagit Valley is included in the recovery zone. Biologists estimate that it will take up to 100 years for the grizzly bear population to recover to a sustainable level (200 to 400 bears) in the North Cascades.

Habitat requirements for black bears and grizzly bears are similar in the North Cascades. Bears are often found on upper elevation slopes, in avalanche chutes, and in low elevation wetlands. Both species use rivers and streams to forage and as natural travel corridors, especially in mountainous areas with steep slopes and flat lowlands. Bears move between upland and lowland areas following food sources as they become available. Grizzly bear home ranges are significantly larger than those of black bears.

Black bears and grizzly bears are opportunistic omnivores with a typical diet of less than 10% fish or meat, and much of that is carrion from winter killed deer and elk. Salmon comprise a larger proportion of the diet for grizzly bears in coastal areas. More than 100 plants found in the North Cascades have been identified as bear food. Bears visit wetlands and riparian areas along streams and rivers in the spring to feed on emerging succulent plants. They also explore the bases of avalanche chutes in search of winter-killed carrion. Bears focus on thistle, roots, mushrooms, berries, and insects as summer food sources. Natural bear foods in the fall include berries (a primary source), plants, and insects.

Humans can unintentionally provide high quality food for bears. Orchards, berry farms, and beehives can be especially popular with bears. Other common non-natural attractants that are provided by humans include pet and livestock feed, birdseed, BBQ grease, and garbage. Bears have excellent memories that allow them to locate seasonally available foods in their wild habitats. This characteristic also allows them to locate and exploit human food sources, to which they quickly become conditioned. As a result, human behaviors can actually create human-bear conflicts in the immediate area and the broader community. Bears that become accustomed to eating food from human sources are almost always killed when wildlife agents are called to respond to complaints. The old saying, "a fed bear is a dead bear," is true.

Attitudes toward bears vary, ranging from fear through annoyance, tolerance, respect, and awe. Watching bears in their natural environment from a safe distance can be thrilling. Encountering them on the back porch can be terrifying for some people. Attitudes toward bears are reflected in survey results and human behaviors. For example, a telephone survey of adults in eastern Skagit and Whatcom Counties revealed strong support for bears, including 76% support for grizzly bear recovery in the North Cascades. Many residents of eastern Skagit and Whatcom Counties are aware of bears and take steps to prevent conflicts. Other residents seem oblivious to the presence of bears and fail to take the most basic steps to prevent bears from being conditioned to human food sources.

The Grizzly Bear Outreach Project (GBOP) has initiated a Bear Smart Assessment and Education Campaign to work with eastern Skagit and Whatcom County residents to better understand black bear and grizzly bear behaviors, and how to reduce the potential for human-bear conflicts in their communities. The challenge for local residents is to use the results of the Bear Smart Assessment to address areas of current human-bear conflict, take steps to prevent more severe conflicts that may occur during years with inadequate natural bear food sources, and prepare for recovery of grizzly bears in the North Cascades.

## Assessment Methods

### *Project Geographic Area*

The geographic area for the Bear Smart Assessment includes portions of eastern Whatcom and Skagit Counties in the North Fork and Middle Fork Nooksack and Skagit River Valleys (see attached map). The assessment was limited to privately owned land and land owned by county or local governments (e.g., local parks). The assessment area includes the town centers of Marblemount, Rockport, Concrete, Glacier, Maple Falls, and Kendall, along with surrounding outlying communities and rural areas east of the Baker River Road (Skagit County) and Mosquito Lake Road (Whatcom County). The assessment did not focus on or include backcountry areas in either county, and excluded US Forest Service, North Cascades National Park, state, and privately owned forestland.

### *Aerial Photograph and Topographic Map Review*

Aerial photographs and topographic maps of the Skagit and Nooksack River Valleys were used to identify landscape characteristics associated with bear habitat and movement. Aerial photographs and maps can reveal potential lowland spring and fall habitat for bears. Recent aerial photographs can also highlight vegetative land cover that may be attractive to bears. Topographic maps also assist in identification of narrow valleys with steep slopes that may funnel bears into residential areas along rivers.

### *Personal Interviews with Local Residents*

A total of 40 residents of eastern Skagit and Whatcom Counties were interviewed by the GBOP Field Coordinator to assess their knowledge of potential human-bear conflict situations in the assessment area. Interviews were conducted with representatives from the farming and ranching communities, agricultural organizations, government agencies, local businesses, resorts, homeowners associations, law enforcement, and other groups. Telephone interviews were conducted using structured interview guides to assure that key points would be covered during the interviews. The interviewer asked about past human-bear conflicts in the assessment area; agricultural practices used to prevent problems with bears; illegal garbage dumps in the assessment area; garbage disposal practices in rural residential developments, resorts, campgrounds, and RV parks; and other household behaviors that might attract bears (e.g., use of bird feeders, storage and placement of pet food, storage and cleanup of BBQ grills).

### *On-Site Community Assessments*

Preliminary on-site visual assessments were conducted of potential bear habitat and travel corridors in and adjacent to the six major communities in the project area (Marblemount, Rockport, Concrete, Glacier, Maple Falls, and Kendall). The on-site assessments examined vegetative land cover, natural and unnatural food attractants, natural travel corridors, community characteristics that might attract bears (e.g., dumpsters near areas with forest cover), and bear sign (e.g., overturned logs, etc.) indicating bear activity in the area. The GBOP Co-Directors and Field Coordinator conducted the assessments during early December 2004. Although not an exhaustive process, these assessments allowed GBOP staff to identify community features requiring further attention. Individual on-site community assessments are available online ([www.bearinfo.org/bearsmart.htm](http://www.bearinfo.org/bearsmart.htm)) or as hard copies.

### *Garbage Placement and Pick-Up Observation*

Improper household garbage management can be a major attractant for bears. Types of containers used for garbage storage, placement of garbage containers, length of time garbage is stored, and when garbage containers are placed at the curb for pickup (i.e., night before or morning of pickup) can determine whether non-natural food sources are available to bears. The GBOP Field Coordinator conducted a visual examination of household garbage disposal behaviors from the roadway before and during garbage pick-up days in selected rural portions of Skagit and Whatcom Counties. The assessment examined the percent of households placing garbage at the roadway for pick-up, and the time of day when garbage containers were placed by the road.

## Assessment Results

### *Bear Habitats and Travel Routes*

Almost all of the assessment area (i.e., river valleys) is good bear habitat, especially during the spring and fall. However, some areas provide excellent natural habitat for bears. These areas include the Baker River Valley, Cascade River Valley, North Fork Nooksack River Valley, and Barnaby Slough in the Skagit River Valley.

Travel routes for bears are widespread and include natural, as well as manmade routes (such as roads and trails). The Cascade and Baker River Valleys are the most significant natural travel routes. However, bears also move frequently along Glacier Creek, the North Fork Nooksack River (near Glacier, Maple Falls and Kendall), the Sauk River, and the Skagit River (particularly around Marblemount). Bears also use manmade travel routes (e.g., Foxglove Lane and Powerline Road in the Marblemount area).

### *Potential Human-Bear Conflict Areas*

Natural bear habitat and travel routes set the stage for human-bear conflicts. However humans must also be present and contribute to conditions that lead to conflicts with bears. This occurs occasionally throughout the assessment area, with several communities reporting more frequent encounters with bears.

Skagit County residents report significant seasonal interaction with bears in the Marblemount area (Ranger Station Road, Powerline Road, Foxglove Lane, Pressentin County Park, Diobsud Creek, and backyard fruit trees), along the Cascade River Road (Cascade River Park and in campgrounds), around Barnaby Slough, and along the Baker River Road (Baker Lake Resort and Puget Sound Energy campgrounds).

Whatcom County residents report substantial interactions between humans and bears in recreational communities around Glacier and Maple Falls. Bear sightings and occasional human-bear conflicts are reported at Snowline, Mt. Baker Rim, The Glen, and Black Mountain Ranch communities. Bears have also been sighted around the Peaceful Valley and Paradise rural subdivisions (north of Kendall), although there are few reports of negative interactions in these developments.

According to Washington State Department of Fish and Wildlife staff, human-bear conflicts were significantly above historic levels in the Bear Smart Assessment area during 2004. Several human-bear conflicts were recorded in Baker Lake campgrounds and in recreational communities near Maple Falls and Glacier. These conflicts involved black bears accessing human foods. Although the conflicts did not result in human injury, several bears were euthanized.

### *Agricultural Food Sources*

Orchards and backyard apple trees are an attractant for bears in Skagit County, and to a lesser extent in Whatcom County. Berry farms and berries in home gardens are potential attractants, although no residents reported bears foraging in these sites. Small produce farms reported very few human-bear conflicts.

In Skagit County, frequent encounters with bears feeding on apples were reported by residents around Marblemount and downstream along both sides of the Skagit River. Reports of bears feeding in orchards around Maple Falls and Kendall in Whatcom County were less frequent. The severity of human-bear conflict in orchards appears to depend on the availability of natural bear food sources each year and the quality of electric and barbed wire fencing.

Beehives also appear to be a major attractant for bears in Whatcom and Skagit Counties, with some beekeepers experiencing repeated damage and others reporting little or no damage. Beekeepers reported that placement of hives may influence the extent of bear damage, but provided little guidance on the best types of sites to place beehives. Electric fencing was also reported as critical for protecting beehives, although bears have occasionally broken through electric fencing without receiving a shock that is adequate for deterrence.

Ranchers reported no negative interactions with bears in recent years. Most attribute this to good sanitation practices (e.g., carcass disposal, livestock feed storage, etc.) and electric or barbed wire fencing of calving and lambing grounds. Others mentioned the presence of ranch dogs or livestock guardian dogs as an effective deterrent to bears.

### *Garbage Food Sources*

Garbage as a potential bear attractant was examined in four settings (commercial dumpsters, frontcountry campgrounds, rural households, and illegal dumps). There were very few reports of bear attraction to commercial dumpsters or commercial trashcans in any of the communities or rural areas in the Bear Smart Assessment area. One minor incident was reported in Glacier. A site visit examination of these dumpsters and trashcans did not reveal major problems with their structural integrity or use (with one exception in Marblemount where sanitation practices were inadequate). However, the observed dumpsters and trashcans were not bear proof. Almost all of the dumpsters had plastic lids that could be easily accessed by bears. These dumpsters and trashcans could serve as bear attractants, especially during years when natural bear food sources are inadequate.

Bears were reported as a problem in some, but not all private and public campgrounds. Sanitation (appropriate use of dumpsters and food storage within campsites) appears to be the primary cause of problems in the campgrounds along the Cascade, Sauk, Baker, and Skagit Rivers. Use of bear-proof dumpsters was reported for the Puget Sound Energy (PSE) managed Baker Lake Resort, but all other campgrounds continue the use of dumpsters that are accessible to bears. Long-term visitor use of several campgrounds without daily fees also appears to have contributed to deteriorating sanitation conditions.

Although few specific bear related problems were reported, household storage and disposal of garbage could become a major contributor to human-bear conflicts in the Skagit and Nooksack River Valleys. The roadside assessment of household garbage disposal practices revealed that for Skagit County only 15% of rural households in the assessment area use weekly garbage pickup services. Households in the assessment area in Whatcom County showed greater use of weekly garbage pickup services (44%). It is not known how the remaining households manage their garbage, although most probably utilize one of the following practices: direct transport to transfer stations, on-site storage or disposal, illegal off-site dumping, burning, burying, and/or use of commercial dumpsters at work or elsewhere. In a number of instances, full garbage bags were observed in piles near homes and in the backs of pickup trucks. Approximately 62% of households using garbage pickup services placed garbage containers near the road the night before pickup. Early placement (the night before pickup) provides an opportunity for bears to forage in garbage containers during the night.

Local residents and agency staff reported that the number and use of illegal garbage dumps have decreased substantially in recent decades. Local residents also reported several remaining illegal garbage dumps, although they did not report frequent use of these sites by bears. Sites mentioned were south of the Skagit River between Concrete and Rockport and north of Peaceful Valley and Paradise in Whatcom County. A site visit by the GBOP Field Coordinator discovered that all of these reported illegal dumpsites had been cleaned up. An examination of other potential illegal dumpsites in these areas revealed several recent dumping incidents with household garbage, food waste, and furniture present.

### *On-Site Community Assessments*

A preliminary visual assessment of Marblemount, Rockport, Concrete, Glacier, Maple Falls, Kendall, and immediately adjacent areas was completed to identify natural and community characteristics attractive to bears. Marblemount and Glacier exhibited natural features (excellent bear habitat and distinct travel corridors/routes) that were highly conducive to the presence and movement of bears.

Multiple local residents reported bear activity in Marblemount. This was primarily attributed to excellent bear habitat surrounding Marblemount and in the adjacent Cascade River Valley to the southeast. Foxglove Lane and Powerline Road were recognized as ideal manmade travel corridors for bears. Pressentin County Park exhibited excellent bear habitat, old orchard trees, and clear sign of frequent bear use (see on-site assessment report for Marblemount).



Local residents also reported significant presence of bears in the town of Glacier and surrounding recreational communities (Snowline, Mt. Baker Rim). This was primarily attributed to excellent bear habitat (forested lowlands and extensive riparian areas) and natural travel corridors along the Nooksack River and Glacier Creek. The assessment revealed the possibility of frequent human-bear encounters along the network of forested trails between Glacier and the recreational communities to the east of Glacier (see on-site assessment report for Glacier).

Substantial bear activity was reported around Maple Falls and the surrounding recreational communities. Intermittent high-density human occupation of the Glen and Black Mountain Ranch near Maple Falls has created conditions that attract bears. Weekend and seasonal use of these areas makes it challenging to manage garbage disposal and other behaviors that may attract bears (use of bird feeders, storage and placement of pet food, storage and cleanup of BBQ grills) (see on-site assessment report for Maple Falls).

The town centers of Rockport, Concrete, and Kendall showed only limited potential for human-bear conflicts. However, the surrounding recreational and rural residential communities (including Cape Horn and Cedar Grove) exhibited conditions that could create human-bear conflicts. The Paradise and Peaceful Valley subdivisions near Kendall also exhibited conditions that could contribute to human-bear conflicts. See the on-site assessment reports for Rockport, Concrete, and Kendall for more details.

## Conclusions

Black bears and grizzly bears are a natural part of the ecosystem in eastern Skagit and Whatcom Counties. Surrounding wild lands, forested lowlands, sunny clearings with ample natural bear food, and densely vegetated river corridors (good cover for bear movement) provide good to excellent spring, summer, and fall habitat for bears throughout the assessment area. Several geographic areas are particularly suitable for bears, including the Cascade and Baker River Valleys, as well as the steep sided valleys surrounding Marblemount and Glacier.

Black bears are likely to be common residents of this ecosystem in the future, given positive societal attitudes toward preserving wildlife and natural areas, such as the North Cascades. Fortunately, almost all of the local residents participating in the Bear Smart Assessment stated that they do not consider black bears to be a serious problem and many stated that they like to see black bears in rural areas of Skagit and Whatcom Counties.

Grizzly bears may become more prevalent in the North Cascades as the population slowly recovers over the next 100 years. Given the similarity of black bear and grizzly bear habitat requirements and feeding behaviors, it is likely that a recovering grizzly bear population will create only minor human-bear conflicts, similar to those currently observed for black bears, especially considering the fact that black bears will outnumber grizzly bears by several orders of magnitude for the foreseeable future.

Human-bear conflict is dependent on the presence of bears and human behaviors that attract bears into problem situations. Human behavior will determine whether or not black bears and grizzly bears become a problem in eastern Skagit and Whatcom Counties. Current ranching activities appear to be compatible with the presence of bears. Preventive behaviors by ranchers need to be publicly recognized and continued in the future.

Some orchards and beehives serve as attractants bears in eastern Skagit and Whatcom Counties. More attention needs to be paid to addressing these problems. Farm sanitation practices need to be enhanced where conflicts occur (e.g., harvest of fruit when it is ripe and cleanup of fallen fruit) and external financial resources need to be dedicated for installing and maintaining adequate fencing that will preclude non-natural food rewards and other attractants for bears. The whole community will benefit from investments in preventing these agriculturally related human-bear conflicts.

Garbage management is a key issue that will determine whether black bears and grizzly bears become a significant problem in eastern Skagit and Whatcom Counties. Illegal garbage dumps and commercial dumpsters appear to be only minor problems at this time, but could become more significant during years with inadequate natural bear food sources. Continued use of dumpsters that



have easy-to-access plastic lids and poor sanitation practices by residents in some campgrounds and recreational communities have the potential to create human-bear conflicts. Recent conflicts in the assessment area indicate this could become a significant problem in the future. Special attention needs to be paid to securing bear-proof dumpsters, managing garbage more effectively, and assuring regular cleanup around restaurants, campgrounds, and recreational communities.

Rural household garbage management is another area that needs to be improved to prevent future problems with black bears and grizzly bears. Rural residents need to be more aware of the potential consequences of inappropriate storage and disposal of household garbage, for their own families and their neighbors. Household garbage needs to be stored in secure areas and disposed of in a timely manner at local transfer stations or through weekly pickup services. In bear country, garbage should be placed at the roadside pickup point in the morning, and not the night before.

The assessment also provided evidence that other human behaviors (e.g., placement and seasonal use of bird feeders, storage and placement of pet foods, storage and cleaning of BBQ grills) contribute to human-bear encounters in eastern Skagit and Whatcom Counties. Minor behavior changes by residents can prevent the creation of problem bears that become a nuisance to the whole neighborhood.

Overall, Skagit and Whatcom County residents are in an excellent position to prevent current and future problems with black bears and grizzly bears. Minor behavior changes and financial investments (e.g., fencing and bear-proof dumpsters) can resolve almost all of the human-bear conflicts in the area. These adjustments will allow local residents to enjoy the presence of bears, while living safely in a shared environment. Bear smart behaviors will also help maintain bears as a natural component of the North Cascades ecosystem and reduce the number of bears that are killed by wildlife management officers.

## Recommendations

1. Implementation of more in depth Bear Smart Assessments in Marblemount, Glacier, and Maple Falls (areas with high densities of both bears and people) to identify specific bear high use areas, natural and non-natural food sources, problem human behaviors, and potential human-bear conflicts.
2. Initiation of community dialogue in Marblemount, Glacier, and Maple Falls to achieve a consensus on the desirability of bears in and around the communities, followed by education and human behavior changes that can prevent human-bear conflicts (appropriate garbage storage and disposal, seasonal use of bird feeders, placement and storage of pet foods, and management of fruit trees in backyards and public parks).
3. Installation of bear-proof dumpsters at recreational communities (Snowline, Mt. Baker Rim, The Glen, Black Mountain Ranch, and others) to prevent on-going problems and future human-bear conflicts.
4. Installation of bear-proof dumpsters at private and public campgrounds (especially those along the Cascade River Road and the Baker River Road) to prevent on-going problems and future human-bear conflicts.
5. Implementation of an education program for seasonal and weekend residents of recreational communities (Snowline, Mt. Baker Rim, The Glen, Black Mountain Ranch, and others) to prevent human-bear conflicts (information on appropriate garbage storage and disposal methods, seasonal use of bird feeders, storage and placement of pet foods, and storage and cleanup of BBQ grills).
6. Implementation of an education program for permanent residents at Peaceful Valley, Paradise, Cape Horn, Cedar Grove, and other outlying communities to prevent human-bear conflicts during years with poor natural food sources (including information on appropriate garbage storage and disposal, seasonal use of bird feeders, and storage and placement of pet foods).
7. Implementation of an education program for rural residents regarding the appropriate storage and timely disposal of household garbage.
8. Enhanced protection of commercial orchards, berry farms, and beehives with electric and barbed wire fencing (through expansion of external financial resources for installation and maintenance of fencing).
9. Adoption of orchard practices (harvest of ripe fruit and cleanup of fallen fruit) that prevent human-bear conflicts.
10. Continuation of ranching practices that prevent human-bear conflicts (fencing of calving grounds, timely and appropriate disposal of animal carcasses, and proper storage of livestock feed).
11. Regular cleanup of illegal garbage dumps and aggressive signage/enforcement to prevent future use of areas where garbage has been dumped in the past (south of the Skagit River and north of Peaceful Valley and Paradise).

## Attachments

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1. Map with Bear Smart Assessment Community Focus Areas outlined
2. Marblemount On-Site Assessment (separate document)
3. Rockport On-Site Assessment (separate document)
4. Concrete On-Site Assessment (separate document)
5. Glacier On-Site Assessment (separate document)
6. Maple Falls On-Site Assessment (separate document)
7. Kendall On-Site Assessment (separate document)

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