

**Grizzly Bear Management
2019 Annual Report
NCDE Portion of Region 1
Montana Fish, Wildlife & Parks**



Landowner photo.

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Adult female grizzly bear (NWM256) at culvert trap in the Swan Valley. Landowner photo.

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Introduction

In 1993, Montana Fish, Wildlife & Parks (MFWP) hired a Grizzly Bear Management Specialist for Region 1, to work closely with private landowners and agency personnel to minimize conflicts between grizzly bears and humans. More emphasis was placed on a proactive approach of prevention. In 1995, we began pre-emptive capture and releasing bears closer to, or within, their home ranges. In 1996, working with Carrie Hunt of the Wind River Bear Institute, we began using onsite releases and aversive conditioning in an attempt to modify the behavior of the bear. At the same time, we worked closely with the landowners to identify and secure attractants.

There has been a lot of interest in the methods and philosophy of the program from the bear management community and the public. This has generated local and national media coverage which has highlighted the importance of preventing bear problems in the first place and secondly, how to handle those bears if problems do occur. The methods and techniques developed in the field continue to be refined and

improved. An interaction between grizzly bears and humans tends to be very individualistic which makes the analysis of data and presentation of results very complex.

The grizzly bear trend monitoring program began in 2004 and continues today. The program is headed up by MFWP but is an Interagency effort. We have assisted with the capture, collaring, and monitoring of those trend bears when possible.

In 2005, MFWP began an augmentation program of capturing grizzly bears with no history of conflict from the NCDE and releasing them into the Cabinet Mountains. Heather and Derek Reich were hired under contract with funding support from the Montana Fish, Wildlife & Parks Foundation and the National Fish and Wildlife Foundation. Since 2011, MFWP has continued the augmentation work with MFWP personnel.

This report is an overview of the work conducted during 2019 and a summary of management related captures since 1993. It includes prevention efforts, reported grizzly bear conflicts, management captures, releases, monitoring, mortality, and the Cabinet Mountains augmentation program.

Goal and Objectives

Goal: Minimize conflicts between people and grizzly bears.

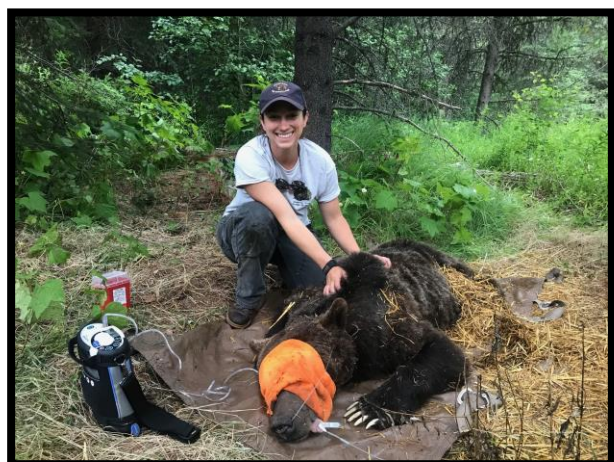
Objectives:

- To minimize grizzly bear conflicts by working with landowners to identify, secure, or remove attractants.
- To work with agencies to promote food storage on public lands to minimize grizzly bear conflicts.
- To work with city, county, state, and federal governments to minimize grizzly bear conflicts.
- To provide information to the media on how people can prevent grizzly bear conflicts.
- To educate the public how to live and recreate safely in grizzly bear country.
- To respond to grizzly bear conflicts on private and public lands.

Grizzly Bear Technician

Montana Outdoor Legacy Foundation (MTOLF) and the National Fish and Wildlife Foundation (NFWF) again provided monies to fund a 6-month technician to work with the MFWP Grizzly Bear Management Specialist. This year, Justine Vallieres was hired for a second season and began work on May 13, 2019.

Over the last two field seasons, Justine has learned a lot and has become very confident and proficient in preventing and responding to grizzly bear conflicts. This involved working closely with landowners and agency personnel when preventing and dealing with reported conflicts. Justine has become very competent with trapping, drugging, handling, and monitoring grizzly bears. All the captures and handling events were conducted in a safe and professional manner. Justine is also experienced with installing and maintaining electric fences, deploying critter gitters, remote cameras, and assisting landowners in identifying and securing attractants.



The grizzly bear technician position is an extremely important part of the grizzly bear management program. It provides additional personnel to respond to conflicts and to work with landowners on preventing conflicts.

Funding for the technician position has always been a challenge because it is funded with “soft” dollars. That means funds must be raised every year primarily through grants and donations.

Justine’s last day of work was Nov 1, 2019. We were still getting bear calls into December.

Prevention

The best way to minimize conflicts between people and grizzly bears is to prevent conflicts from occurring in the first place. Prevention can include a wide range of options including education (brochures, press releases, presentations, Bear Fairs), increasing human tolerance, installing and maintaining an effective electric fence, and using approved bear resistant garbage containers. Perhaps the most effective, but also the most time-consuming option, is one-on-one communication with people that live and recreate in grizzly bear country. The one-on-one communication needs to be done before a conflict occurs. Unfortunately, most one-on-one communication tends to occur in response to a conflict that has already occurred.

County Garbage Transfer Stations

We work with Flathead, Lake, Lincoln, and Missoula counties in regard to their garbage transfer stations or “green box sites”.

Flathead County was the first to move and install electric fencing around their Coram transfer site. Since then, they have moved or consolidated, and put electric fencing around their other sites at Olney, Ashley Lake, Essex, and Bigfork. The Flathead National Forest and the Great Northern Environmental Stewardship Area (GNESA) were involved with logistics and funding for some of the sites.

Lincoln County has followed the Flathead County bear-resistant transfer station design and efforts. Within and adjacent to the NCDE, they have protected their sites at Glen Lake, Pinkham, Trego, and Fortine. They also moved the dumpsters from Stryker to the Trego site. Kim Annis and the Kootenai National Forest, and GNESA were very instrumental in working with Lincoln County in securing those sites.

Lake County operates two transfer stations in our area. One at Porcupine Creek, south of Swan Lake and the Ferndale site adjacent to Ferndale. Both sites have 40 cubic yard roll off containers with hydraulic arms and screen tops. Both sites were modified so that the lids could be opened and closed by flipping a switch. Currently, only the Porcupine site is operating correctly. The Ferndale site developed a leak in the buried hydraulic line and the county has yet to fix the problem.

Missoula County covers the Swan Valley near Condon. Presently, all garbage collection is done by a private company, Republic Services. There have been discussions about creating a bear-resistant transfer station near Condon, but nothing has occurred yet.

City of Whitefish: MFWP Conflict Specialist, Erik Wenum, has been working closely with Whitefish for many years related primarily to black bear conflicts. He was instrumental in getting the city to enact an ordinance that basically states that the residents and businesses within the city limits can not roll out their garbage until the morning of pickup unless it is in a bear resistant container. MFWP and Whitefish City officials met in October to discuss the bear situation in Whitefish. There was an agreement made to

remove fruit trees on city property and to work with the local hauler, Republic Services, to provide bear resistant garbage containers (Kodiak cans) within the city limits.

We are hoping that Whitefish will be the example of a responsible “Bear Smart Community” for all communities in the region.

Electric Fencing: Properly constructed and maintained electric fences are very effective at keeping bears from gaining access to attractants. Bear conflict specialist, Kim Annis, based in Libby, has developed an electric fencing guide that provides information on how to properly install and maintain an electric fence. We distribute that guide to landowners and provide them with a link to the Interagency Grizzly Bear Committee website for additional information. <http://igbconline.org/wp-content/uploads/2016/03/MFWP-Electric-Fencing-Guide-March-2017.pdf>

A large part of our prevention work involved assisting landowners with protecting chickens, pigs, and fruit trees with electric fencing. We helped with the installation of 12 temporary and permanent electric fencing projects located near Columbia Falls, Whitefish, Creston, Bigfork, Ferndale, and Swan Lake. We also have an electric fence loaner program. During 2019, ten electric fence energizers and net fences have been loaned to landowners.

Electric Screens and Mats: For the past 12 years we have been utilizing pulsating electric fence energizers to electrify screens on rubber mats on the ground in front of doors, on windows and doors of chicken coops, metal grain barrels, and even metal doors on garages and shops. We use these techniques if we are unable to secure the attractants with conventional electric fencing. We have found these techniques are usually quick, easy to install, easy for landowners to use, and are effective in deterring grizzly bears. In 2019, we utilized some of these techniques to protect chicken coops and garage doors at 7 different locations. We were able to get video footage at two of those locations of grizzly bears touching the door and screen with their noses, getting shocked, and leaving. The grizzly bears did not return.

Critter Gitters: Since 1994 we have been using motion-activated noise makers called Critter Gitters to temporarily keep bears away from attractants. The Critter Gitters are made by Amtek and are powered by a 9-volt transistor battery. We currently loan them out to landowners to put up on chicken coops, garages, and any attractants that can't be quickly secured. We have 15 available and 9 are currently on loan.

Bear Resistant Containers: Since 2004, we have had a program established to loan bear resistant roll out garbage containers to residents. We started with Unbearable bins and have now acquired Kodiak cans thanks to funding provided by Montana Outdoor Legacy Foundation (MTOLF) and the National Fish and Wildlife Foundation (NFWF).

This loaner program has been very popular and currently 6 of these containers are on loan. Two of those were borrowed from Swan Valley Bear Resources. We have had to retire some of the containers due to age and damage by hauling companies when they empty them.

Fruit Gleaning Program: In the fall, Justine created a Facebook page called Flathead Fruit Gleaning. It was set up so that landowners who wanted fruit picked could connect with people who were willing to come pick fruit, give it to the landowner, keep it for themselves, and/or provide it to the food bank. The page is new, but there was certainly interest and use by both landowners and the public and over 300 people were following the page by the end of the field season. The local food banks have expressed an interest in helping with the program and receiving excess fruit.

Bear Fairs and Wake-up Social: Several years ago, a group in the Swan Valley started a Bear Fair that was open to the public. Within a few years, it grew from 50 people to over 300 people attending. Due to the success of reaching out to residents, additional bear fairs were planned and hosted at the communities of Polebridge, Essex, Coram, and Ferndale.

In 2019, Bear Fairs were held in Condon and at Polebridge. The Condon Bear Fair was at the Community Hall and was organized and hosted by Swan Valley Bear Resources. Agency personnel from Montana Fish, Wildlife & Parks, the U.S. Forest Service, and U.S. Fish and Wildlife Service set up booths and gave presentations. Private NGO's (Swan Valley Connections, Defenders of Wildlife, Living with Wildlife Foundation, Flathead Valley Land Trust, Vital Ground) and company vendors, Counter Assault and Gallagher Fencing also put up displays and gave presentations on electric fencing, bear resistant containers, and the use of bear spray. More than 100 residents and tourists attended that event.

The second Bear Fair was in Polebridge and was hosted by the Northern Lights Saloon and was organized by Flannery Coats and Debo Powers. Booths were set up by agency personnel from the U.S. Forest Service, Glacier National Park, and Montana Fish, Wildlife & Parks. Private NGO's (North Fork Preservation Association, North Fork Landowners Association, Yellowstone to Yukon) also assisted with and sponsored the event. Vendors from Gallagher Fencing and Kodiak Products were present to demonstrate electric fencing and bear resistant trash containers. Over 130 residents and tourists attended the event.

In addition to the Bear Fairs, Swan Valley Bear Resources also started a Bear Wake-up Social several years ago. This event is held during April when bears are emerging from their dens. This year, the event was held at the Swan River Community Center near Ferndale. Presentations were given by author and Wildlife Biologist Doug Chadwick and me. The presentations were well attended by more than 100 residents.

Presentations, Meetings, and Training

A large part of grizzly bear management involves interactions between the public and agency personnel. This includes formal presentations, meetings, workshops and training. The following is a list of the presentations, meetings, workshops, and training with which we were involved. The list is in chronological order, and includes the type of interaction, date, and participants.

Most presentations are given during the winter months and most workshop and training sessions occur in the spring. Presentations are not typically scheduled during the field season due to the day-to-day unpredictability of the work. Presentations on grizzly bear conflict prevention were given at the following locations and dates:

January:

Science on Tap. Presentation in Bigfork. January 2. Public.
Conservation Strategy Meeting. January 11. Agencies.
Swan Valley Bear Resources Meeting in Condon. January 19. Agencies & NGOs.
Conservation Strategy Meeting in Kalispell. January 30. Agencies.

February:

Flathead Valley Community College Presentation. February 8. Public.
North Fork Interlocal Meeting. February 20. Agencies and Public.
Montana Department of Transportation Workshop in Kalispell. February 21. Agency.

March:

Grizzly Bear Trend Monitoring Meeting in Missoula. March 4. Agencies.
USFWS Bear Handling Workshop in Missoula. Workshop & Presentation. March 5-6. Agencies.
Swan Valley Bear Resources meeting in Condon. March 8. Agency & NGO.
MFWP Wildlife Meeting at Lone Pine. March 12. Agency.

April:

Whitefish Legacy Partners Presentation in Kalispell. April 23. Public & NGO.
Spring Bear Wake-up Social in Ferndale. April 25. Public.
Grizzly Bear Science Team Conference Call. April 26. Agencies.
Northern Continental Divide Ecosystem Subcommittee Meeting in Kalispell. Agencies & Public.
Whitefish Legacy Partners Bear Aware Program in Whitefish. April 30. Presentation. Public.

May:

Burlington Northern Santa Fe Railroad Meeting in Whitefish. May 1. BNSF & Agency.
Flathead Electric Coop in Kalispell. Presentation. May 8. FEC Employees.
MFWP Citizen's Advisory Committee at Lone Pine. Presentation. Agency & Public.

June:

Bear Fair in Condon. Presentation. June 1. Public.
North Fork Landowners Association at Sonderson Hall. Presentation. June 9. Public.
USFS Bear Training in Eureka. Presentation. June 11. USFS.
Glacier National Park Bear Training in West Glacier. Presentation. June 11. GNP.
Glacier National Park Bear Training in St. Mary. Presentation. June 12. GNP
Backcountry Pilots Association in West Glacier. Presentation. June 29. Public.

July:

North Fork Interlocal at Sonderson Hall. Meeting. July 10. Agencies & Public.
Summit Restaurant Presentation. July 24. Public.
Day in the Field with Danielle Coffman. July 23. Public.

August:

Polebridge Bear Fair. Presentation. August 24. Public.

September:

Nothing scheduled.

October:

Burlington Northern Santa Fe Railroad. Meeting. October 22. BNSF.
Whitefish City Employees. Meeting. October 24. WF employees & Agency.
Beers for Bears at Sacred Waters Brewery. Presentation. October 29. Public.

November:

Conference Call GB Mortality Committee. Meeting. November. 7. Agencies.

December:

NCDE Subcommittee Meeting in Missoula. November 3. Agencies & Public.

Reported Grizzly Bear Conflicts

In 2019, we received over 250 calls related to grizzly bears. Of those calls, most were classified as actual bear conflicts. The other calls were people wanting information about grizzly bears, grizzly bear sightings, media calls, or second-hand reports that could not be confirmed.



Unprotected chicken coops that were broken into by two different adult male grizzly bears. One near Radnor (left) and the other on the east side of the Flathead Valley (right). The landowner at Radnor did not want an electric fence installed since all the chickens were killed. A temporary electric fence was put up at the other property. No additional chickens were killed even though the bear returned. Traps were set at both locations, but no bears were captured.

Reported grizzly bear conflicts involved bears getting into unsecured garbage, pet food left outside, bird feeders, livestock grain, chicken feed, killing chickens, killing pigs, damage to fruit trees, property damage to a car, and a yurt. Numerous calls were received because bears were feeding on grass in yards and being seen next to homes. Some of those bears were captured and translocated.

We had many reports of grizzly bears feeding on domestic fruit. These reports were primarily from the Flathead Valley and included apples, plums, pears, and cherries. In some situations, we were able to install temporary electric fences to prevent the bears from accessing the fruit and causing damage to the trees. In a couple of situations, there was not a good way to use electric fencing because of the location of the trees, driveways, and other obstacles. In those situations, we tried to get the fruit picked and monitor the bear activity with remote cameras or install critter gitters. Trapping was also not ideal when we dealt with a female and cub(s): if just the cub(s) would have been captured and not the female, a possibly dangerous situation might have been created.



Grizzly bear family group feeding on crabapples near Creston. Landowner photo.



Photos from some of the grizzly bear conflicts that occurred in 2019. Damage to a chicken coop, killing chickens, sheep depredation, and a garage broken into to get cat food and horse feed.



Female grizzly with 3 two-year-olds feeding on grass and clover in a yard near Ferndale. These subadults eventually moved west toward Flathead Lake. They were last observed late in the fall on the Flathead Indian Reservation north of Polson. Landowner photo.



Adult female grizzly bear and two yearlings at crabapple tree along the Flathead River, Creston.

In previous years, the number of calls reporting grizzly bear conflicts ranged from 10 in 1993 to over 250 in 1998. Since 1993, the number of calls has averaged about 100 each year. The number of calls is not

necessarily an accurate measure of the level of grizzly bear conflicts for a given year (e.g. one grizzly bear in a subdivision may elicit many phone calls as the bear moves from house to house).

Once a grizzly bear conflict report is received, an effort is made to contact the reporting party and determine if a site investigation is warranted. Once a site has been investigated, a determination is made as to what actions can be taken to prevent further conflicts. In most cases, identifying and properly securing the attractants takes care of the situation. In some cases, the decision is made to attempt to capture the grizzly bear, or bears, involved. The decision to capture the bear is not automatic and it is based on human safety, bear safety, the type of conflict, location, and behavior of the individual bear.



Bear resistant Kodiak Can that we loaned to a property owner in the North Fork of the Flathead drainage. They had chained it to a post so no one would steal it. A grizzly bear was able to get some leverage and was able to get into it. That is why we use the term “bear resistant”.

Emphasis is placed on trying to find solutions that will prevent problems from occurring at the same site again. With the landowner, we walk the property identifying why the bear was attracted to the site and how that attractant can be secured so that this bear or other bears will not visit the site and repeat the problem. Many times, the solutions are simple and the landowners are willing to assist us by securing the attractants. Bird feeders, pet food, fruit, garbage, and poultry are the primary attractants we deal with and all are usually easily secured.

During the 2019 field season, in attempts to capture bears for management reasons, culvert traps were set a total of 73 times for a total of 330 trap nights. All the management traps were set on private property (Figure 1).

When multiple bears, including family groups were involved in conflict situations, multiple traps were set. The family trap we share with Glacier National Park was used on several occasions to capture cubs when the adult female was captured.

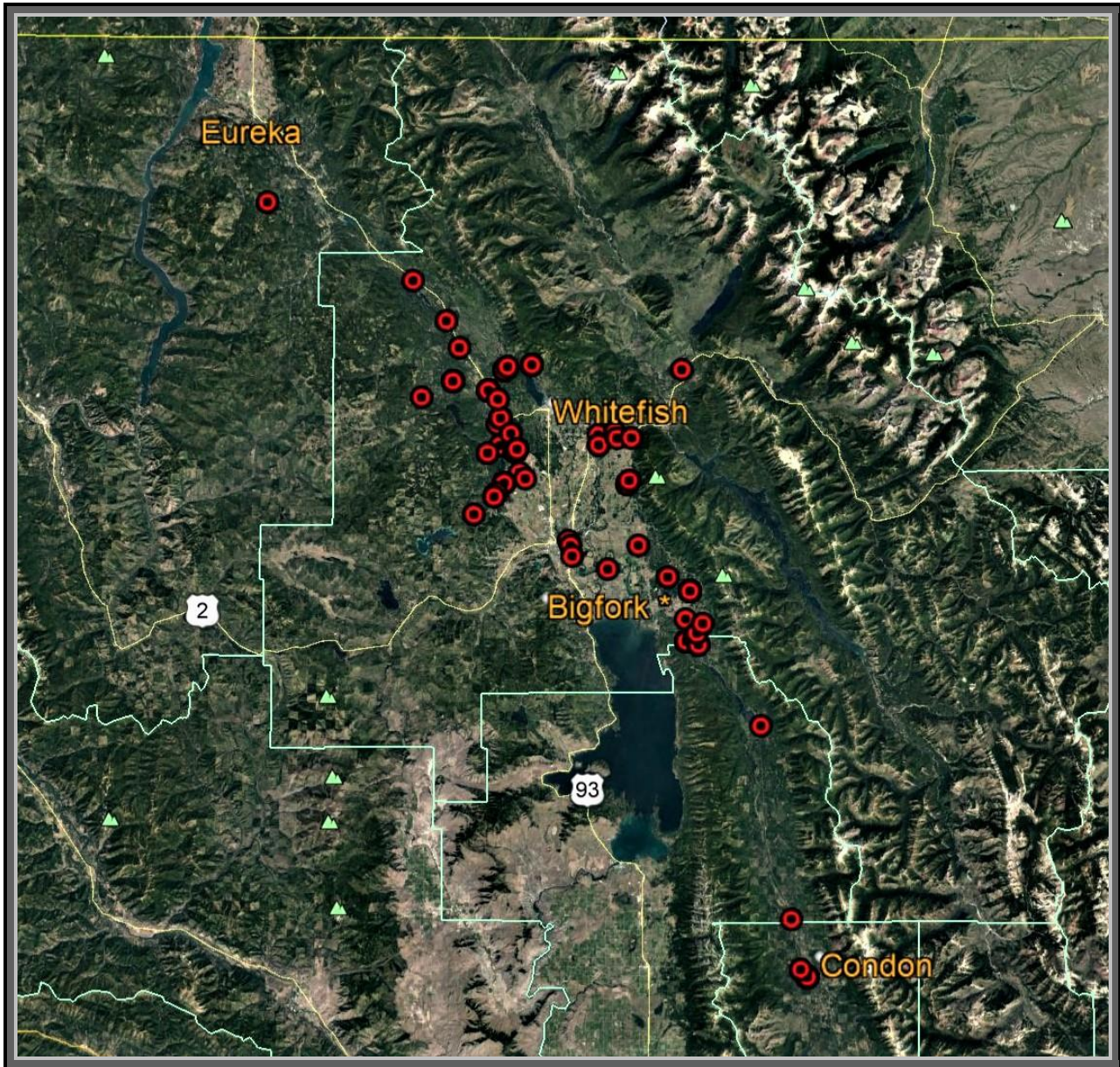


Figure 1. Locations of trap sites set in attempts to capture grizzly bears for management.

Grizzly Bear Management Captures

The decisions to capture grizzly bears for management reasons are not made without careful consideration. Human and bear safety are primary considerations. In many cases, the decision to capture and translocate a bear is made to give us time to properly remove or secure an attractant. In some cases, the decision has been made to remove a bear from the population due to repeat conflicts, level of property damage, or concerns about human safety.



Adult female grizzly bear (NWM195) outside traps where her two yearlings (NWM248 & NWM249) are being held.

Management trapping resulted in 19 captures of 16 individual grizzly bears. All 19 captures occurred on private land (Figure 2). Fifteen of the 19 captures occurred outside of the grizzly bear recovery line.

The 16 individual grizzly bears that were captured included 2 adult females, one with 3 cubs of the year (2 female cubs captured), and one with 1 female cub of the year, 7 subadult males, 2 subadult females, 2 yearling males and no adult males (Table 1).

All grizzly bears were captured in culvert traps. Captured grizzly bears were anesthetized with Telazol or Telazol/Medetomidine administered by syringe pole. All grizzly bears were examined for injury, age, sex, breeding condition, lactation, and overall physical condition. Temperature and respiration were monitored and recorded. A pulse oximeter was used to monitor heart rate and oxygen level. Supplemental oxygen was provided. This year we purchased a used Invacare portable oxygen concentrator. We tested it on a few bears with mixed results. It does not provide a steady flow of oxygen. Instead, when it detects an exhale, it provides a puff of oxygen. We found with a younger bear it worked well and kept the bears oxygen level over 90. On other bears, it wouldn't detect the exhale and would shut down. We will continue to test it and provide bottled oxygen if needed.

Basic physical measurements were taken and recorded. Weights were recorded with a digital scale. A Bioimpedance Analyzer was used to measure resistance to calculate % body fat to quantify body condition. Bears over 2 years of age were radio-collared and in a special case, a female cub of the year was radio-collared with an Iridium collar that can be triggered to drop off. All grizzly bears were microchipped for identification. We microchipped the first grizzly in 1995.

Hair samples were collected for both DNA and stable isotope analysis. We first collected hair for DNA in 1994 and the first DNA analysis was in 1998 in coordination with the USGS. Blood was spun using a

centrifuge and the serum and whole blood were collected, frozen and sent to Washington State University for stable isotope analysis beginning in 2010. The isotope analysis was used to determine the primary diet (meat or vegetation) of the grizzly bear within certain time periods, within a week, month or year.

Grizzly bears that we anesthetized were held overnight in culvert traps on a bed of straw until they recovered from the effects of the drugs. They were kept in an isolated area, monitored with minimal human contact and given water once they recovered from anesthesia.

Table 1. Grizzly bears captured for management in Flathead Portion Region 1, 2019.

Record	Bear ID	Capture Date	Sex	Age Class	CapNo	Capture Drainage	Release Drainage	Current Status
442	NWM255	5/30/19	Male	Subadult	1	Stillwater	Euthanized	Dead
443	NWM249	6/12/19	Male	Yearling	2	Whitefish	Euthanized	Dead
444	NWM248	6/12/19	Male	Yearling	2	Whitefish	Euthanized	Dead
445	NWM224	7/8/19	Female	Subadult	2	Flathead	MFK Flathead	Dead
446	NWM256	7/23/19	Female	Adult	1	Swan	Onsite	Dead
447	NWM257	8/21/19	Male	Subadult	1	Flathead	SFK Flathead	Alive
448	NWM258	8/22/19	Female	Subadult	1	Flathead	SFK Flathead	Alive
449	NWM256	9/4/19	Female	Adult	2	Swan	Euthanized	Dead
450	NWM259	9/5/19	Female	Cub	1	Swan	Sent to GWDC	GWDC
451	NWM260	9/6/19	Female	Cub	1	Swan	Sent to GWDC	GWDC
452	NWM261	9/20/19	Male	Subadult	1	Whitefish	NFK Flathead	Dead
453	NWM262	9/20/19	Male	Subadult	1	Whitefish	NFK Flathead	Dead
454	NWM263	9/23/19	Male	Subadult	1	Stillwater	Euthanized	Dead
455	NWM264	10/7/19	Female	Adult	1	Swan	SFK Flathead	Dead
456	NWM265	10/8/19	Female	Cub	1	Swan	SFK Flathead	Alive
457	NWM266	10/22/19	Male	Subadult	1	Swan	MFK Flathead	Dead
458	NWM264	10/25/19	Female	Adult	2	Swan	Euthanized	Dead
459	NWM265	10/26/19	Female	Cub	2	Swan	SFK Flathead	Alive
460	NWM267	11/14/19	Male	Subadult	1	Flathead	NFK Flathead	Alive



Figure 2. Management grizzly bear capture locations in 2019. Numbers relate to BearID in Table 1.

NWM255 was a subadult male that was captured on Lost Creek Road, west of Kalispell. The bear was repeatedly breaking into a chicken coop and killing chickens. The bear also got into unsecured garbage at the end of the driveway. Efforts were made to protect the chickens with electric fencing but the first night of installing fencing, the landowner forgot to turn on the energizer. The second night the bear grounded out the fence resulting in more damage and more dead chickens. Due to the amount of property damage and persistence of the bear, the decision was made to euthanize him.





NWM248 & NWM249 were two yearling male grizzly bears that were the offspring of adult female grizzly **NWM195**. This family group was captured in 2018 near Whitefish after killing chickens and translocated into the North Fork of the Flathead drainage. They returned to the Whitefish and Stillwater River areas and continued to break into chicken coops and kill chickens in 2018 and 2019. They also killed sheep on three different occasions. Attempts to recapture the family group in 2019 resulted in the capture of the two yearlings. The adult female would not pull on the bait and left the area after several days. After reviewing the amount of chickens killed and property damage, the decision was made to euthanize both of the male yearlings. Trapping efforts continued for the adult female but were unsuccessful. She eventually dropped her radio collar in the Haskill Basin area during the summer. She may emerge with new cubs of the year in 2020. We expect that she will continue to break into chicken coops and kill chickens.

NWM224 was a three-year-old female that was originally captured as a cub in 2016 with her mother. This year she was captured for killing pigs on the east side of the Flathead Valley. She was fitted with an Iridium GPS collar and released in Puzzle Creek up the Middle Fork of the Flathead drainage. She spent most of her time in Glacier Park and on the Blackfoot Reservation and not causing any conflicts. In the fall she was in a remote area of Glacier Park during a big snowstorm. She then moved to the east on the Blackfoot Reservation along the BNSF railroad tracks. She ended up being hit and killed by a vehicle along Highway 2 while going to the carcass of a cow that had been hit and killed by the train during the snowstorm.



NWM224 radio collared after being captured for killing pigs southeast of Columbia Falls.

NWM256, NWM259, NWM260 This was a family group consisting of an adult female and her three cubs-of-the year in the area near Condon. The adult female (NWM256) was originally captured as a subadult for the trend monitoring program. In July, we got a call about a female grizzly with cubs that had gotten into a buried food cache on private land. The remaining good food was secured, and the rotten food was taken to the landfill. A trap was set, and the adult female was captured quickly. A remote camera



photographed the cubs at the trap in the middle of the night. The adult was not wearing a radio collar, but the microchip indicated it was the female that was a trend bear and she had dropped her radio collar a week earlier. The decision was made to fit the adult

female with an Iridium GPS collar and release her onsite to reunite with her cubs. The landowner agreed, and she was released onsite. The family group was monitored, and we also got reports of them starting to hang around houses, getting into non-bear resistant garbage cans and dumpsters, gaining access to barns, and even trying to go into kitchens. We did set a trap at the location where she tried to go into the first kitchen. They showed up at the trap but wouldn't go in and left the area. We put up a critter gitter on the back porch in case she returned to deter her from trying to go back in. We delayed trapping for them until they got to a location where we could do it safely. In September, they got into a tack shed in a barn to get horse feed. We set up traps and ended up capturing the adult female the first night, and then two of her cubs, which were both females. We kept the bears in traps onsite trying to capture the third cub. It came to the traps for several nights and then left. After several long discussions, talking to landowners, looking at GPS collar locations, the decision was made to euthanize the adult female and send the two female cubs to the Grizzly and Wolf Discovery Center in West Yellowstone. The third cub was left in the wild. If it showed up around residences, we would try to capture it. That did not occur.



Grizzly bear cubs NWM 259 & NWM260 were transported to the GWDC.

NWM257 is a subadult male that was first reported along the Flathead River near Kalispell feeding on chokecherries. A trap was set due to where he was at among houses, but he moved on. A while later we got a report that a grizzly bear was observed getting into unsecured garbage cans at a couple of residences along the Flathead River. The garbage was secured, and a trap was set. The bear was captured immediately. He had no previous history and was collared and released in the Spotted Bear drainage. He went southwest along the South Fork drainage and then proceeded to travel north along the east side of Hungry Horse Reservoir. He ended up in Coram, Martin City, and Hungry Horse and was reported getting into garbage and fruit trees. He then moved east through Badrock Canyon and was in Columbia Falls. He continued getting into unsecured garbage in the middle of the night. He followed the Flathead River and ended up near where he was originally captured. Then he turned around and went back north to Columbia Falls. Traps were set near Kalispell and Columbia Falls at 4 different locations. He was detected on camera at two of the trap sites but wouldn't go in. Eventually, he left Columbia Falls and headed to West Glacier. He moved into the park and it appears he denned above Avalanche Lake.



NWM257 feeding on chokecherries in a backyard on the east side of Kalispell. He later got into unsecured garbage and was captured and translocated. Landowner photo.

NWM258 This subadult female was originally captured on the Flathead Indian Reservation by the CSKT bear biologist. She was captured where sheep depredation had occurred. She was collared and released in Glacier Park near Anaconda Creek. She eventually moved west and ended up along the Stillwater River west of Whitefish. We monitored her movements along the Stillwater and received reports of her feeding on natural fruit on the edges of yards. She was seen a lot and was very habituated to people and human activity. She had not caused any major conflicts except for people being concerned about how much she was around houses. We captured her and released her in the Spotted Bear drainage. She ended up moving northeast and eventually showed up around East Glacier and then further east on the Blackfoot Reservation. Again, she was being observed near homes and was also feeding on spilled grain at grain silos.

The Blackfoot bear biologists hazed and attempted to trap her with no success. She eventually moved back into the mountains and denned.

NWM261 & NWM262 We believe these two subadult male grizzly bears were first reported by a mountain biker in the Haskill Basin area near Whitefish. He reported encountering two young bears that were hesitant in getting off the trail he was riding on. About a month later we got a report from the Iron Horse Subdivision reporting two young grizzly bears had drug a deer carcass off the road and into the brush near the ridge by Haskill Basin. No further reports from there. In September, we got several calls and photos of two young grizzly bears in yards and around houses in a subdivision along the road up to Whitefish Mountain Resort. Two traps were set, and they were captured, fitted with GPS radio collars and released together on the Flathead National Forest near Frozen Lake, which is on the British Columbia border. They ended up moving east into Glacier Park near Kintla Lake and then returned to the Frozen Lake area. From there, they moved farther west and ended up in the valley at the base of the Galton Range near Grasmere. They were observed feeding on apples and started hanging around residences and reportedly got onto porches. The B.C. Conservation Officers contacted us to get additional information about their history. They decided to try and capture them, but they moved around too much. Eventually, they ended up being shot and killed by a landowner. The case is under investigation.

NWM263 We received several reports of at least one grizzly bear being seen and getting into unsecured garbage, dog food, and fruit trees in Olney. There was also a report of a grizzly getting into garbage in an open garage just south of Olney. A trap was set near the garage but no activity. Then we got more reports from Olney. We set a trap in Olney and eventually captured an unmarked subadult male. While we were drugging and preparing to collar him, we noticed a wound behind his front shoulder. Turns out it was a recent bullet wound. We also had noticed the bear was acting lethargic while in the trap. After relaying the information to the USFWS and my supervisor, the decision was made to euthanize the bear. We had the bear X-rayed at a local veterinary clinic and confirmed he had been shot with a bullet and with bird shot.



NWM263 in culvert trap and examining bullet entry wound behind left shoulder.

NWM264 & NWM265 are a female grizzly and her female cub of the year. We had numerous reports of a female grizzly bear with cubs of the year getting into chicken coops in the Ferndale area. We helped landowners with protecting their chickens with electric energizers when we were notified of a conflict. Unfortunately, we usually found out about the situation after coops

were destroyed and chickens were killed. In the fall, we got a call about a grizzly bear that had gotten chicken feed, killed chickens, and had done some damage to two vehicles trying to get to chicken feed that was in the trunk. At the same time, there were reports of a female grizzly with just one cub killing chickens just to the north. We set traps where the vehicles were damaged, and we captured an unmarked adult female and her female cub of the year. Since she was unmarked and had a cub, the decision was made to give her another chance. She was released in the Spotted Bear drainage. In about a week, she had returned to the Ferndale area. We didn't get any reports of her causing conflicts, but her GPS locations showed she was visiting the places where chickens had been killed. About two weeks later, they were captured where a trap had been set for a different grizzly bear. Because of the previous conflicts she had been involved with, the decision was made to euthanize the adult female. Since the female cub was in good shape, we decided to give her another chance. She was fitted with a GPS collar with a drop off mechanism that could be triggered remotely so it doesn't get too tight. We released her on the east side of Hungry Horse Reservoir. She moved north and was on the outskirts of Martin City and Coram. We were able to document she was feeding on gut piles and meat scraps from big game killed by hunters. People reported seeing her tracks in the snow but no reported conflicts. Her collar turned off December 1st, so we do not know where she dened.



NWM266 In late October, we received several reports of a grizzly bear killing chickens, west of Kalispell in the Rhodes Draw area. Residents had chased it off several times, but it kept returning. We also noticed several unsecured garbage cans tipped over in the area. We spoke to the residents about electric fencing to protect their chickens and they were going to do that but needed some time to get it accomplished. We set a trap and captured an unmarked subadult male grizzly bear. We contacted Glacier Park and got permission to release the grizzly bear at Packers Roost. The main road was closed due to road work, so

the number of visitors in that area would be minimal. After being released, the bear moved east over Logan Pass and down the north side of St. Mary Lake. Eventually, he ended up along Lower St. Mary Lake. The Blackfeet biologist contacted me and said that a grizzly bear had been getting into an over-filled garbage dumpster east of the lake. After checking the GPS locations, we determined that NWM266 had been at that location. The biologist set up cameras and set a trap. Two grizzly bears showed up at the site. One was NWM266 and the other was not collared. NWM266 was soon captured and the decision was made to euthanize him. The property owner where the dumpster was located was fined by tribal wardens.

NWM267 In November, we had reports of a grizzly bear getting into unsecured garbage and fruit trees in Columbia Falls. A trap was set but it took a while before the bear would go into it. An unmarked subadult male was captured. The bear was fitted with a GPS collar and released in the upper Whale Creek drainage. After being released, he moved north toward Trail Creek. His collar turned off December 1st, so we do not know where he dened.

Grizzly Bear Releases

Ten of the 16 grizzly bears that were captured for management reasons were initially released back into the wild (Figure 3). Two were recaptured and euthanized, the other six bears were euthanized. Two female cubs of the year were sent to the Grizzly and Wolf Discovery Center. All the grizzly bear releases are entered into the database of the MFWP website at:

http://fwp.mt.gov/fishand_wildlife/livingwithwildlife/relocation/.

The grizzly bears that were released were either relocated to an approved site or released onsite with the permission of the landowners. One grizzly bear was released on private land, nine releases occurred on the Flathead National Forest, and one in Glacier National Park.

Prior to releasing any bears, we coordinated with the MFWP, USFWS, and the land management agency or landowner. We made sure that there were not any people working, hiking, camping, or parked at or near the release sites. If there was an unattended vehicle at the gate or near the site, we would move to an alternate location.

All the bears that were released had been held overnight or for a sufficient period of time for the anesthetizing drugs to have worn off. All the releases were “soft” releases where we just opened the door and the bear left.

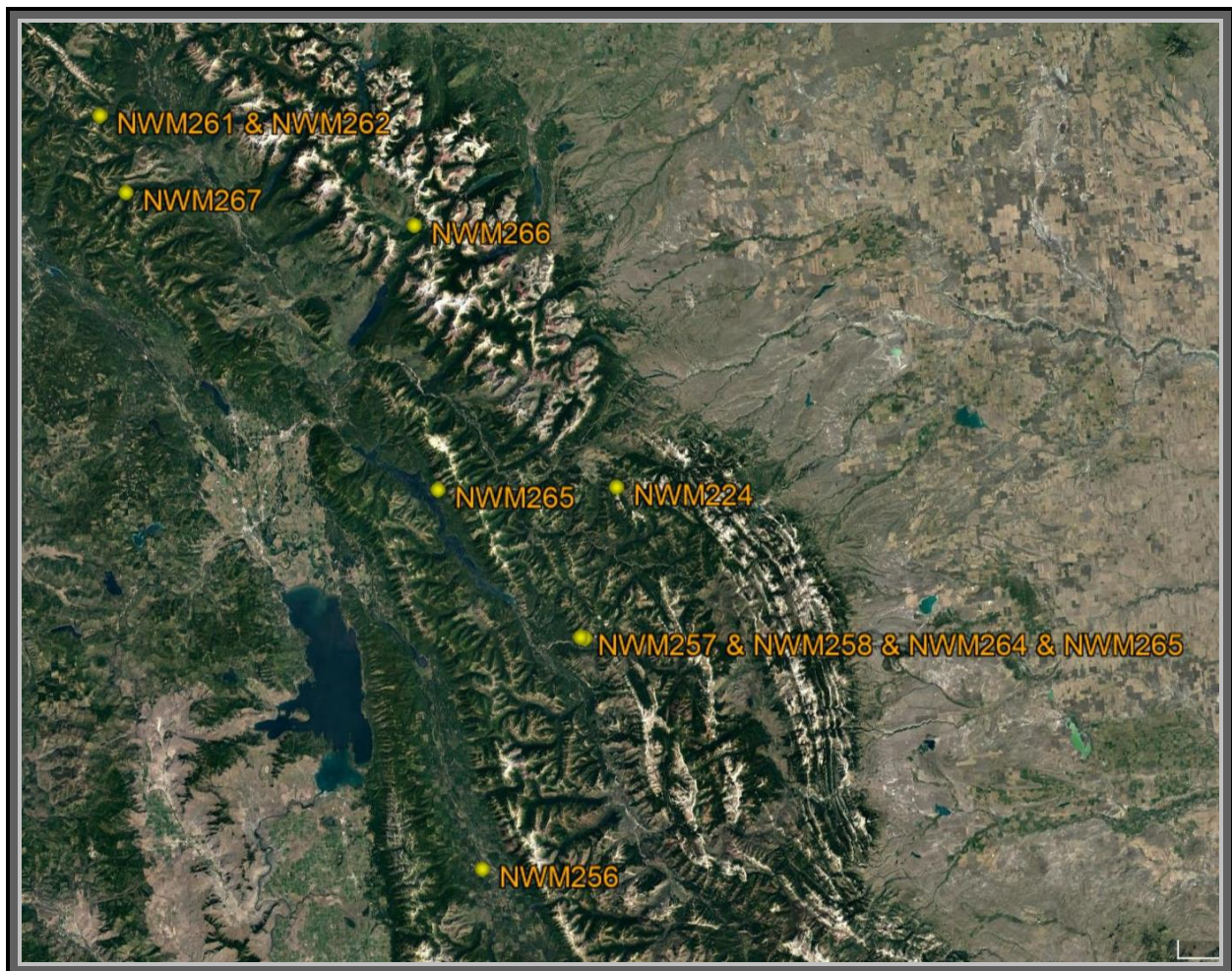


Figure 3. Management grizzly bear release locations in 2019. Numbers relate to BearID in Table 1.

Monitoring

Radio-collared grizzly bears were monitored from the ground and from the air. In previous years we attempted to fly at least once a month. With the new GPS Iridium collars, we can monitor the bears without the need for monthly flights. A total of 4 monitoring flights were conducted with MFWP helicopter pilots Ken Justus and Rob Cherot, and Two Bear Air Rescue pilot Jim Pierce.

Ten grizzly bears were fitted with Iridium GPS collars with geofence capability and released back into the wild. One of the ten was a female cub of the year which was fitted with a GPS collar with a remote release system.

The geofence technology allows us to delineate polygons around places where we want to obtain additional GPS locations to document the bears movements. When a bear is in a remote area and away from residences, the collar acquires a GPS location every 6 hours. When the bear moves into the geofence polygon, the collar acquires a GPS location every 30 minutes.

The collars store the GPS locations on the collar, but we can also download all or some of the data through a satellite connection once every other day. This allows us to limit the amount of flying and ground tracking time to obtain locations. Although the downloads do not provide real time data, we are still able to monitor the grizzly bear movements and activity much better than with the previous generation of VHF and GPS radio collars.

To save battery power, the GPS collars turn off on December 1st and turn on March 15th. In the future, new collars will be programmed to turn off December 15th and turn on March 1st. We are finding some bears aren't denning until after the 1st of December and some bears are emerging from their dens prior to March 15th.

The GPS collars are built with a mortality switch that produces a mortality pulse rate if the collar does not move for 6 hours. On the spreadsheet of the collar downloads we can see if the collar went to mortality. A collar not moving for 6 hours can be the result of the bear being dead or the collar falling off. Once a collar is on mortality, we attempt to retrieve the collar to determine if the bear is dead or if the collar just dropped.

Funding for some of the collars and refurbishment of dropped collars was received from BNSF through NFWF and MTOLF. An additional 10 Iridium GPS collars were purchased through MTOLF with money donated by two private individuals. Madelon Martin did a fundraiser during 2019 which allowed us to refurbish two GPS collars.

Three Iridium GPS collars are needing to be refurbished for the 2020 field season. New Iridium GPS collars cost about \$2400 each. To refurbish a collar, the cost is about \$1600. While the cost of the collars is much higher than the traditional \$350 VHF collars, we can get up to 48 accurate GPS locations a day, depending on if the bear is within the geofence or not, compared to maybe less than 10 somewhat accurate VHF locations a month. Also, with the GPS and download technology, flight costs drop dramatically.

Grizzly Bear Management Captures (1993-2019)

Since 1993, 263 individual grizzly bears have been captured 456 times as part of the grizzly bear management program. The number of new grizzly bears captured ranged from 1 in 1994 to 20 in 2004. The years 1998, 1999, 2004, 2011, and 2012 had many grizzly bears captured because of the poor huckleberry crop in the falls of 1998, 2004, and 2011 (Table 2).

Table 2. Grizzly bears captured in management actions within the NCDE portion of Region 1. 1993-2019.

Year	# Captures	# Ind. Bears	# New Bears
1993	2	2	2
1994	1	1	1
1995	16	12	11
1996	12	10	8
1997	15	13	9
1998	24	19	12
1999	26	13	8
2000	13	13	9
2001	15	12	7
2002	8	7	6
2003	14	13	13
2004	39	28	20
2005	7	7	5
2006	11	8	7
2007	21	15	10
2008	13	10	6
2009	13	10	7
2010	25	23	16
2011	45	31	19
2012	19	18	13
2013	12	10	6
2014	10	9	7
2015	15	13	11
2016	16	16	10
2017	21	15	10
2018	23	20	17
2019	19	16	13
R-1 Management Total	456 (mean = 16.8)		263 (mean = 9.7)

Reasons For Capturing Grizzly Bears For Management (1993-2019)

Of the 456 management captures and handling of grizzly bears (1993-2019), the highest categories were the captures of dependent young that were caught while trapping for the adult females that were involved with some type of management action, followed by grizzly bears captured for being around homes, depredations on domestic animals, and accessing feed for domestic animals and wild birds. Next were bears getting into domestic fruit trees and incidental captures of grizzly bears while trapping for black bears or bears causing the actual conflict. Property damage, accessing garbage, and grizzly bears digging up domestic carcasses or taking

harvested game on private property comprised the rest of the categories. All categories and sub-categories for management captures and handling of grizzly bears are listed in Table 3.

Table 3. Reasons For Capturing and Handling Management Grizzly Bears. 1993-2019.

Category	Sub-category	Number of Captures
Dependent Young		96
Around Homes		79
Depredation	Poultry	42
	Goat	4
	Pig	4
	Llama	2
	Sheep	2
	Calf	1
	Dog	1
Depredation Total		56
Feed	Pet	25
	Wild Bird	11
	Horse	7
	Pig	5
	Poultry	3
Feed Total		51
Fruit		38
Incidental		32
Property Damage	Shed	11
	Garage	4
	Cabin	3
	Freezers	3
	Vehicle	2
	Kennel	1
	Trailer	1
Property Damage Total		25
Garbage		22
Carcass	Deer	4
	Horse	4
	Butcher Scraps	1
	Cow	1
	Dog	1
Carcass Total		11
Orphaned		11
Habituated		9
Campground		5
Grease		4
Food		5
Leghold Trap		4
Grain		3
Preventative		3
Grain Spill		1
Wounded		1

Status of Grizzly Bears Sent to Zoos or Facilities

Since 1993, we have sent 30 grizzly bears to zoos or research facilities. Most of these were cubs and yearlings, but a few occasions included subadult or adult grizzly bears that we felt would adapt to captivity. These were bears that would have been killed if they hadn't been placed elsewhere. We prefer to have bears alive and in the wild. Removing a grizzly bear from the population is a final option.

The first grizzly was removed in 1993 and was sent to the San Antonio Zoo in Texas. She was a 7 years old female from Spotted Bear. I am not sure of her status.

Two female grizzly bears were sent to the Bronx Zoo; a subadult in 1995 and a cub in 2003.

Two female cubs were sent to the Wildlife Way Station, a wildlife rescue facility in California, in 1995. As far as we know they are still there, but the facility was being closed in 2019.

The Grizzly and Wolf Discovery Center (GWDC) in West Yellowstone now houses four grizzly bears we have sent to them. All the bears are still alive and doing well. The first one was an adult female in 2002 from the Whitefish area. She had been captured and relocated 5 times before being removed. In 2011, the second bear was a subadult male from the Coram area after being captured and relocated twice before. The third and fourth bears are female cubs that were captured in 2019 near Condon after the adult female was killed for repeated conflicts.



Also, in 2002, a male grizzly bear cub located near Whitefish was sent to the Denver Zoo. DNA revealed that its mother was the adult female grizzly sent to the (GWDC) later in 2002. The cub was housed with a young female grizzly bear from Alaska. The male was euthanized in 2019 after having severe arthritis and other health issues.

Six grizzly bears were sent to the Washington State University Research Facility at Pullman, Washington. The first four bears were sent in 2000. They included a subadult female, originally from Seeley Lake, and an adult female and two of her male cubs from the Polebridge area. A subadult female was sent there in 2008 from the Flathead Valley. The last bear was a subadult male sent there in 2010. Originally, he was from the Ferndale area but was recaptured at Seeley Lake. All the bears sent to WSU were utilized for research and have been euthanized.

In 2004, a female and male cub that were orphaned after their mother was hit and killed by a train near Essex, were sent to the zoo in North Dakota. Their status is unknown.

In 2005, Washington Park Zoo in Michigan City, Indiana, received two female grizzly bear cubs after we killed the adult female for repeated conflicts in the Coram area. Their status is unknown.

The Cheyenne Mountain Zoo in Colorado Springs, Colorado became the home for two unrelated subadult male grizzly bears in 2008. One bear was from the Eureka area and the second bear was from Swan Lake. Both were on their own but had caused repeated conflicts before being removed. They have both bonded and are doing well in captivity.

Four grizzly bear cubs, 3 females and 1 male, were sent to the North Dakota Zoo in 2011, after both of their mothers were killed for repeated conflicts and killing pigs. Two are still at the North Dakota Zoo in Bismarck. Two of the female cubs have been transferred to the Henry Vilas Zoo in Madison, Wisconsin.

Two yearlings, 1 male and 1 female, were sent to the St. Louis Zoo in Missouri in 2017, after their mother was killed for repeated conflicts in the Ferndale area. They are currently in a new 11.1-million dollars exhibit and have adapted to captivity.

Some of these zoos have put a lot of money into large outside enclosures and are providing information on grizzly bear conservation. A suggestion is to contact these zoos and inquire about having them assist with fundraising to help with on-the-ground efforts to minimize human/grizzly bear conflicts.

Management Grizzly Bear Mortality and Removals (1993-2019)

Of the 263 individual management grizzly bears captured in Region 1 since 1993, 155 (59%) are known to have died or have been sent to zoos (Table 4). Most of the mortalities (52%) have been through management removals. There were no management removals in 1994, 2001 or 2014.

Human-caused mortality of female grizzly bears has a large influence on the recovery of the grizzly bear. Reducing the number of management removals of all grizzly bears, especially females, is a priority with this program. In the first three years (1993-1995), a total of 4 female grizzly bears were removed through management actions. In the following 7 years, 3 additional females were removed, 2 in 2000 and 1 in 2002. The year 2004 saw an all-time high removal of female grizzly bears with 6 females removed through management actions.

In 2019, we killed two adult female grizzly bears (NWM256 & NWM264) and sent two female cubs (NWM259 & NWM260) to the Grizzly and Wolf Discovery Center. A fifth subadult female (NWM224) that we had captured and relocated died after being struck by a vehicle on Hwy 2 near East Glacier. Three subadult males and two yearling males were removed in management actions, and two subadult males were killed by a landowner in British Columbia (under investigation).

In addition to the known mortality of management grizzly bears captured in 2018, there was a subadult male captured in 2017 that was killed in 2018 and which is currently under investigation. The remains of an adult male (NWM103) were located in the woods near Coram. The cause of death is unknown.

Table 4. Cause-specific and class-specific mortality and removals for 155 grizzly bears. Numbers represent known mortality and removals of marked grizzly bears captured in management actions in Region 1. 1993-2019.

Age Class	Cause of Mortality									Total (%)
	Natural	Mistaken id	Self Defense	Management deaths	Sent to Zoo or WSU	Malicious	Handling	Vehicle/ Train	Unknown	
Adult										
M	0	0	1	12	0	2	0	1	5	21 (14)
F	0	2	2	10	3	3	0	2	2	24 (15)
Subadult										
M	0	0	6	20	5	13	0	5	4	53 (34)
F	0		1	3	4	3	0	2	0	13 (8)
Cub	1	0	0	2	14	0	1	3	8	29 (19)
Yearling	1	1	1	5	3	2	0	1	1	15 (10)
Total (%)	2 (1)	3 (2)	11 (7)	52 (33)	29 (19)	23 (15)	1 (1)	14 (9)	20 (13)	155

Cabinet Mountains Grizzly Augmentation Program

Since 2005, MFWP has been involved with the capture and translocation of both female and male grizzly bears into the Cabinet Mountains, south of Libby and Troy, Montana.

A total of 18 grizzly bears have been captured within the Northern Continental Divide Ecosystem (NCDE) and translocated to release sites that were approved for the Kootenai National Forest in both the West Cabinet and main Cabinet Mountains. Until their collars fell off it was known that 12 of the 18 augmented bears had remained in the Cabinet Mountains.

During 2019, we captured two subadult grizzly bears in the Whitefish Range. A subadult female in the Deadhorse drainage and a subadult male in the Hallowat drainage. The bears were transported to Libby where they were anesthetized, radio-collared, allowed to recovery, and released. Neither bear had any known conflict history. Both bears had denned in the Cabinet Mountains by the end of 2019.

Kim Annis and Wayne Kasworm provide annual reports that give additional information regarding the Cabinet Mountains Grizzly Augmentation Program.