Grizzly Bear Management 2020 Annual Report NCDE Portion of Region 1 Montana Fish, Wildlife & Parks



Madelon Martin photo.

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Table of Contents

Acknowledgements	2
Introduction	2
Goal and Objectives	4
Grizzly Bear Technician.	8
Prevention	8
Presentations, Meetings, and Training	12
Reported Grizzly Bear Conflicts	13
Grizzly Bear Management Captures	17
Grizzly Bear Releases.	27
Monitoring	28
Grizzly Bear Management Captures (1993-2020)	30
Reasons for Capturing Management Grizzly Bears	30
Status of Grizzly Bears Sent to Zoos or Facilities.	32
Management Grizzly Bear Mortality (1993-2020)	33
Cabinet Mountains Augmentation Program (2005-2020)	34



Grizzly bear looking for ducks in a shed. Remote camera photo.

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Introduction

Year 2020 was interesting and challenging. The Covid-19 pandemic did have some impact on our work. We were considered essential, so we continued to respond to grizzly bear conflict reports. We tried to address most of the issues over the phone, by text or email, but in many cases, it required a response in person.

We canceled most of our in-person presentations and conducted meetings by computer or conference calls. We continued to set traps, capture, handle, relocate or euthanize grizzly bears as necessary. We assisted landowners with electric fencing, set up remote cameras, loaned bear-resistant garbage containers, and deployed critter gitters.

In the past, we covered calls for the Eureka area, including Fortine, Trego and Stryker, all within Lincoln County and adjacent to the NCDE. Beginning in 2020, Kim Annis and her technician, Amber Kornak,

took over responding to calls and reports in that area. Kim is based in Libby and has worked closely with Lincoln County officials and landowners, so it made sense to have her cover that area also. We coordinated and worked together during the transition. Unfortunately, in October due to medical leave, Kim was not able to respond on the ground. Amber continued covering that area until she was done working November 1st. I continued receiving and responding to grizzly bear calls the remainder of 2020.

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. We provide data on female grizzly bears with young, confirmed reports of grizzly bears outside the recovery zone, confirmed grizzly bear conflicts, and grizzly bear mortalities. Cecily Costello and Lori Roberts produce an annual report that can be found on the MFWP website.

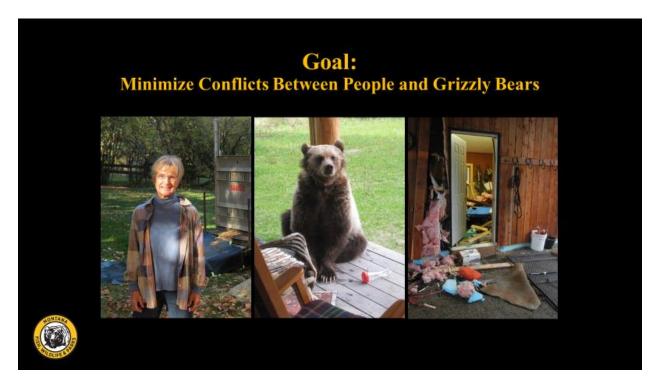
In 2005, MFWP began an augmentation program of capturing grizzly bears with no history of conflict from the NCDE and releasing them into the Cabinet Mountains. We continue that effort annually.

This report is an overview of the work conducted during 2020 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:

Objective - To minimize grizzly bear conflicts by working with landowners to identify, secure or remove attractants.



Objective - To work with agencies to promote food storage on public lands to minimize grizzly bear conflicts.



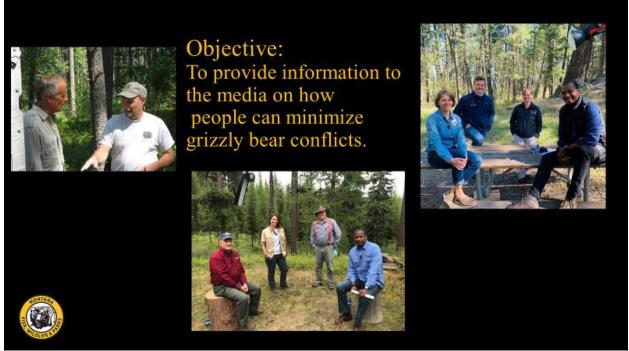
Over-filled bear-resistant dumpster (removed) and garbage that was left by campers on the Hungry Horse Ranger District (found and cleaned up by USFS Wildlife Technician).

Objective - To work with city, county, state, and federal governments to minimize grizzly bear conflicts.



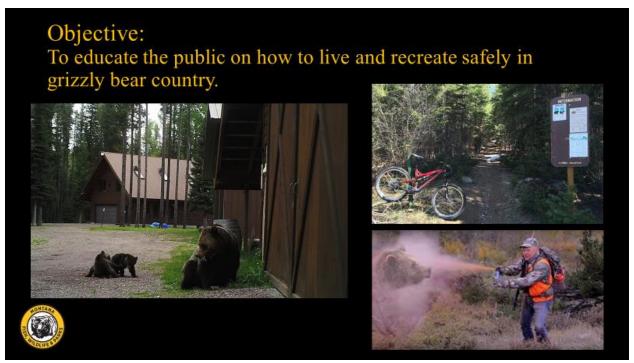
Garbage transfer stations and activity in four counties. Sites made bear-resistant (green), sites that need repair (yellow), sites that are not bear-resistant (red).

Objective - To provide information to the media on how people can prevent grizzly bear conflicts.



Media coverage by Jack Hanna and 60 Minutes.

Objective - To educate the public how to live and recreate safely in grizzly bear country.



Grizzly bears at a seasonal residence, informational signs for hikers and mountain bikers, and providing guidance on the use of bear pepper spray.

Objective - To respond to grizzly bear conflicts on private and public lands.



Objective - To develop relationships with the landowners, public, NGOs, and agency personnel to improve trust, coexistence, and tolerance.



We decided to add the last objective after attending some of the Governor's Grizzly Bear Council meetings. There was a lot of discussion about public trust, landowner tolerance of grizzly bears, and trying to coexist with grizzly bears when possible. Over the years, in many areas we have worked, we think the tolerance for grizzly bears has improved. Residents that live

in grizzly bear country expect them to be around and have learned or are learning how to coexist. The difficult areas are in those places where people do not expect to have grizzly bears around. It is important that we respond to grizzly bear reports and conflicts in a timely manner when possible. If a site visit isn't possible, we need to follow up with a phone call. Failing to contact the reporting party in a timely manner will only reduce trust in our management and will result in a decrease in the tolerance of grizzly bears, with possibly less reporting as a side effect of both.

Grizzly Bear Technician

The Montana Outdoor Legacy Foundation (MTOLF) 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 third season and began work in May.

Over the last three 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. 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, 2020. I was still getting grizzly bear reports 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, social media, etc.), 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. The Covid-19 pandemic certainly reduced the amount of contact we had with landowners which impacted our prevention efforts.

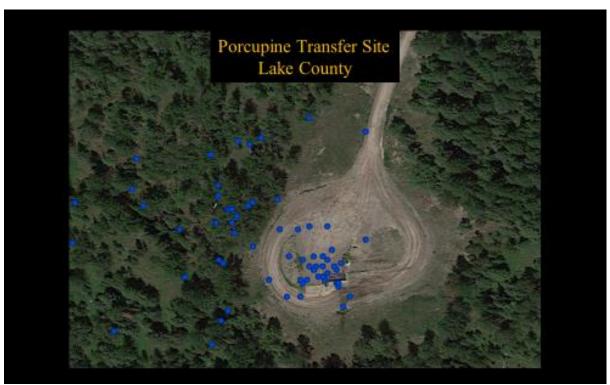
County Garbage Transfer Stations

We work with Flathead, Lake, Lincoln, and Missoula counties and the management of their garbage transfer stations or "green box sites" on how to make them bear-resistant. Flathead and Lincoln counties have put a lot of effort and money into making their garbage transfer stations bear-resistant.

Flathead County was the first to relocate and install electric fencing around their Coram transfer site. Since then, Flathead County 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 garbage transfer station design and efforts. Within and adjacent to the NCDE, they have protected their sites at Glen Lake, Pinkham, Trego, and in 2020, the Fortine site. Previously the county moved the dumpsters from Stryker to the fenced Trego site. Kim Annis, 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, although in the fall of 2020, we did know of a radio-collared female grizzly with two cubs of the year that gained access to garbage at this site. The issue seemed to be a problem with the lid closing all the way. Lake County was notified and attempted to correct the problem. Unfortunately, the family group continued to visit the site prior to denning. Lake County is proposing to remove this transfer station for several different reasons and is holding community meetings to determine the fate of the site.



GPS locations of a female grizzly with two cubs at the Lake County Porcupine garbage transfer site south of Swan Lake.

Many years ago, the Ferndale site developed a leak in the buried hydraulic line and the county has yet to fix the problem. We have contacted Lake County numerous times about the situation at the Ferndale site and have asked landowners, who use the site to also contact the county about fixing the leak, so the lids can be opened and closed by users of the site. So far, no action has been taken by the county. The county did put up a chain link fence and a new gate around the site, but bears can easily climb the fence since there isn't any electric component to it. We will continue to work with Lake County Sanitation to resolve the issues.

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. Republic Services has replaced some bear-resistant dumpsters that have malfunctioned or rusted out. Swan Valley Bear Resources continues to monitor bear-resistant containers in the Swan and has been very helpful working with Republic Services.

City of Whitefish: For many years, Erik Wenum, has been working closely with the city of Whitefish regarding primarily black bear related 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 2019 to discuss the bear situation in Whitefish and lack of bear-resistant containers. 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 will continue the effort of working with Whitefish and Republic Services in minimizing bear conflicts within the city of Whitefish.

We are hoping that Whitefish will be the example of a responsible "Bear Smart Community" for all communities in the region. The Interagency Grizzly Bear Committee and the Grizzly Bear Education and Outreach Committees are exploring the idea of working with interested communities and NGOs on establishing "Bear Smart Communities" throughout Montana.

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/MFWPElectric-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 10 temporary and permanent electric fencing projects located near Columbia Falls, Whitefish, Creston, Bigfork, Ferndale, Swan Lake, and Eureka. We also have an electric fence loaner program. During 2020, eight electric fence energizers and net fences were loaned to landowners.

Electric Screens and Mats: For the past 13 years we have been utilizing pulsating electric fence energizers to electrify screens on rubber mats on the ground in front of doors, on screens stapled over windows and doors of chicken coops and sheds, 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 2020, we continued to utilize some of these techniques to protect chicken coops, garage doors, and for the first time; on wooden pallets in front of three grain silo doors. Although we didn't get video footage of a grizzly touching the electrified screen on the pallets, we did get video of the grizzly visiting the grain

bins four different times and not getting into them again. We will continue to evaluate and modify the setup in 2021.

Justine and Dillon Tabish (MFWP) also designed and distributed posters to local businesses that sold poultry and electric fencing supplies. These posters suggested the use of electric fencing to protect poultry and chicken coops from bears.



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, fruit trees, porches, and any attractants that can't be quickly secured. We loaned critter gitters to 24 different locations.

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 the Montana Outdoor Legacy Foundation (MTOLF) and the National Fish and Wildlife Foundation (NFWF).



This loaner program has been very popular and currently 10 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 and Bear Aware Programs: In the fall of 2019, 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 600 people were following the page by the end of 2020. The local food banks have expressed an interest in helping with the program and receiving excess fruit. In both 2019 and 2020 fruit donations could be dropped off at the Kalispell FWP office to be given to the Grizzly and Wolf Discovery Center in West Yellowstone. This provided the bears at the center with an adequate amount of food and seems to be a positive motivator for people to pick and donate their fruit.

On May 26, Justine created the Flathead Bear Aware Facebook page. The page was created to provide information to the public on preventing bear conflicts, information on electric fencing and provides updates on MFWP bear management activities in the Flathead area. By the end of the season, over 2300 people were following the page.

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 2020, due to the Covid-19 pandemic, the Bear Fairs and Wake-up Social were canceled.

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. Again, due to the Covid-19 pandemic, most in person presentations, meetings, and training sessions were either canceled or held remotely via computer or conference calls.

February:

Flathead Valley Community College Presentation. February 8. Public. North Fork Interlocal Meeting in Kalispell. February 12. Agencies and Public. Governor's Grizzly Bear Council Meeting in Libby. February 26-27. Council & Public.

April:

Whitefish Legacy Partners Presentation in Kalispell. April 23. Public & NGO. Whitefish Legacy Partners Bear Aware Program in Whitefish. April 30. Presentation. Public.

May:

NCDE Subcommittee Virtual Meeting. May 29. Agencies & Public. Montana Wilderness Association Webinar. Presentation. May 29. Public.

August

Explorers Club Webinar. August 3. Bear Biologists & Public.

October:

Bob Marshall Wilderness Foundation. Webinar. October 22. Presentation. Public.

November:

NCDE Subcommittee Virtual Meeting. November 23. Presentation. Agencies & Public.

December:

IGBC Meeting via Zoom. December 11. Agencies & Public. SVBR Meeting via Zoom. December 16. Agency & NGO.

Reported Grizzly Bear Conflicts

In 2020, we received 250 reports related to bears. Of those reports, 131 were classified as confirmed grizzly bear conflicts. Seventy-nine reports were not classified as conflicts and consisted of sightings, remote camera photos, or reports that could not be confirmed. The remaining 40 reports or calls were grizzly bear reports for different areas, black bear reports, or requests for information. Reports for Lincoln County were passed on to Kim Annis and Amber Kornak. Reports from the Flathead Indian Reservation were given to Stacy Courville. Black bear reports were provided to Erik Wenum and Chad White.



A grizzly bear broke into a shed in the Swan Valley to get horse feed (left). Swan Valley Bear Resources helped us electrify the shed doors and windows. The bear returned but the electric kept the bear out. A family group of grizzly bears in the Flathead Valley broke into a chicken coop to get chicken feed and killed chickens (center). The landowner put up electric fence and didn't have any more issues. A female grizzly and her cub of the year getting garbage off a porch in Columbia Falls (right). The residents removed the other garbage and were asked to put their freezer inside.

The two most common confirmed grizzly bear conflicts were bears killing poultry (34 reports) and getting into unsecured garbage (32 reports). Bears getting into wild bird feed (11 reports) and feed for poultry, pets, pigs, and horses were also reported conflicts. Property damage involved chicken coops, barbeque grills, a garage, vehicle, and trailer. Reported depredations in addition to poultry involved goats, pigs, llamas, and rabbits. Fruit trees were damaged in the fall. Grain was obtained at two farms with grain silos. Two hunters were injured by a female grizzly with two cubs. Other reported encounters that did not involve any human injuries occurred with mountain bikers, hikers, a landowner surprising a sow and her cub on his property, and a woman riding a horse. Numerous calls were received because bears were feeding on grass in yards and being seen next to homes.

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

monitored the bear activity with remote cameras or we installed critter gitters. We also provided information about our Flathead Fruit Gleaning page on Facebook.



Scat from a family group of grizzly bears in the Bigfork area. Carrots from a garden and apples from an orchard. Temporary electric fencing was put up around the sites with the help of Bryce Andrews with People and Carnivores.



After a grizzly bear broke into their chicken coop, these landowners along the Stillwater River put up a permanent electric fence to protect their chickens in the future.



Grizzly bear getting into unsecured garbage in Ferndale. Remote camera photo by landowner.

In previous years, the number of calls and reported grizzly bear conflicts ranged from 10 in 1993 to over 250 in 1998. Since 1993, the number of reports 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.

Trapping was not always an option especially not when we dealt with and female and cub(s). Attempting to capture family groups can be the most difficult. In many cases, we decided not to attempt trapping because the risk of capturing a grizzly bear cub and not the adult female could make the situation more dangerous. This a big concern in situations where the traps cannot be located a safe distance from residences or away from human activity.



Bear-resistant Kodiak garbage container that we loaned to a property owner in the Bigfork area to store chicken feed. The lid wasn't latched when the bear tipped it over (left). Female grizzly with cubs getting into a Toter can containing dog food near Eureka. The bear broke through the side of the container (right). 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 here in Region 1, and all are usually easily secured.

During the 2020 field season, in attempts to capture bears for management reasons, culvert traps and a few foot snares were set a total of 110 times for a total of 410 trap nights. A trap night is a common way to measure trapping effort. For example; one trap set for one night is one trap night. Three traps set for two nights are six 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.

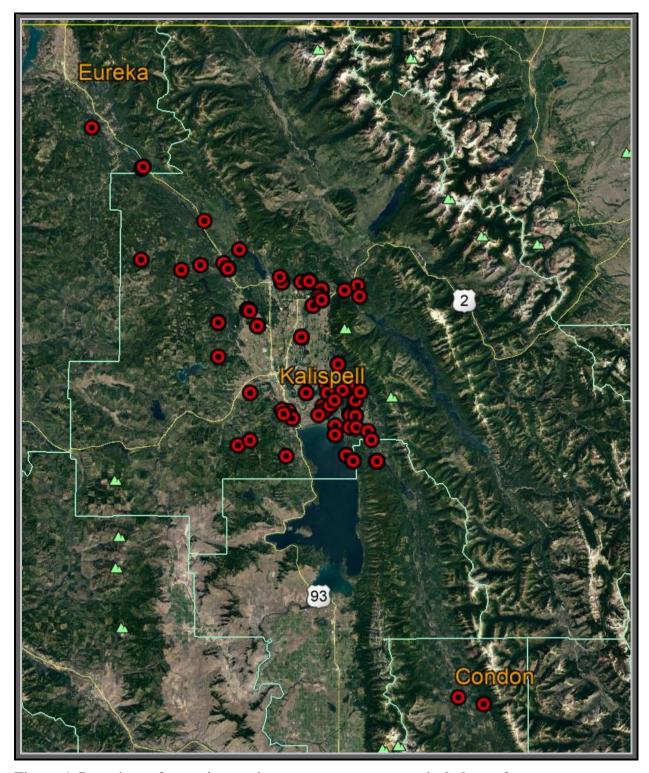


Figure 1. Locations of trap sites set in attempts to capture grizzly bears for management.

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.



Subadult male grizzly bear (NWM279) at culvert trap, just before being captured.

Management trapping resulted in 19 captures of 19 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 19 individual grizzly bears that were captured included two adult females, one with three yearlings (three female yearlings captured), and one with a male cub of the year, five subadult males, six subadult females, two yearling females and no adult or yearling 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.

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, 2020.

Record		Capture Date	Sex	Age Class	CapNo		Capture Drainage Release Drainage		
recoord	Bear 15	Captare Bate	- OCA	Age Oluss	Oupito	Captare Brainage	Release Brainage	Guirent Gtatas	
461	NWM268	4/24/20	Female	Yearling	1	Flathead	NFK Flathead	Alive	
462	NWM269	4/25/20	Female	Adult	1	Flathead	Euthanized	Dead	
463	NWM270	4/26/20	Female	Yearling	1	Flathead	NFK Flathead	Alive	
464	NWM271	4/26/20	Female	Yearling	1	Flathead	Euthanized	Dead	
465	NWM272	5/7/20	Female	Subadult	1	Swan	NFK Flathead	Dead	
466	NWM273	5/7/20	Female	Subadult	1	Swan	NFK Flathead	Dead	
467	NWM274	5/7/20	Male	Subadult	1	Swan	NFK Flathead	Dead	
468	NWM275	5/28/20	Female	Subadult	1	Swan	SFK Flathead	Alive	
469	NWM276	6/7/20	Male	Subadult	1	Stillwater	Stillwater	Alive	
470	NWM257	6/11/20	Male	Subadult	2	Flathead	Euthanized	Dead	
471	NWM277	7/8/20	Female	Subadult	1	Flathead	SFK Flathead	Alive	
472	NWM265	7/10/20	Female	Yearling	3	MFK Flathead	SFK Flathead	Alive	
473	NWM230	7/12/20	Female	Subadult	5	Flathead	MFK Flathead	Alive	
474	NWM278	9/11/20	Male	Subadult	1	Whitefish	SFK Flathead	Alive	
475	NWM279	10/12/20	Male	Subadult	1	Flathead	NFK Flathead	Alive	
476	NWM225	10/20/20	Female	Adult	2	Flathead	MFK Flathead	Alive	
477	NWM280	10/20/20	Male	Cub	1	Flathead	MFK Flathead	Alive	
478	NWM281	10/21/20	Female	Yearling	1	Flathead	On-site	Dead	
479	NWM282	11/2/20	Female	Subadult	1	Flathead	SFK Flathead	Alive	



Figure 2. Management grizzly bear capture locations in 2020. Numbers relate to BearID in Table 1.

NWM268, NWM269, NWM270, & NWM271 was a family group of grizzly bears that was captured north of Columbia Falls. During the fall of 2019, the had been getting into pig feed, fruit trees, and bird feeders. In the spring of 2020, they continued that behavior and began killing chickens. The entire family group was captured, which included an adult female and three yearling females. Due to the large number of repeated conflicts the decision was made to kill the adult female. One female yearling was observed limping and after being captured, we took



her to a local veterinary clinic where her front paw was X-rayed. We saw there was a broken bone in her foot, most likely due to the trap door hitting it when the adult female was captured. The decision was made to euthanize her. The other two yearlings were microchipped but not radio-collared. They were released together at Logging Creek in Glacier National Park. NWM268 was recaptured on Stryker Ridge while augmentation trapping. When she was being handled in Libby, a microchip was detected and due to her management history, she was not a

candidate for the augmentation program. She was radio-collared released back on Stryker Ridge where she was captured. It appears she is denning on Stryker Ridge.



NWM272, NWM273, & NWM274 were three-year-old grizzly bears that were in the Ferndale and Woods Bay areas. They were captured on the west side of Swan Lake after getting into unsecured garbage, dog food, and bird feeders at numerous locations during the fall of 2019 and the spring of 2020. All three grizzly bears were radio-collared. The male (NWM274) was released in the North Fork of the Flathead at the Canadian border. The two females were released together in the North Fork in Whale Creek. All three bears eventually traveled west to the Fortine, Trego, and Stryker areas. They continued getting into unsecured garbage and bird feeders. Kim Annis and Amber Kornak recaptured all three of them and they were all euthanized.

NWM275 is a subadult female that was captured in Ferndale after she found an unsecured garbage bag with some dog food in it. She would not leave even after the landowner had buried it. She was radio-collared and released on the east side of Hungry Horse Reservoir in Deep Creek. Eventually, she swam across Hungry Horse Reservoir and ended up in the Swan Range. We recaptured her while augmentation trapping in Goldie Creek. Her collar looked like it was wearing well, so we released her on-site. She stayed on the east side of the Swan Range until after the huckleberries dropped off. She then moved west and dropped into the Flathead Valley. She was around Many Lakes, Creston, and Lake Blaine but did not cause any conflicts. It looks like she might den in the Swan Range.



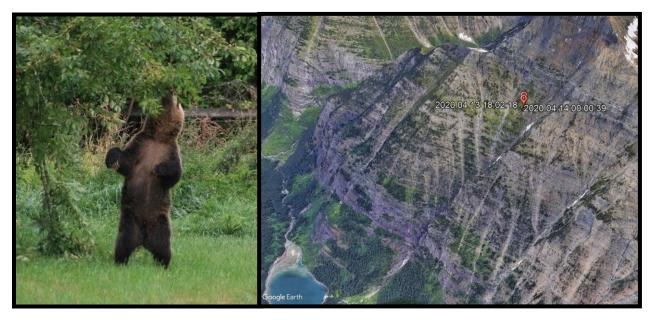
NWM276 is a 4-5 year old male that was an incidental capture near Stryker, where we had set a trap trying to recapture the two subadult females (**NWM 272 & NWM273**). Because this male was captured at Stryker and what looked to be a gunshot injury that was not critical to his overall well-being, we decided to radio collar him to monitor his activity. We released him near the capture site up Sunday Creek because we did not want to release him too close to Stryker, the railroad tracks, and highway. He has spent most of his time west of Highway 93 in the Salish Range. He did make a few trips to the east into the Whitefish Range. He spent much of September along creeks and a small stream that may have had spawning kokanee salmon. He did show up at a residence west of Trego where biodiesel was being produced. We worked with the landowner on electric fencing and the landowner got rid of some empty plastic containers that

had contained biodiesel. There were no other reported issues with this bear. It appears that he has denned in the Salish Range.



Male grizzly bear NWM 276, incidental capture near Stryker. Landowner photo.

NMW257 was a subadult male that was first reported along the Flathead River near Kalispell feeding on chokecherries in 2019. 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 showed up 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 four 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 he denned above Avalanche Lake.



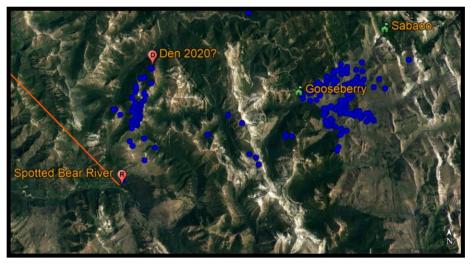
NWM257 feeding on chokecherries in a backyard on the east side of Kalispell (2019). He later got into unsecured garbage along the Flathead River and was captured and relocated. He went and denned on Bear Hat Mtn above Avalanche Lake in Glacier National Park.

In 2020, he left Glacier and ended up at the north end of Columbia Falls. He continued to get into unsecured garbage as he did in 2019. He eventually moved into the Hungry Horse community and was recaptured at the Glacier Bible Camp. He was put down due to his repeated conflicts of getting into garbage in town.

NWM277 This subadult female was captured near Eagle Bend Golf Course, just west of Bigfork. For several weeks there had been reports of a single grizzly bear on the golf course, getting into bird feeders and garbage cans around Bigfork. The bear was eventually captured along the Flathead River just south of Highway 82 and Sportsman's bridge. We estimated her age at 4-5 years. She was radio-collared and released at the end of the Spotted Bear River road. She spent quite a bit of time within the Bob Marshall Wilderness Area. In October, she was along the South Fork of the Flathead River near Spotted Bear. Her last GPS location was north of

Spotted Bear near Dry Parks. We have not gotten any additional GPS downloads since October 9th and her status is unknown.

NWM265 is a yearling female grizzly bear that we captured in the fall of 2019 as a cub with its mother. We put down the adult female for repeated conflicts and decided to radio collar and release the female cub on the east side of Hungry Horse Reservoir in Deep Creek. She ended up moving north along the reservoir and



ended up denning near Desert Mountain. She emerged in the spring of 2020 and started spending time between the communities of Martin City and Coram. She spent most of her time on the Forest Service mule pasture and did not cause any conflicts. Due to her proximity to unsecured attractants, we decided to recapture her on private land, check the fit of her radio collar that can be remotely triggered to drop off. This capture was considered preventative to keep her from going into one of the communities and getting garbage. We released her at the end of the Spotted Bear River Road. She ended up moving east into the Gooseberry and Strawberry Creek areas of the Bob Marshall Wilderness. After the berry season she moved back toward the Spotted Bear drainage and ended up denning between Shafer and the Spotted Bear River. This was the second orphan female cub that we radio-collared and they both were able to den successfully on their own. We will drop this bear's collar after she emerges from the den in the spring of 2021.



NWM230 This four-year-old female grizzly bear was an incidental capture in 2020 while trying to capture a different grizzly bear that was killing chickens north of Echo Lake. NWM230 was originally captured as a yearling with her sibling near Eureka. She has been recaptured, radio-collared and relocated several times since then. This time, she was again released in the Puzzle Creek drainage near Marias Pass. She had been released there twice before. She quickly returned to the Flathead Valley and stayed around the Ferndale area. We got reports

of her getting into unsecured garbage. She went up and denned in the Swan Range and she may come out with cubs in 2021. If she continues getting into garbage and other attractants there is a good chance she will be removed.

NWM278 In mid-September, a small pig was killed in an unprotected pen off of East Edgewood Drive near Whitefish. A subadult male grizzly was captured at the location. The bear had no previous capture history. We radio-collared him and he was released in Deep Creek on the east side of Hungry Horse Reservoir. He moved into the Great Bear Wilderness Area between the South Fork and Middle Fork of the Flathead River. Late in the year he ended up in the community of Essex. He was reported to have gotten bird seed and unsecured garbage. We asked residents to put away all attractants and hoped that the bear would move on. He finally went across the Middle Fork into Glacier National Park. The last GPS locations we got before his collar turned off for the winter were in Glacier along the Middle Fork.

NWM279 is a 4-5 year old male that was captured just east of Columbia Falls. We were trying to capture an adult female with a cub that was at a local ranch getting into fruit trees. This male that was captured may have been getting fruit there, but we couldn't confirm that. We radio-collared this male and released him in Deadhorse Creek up the North Fork of the Flathead. He moved northwest in the Whitefish Range and ended up dropping into the area near Eureka. He went into the Pinkham Creek area almost to Lake Koocanusa and then traveled south near Olney and eventually ended up north of Columbia Falls. He then moved back north of Whitefish Lake and appears to have denned in the Whitefish Range southeast of Upper Whitefish Lake. We didn't have any reported conflicts involving him while he was radio-collared.



NWM279 was an incidental capture near Columbia Falls. Photo by Madelon Martin.

NWM225 & NWM280 We were finally able to capture this female NWM225 with her male cub (NWM280) just south of Columbia Falls. We believe they were the grizzly bears that had gotten into unsecured garbage along the Flathead River off Bayou Road. They then moved northeast of Columbia Falls and got into fruit trees. They then went back to Columbia Falls and got into garbage at a new apartment complex and at several residences. Efforts to trap them in those places were unsuccessful. They then moved south of the Flathead River, along Columbia Falls Stage. We were contacted by a landowner that had encountered them in his woods along the river. He jumped them out of their day bed and the female charged at him. He was able to deploy his bear spray at close range. He had his seven-year-old daughter and a dog on leash with him. They got back to the house safely. We set two traps and captured both bears that night. We

discovered the bears had been in the neighboring apple orchard and had also gotten unsecured garbage at another neighbor's house. After drugging the adult female, we detected that she was microchipped. She had been originally captured as a trend bear several years earlier at Granite Park in Glacier National Park. We captured her in 2016 at Vandevanter Meats south of Columbia Falls with a female cub of the year. At that time, we relocated her and the cub to Anaconda Creek in Glacier. She ended up denning on the Garden Wall and dropped her collar in the spring of 2017. This time, the decision was made to give her another chance since she did have a cub with her. Glacier Park allowed us to release her at Logan Creek since that area was closed to the public at the time. She and the cub moved back toward Columbia Falls, but never went back into town. They also spent time over near Lake Five before moving up the Middle Fork of the Flathead drainage to Nyack Flats. They then crossed the river and went up Harrison Creek in Glacier where they denned.



NWM225 was recaptured south of Columbia Falls along the Flathead River with her male cub of the year. They were relocated into Glacier National Park.

NWM281 Was a yearling female that was part of a trend monitoring family group of which the adult female was captured in 2019 on the east side of the Flathead Valley. The family group used the Mud Lake area north of Ferndale and the Jewel Basin Hiking area. In 2019 they denned on the edge of the Jewel Basin area. During the spring of 2020, they spent time in the Flathead Valley primarily grazing on alfalfa and digging ground squirrels. They were observed in hay fields but caused no conflicts. They spent the summer in the Jewel Basin area and after the huckleberries dropped off, they came back down into the valley. We started getting reports of them feeding on apples near the Swan River. They then moved to the northwest and ended up



getting into a garden and orchard where they fed on carrots and apples. We put up temporary electric fencing around the garden and orchard. Then they showed up at a residence where they killed chickens and ate chicken feed. We put up temporary electric fence there and set three culvert traps. We ended up capturing a yearling female. We ran the traps for two more nights trying to capture the adult and other yearling. Neither one would go into the traps. With the landowner's permission, we released the yearling on-site, so it would reunite with the other bears. They did get back together but stayed in the area and killed additional chickens at three different places. They then headed to the mountains but again dropped into the valley. On November 9th, we received a report of two dead grizzly bears that were dumped along the Bear Creek road off Highway 83. It was the adult female and this yearling. That case is under investigation. I later received reports of a young grizzly killing more chickens where the family group had been before. I set traps, but the bear never went to the traps.

NWM282 This subadult female was an incidental capture in November while we were attempting to capture a female with at least one cub that was killing chickens on the east side of the Flathead Valley. We fitted her with a radio collar and released her on the east side of Hungry Horse Reservoir in Deep Creek. She stayed east of the reservoir for a while and then swam across the reservoir. In a short period of time she crossed the Swan divide and was back into the Flathead Valley. She was photographed by landowners with trail cameras but not causing any conflicts. She then headed back east over the Swan divide and denned.



Grizzly Bear Releases

Sixteen of the 19 grizzly bears that were captured for management reasons were initially released back into the wild (Figure 3). Three were recaptured in Lincoln County and were euthanized, the other three bears were euthanized without being relocated. All the grizzly bear releases are entered into the MFWP relocation database.

The grizzly bears that were released were either relocated to an approved site or released on-site with the permission of the landowners. One grizzly bear was released on private land, one on the Kootenai National Forest, ten releases occurred on the Flathead National Forest, and four 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 were held overnight so that the anesthetizing drugs were metabolized. All the releases were "soft" releases where we just opened the door and the bear left.



Figure 3. Management grizzly bear release locations in 2020. Numbers relate to BearID in Table 1.

Monitoring

Radio-collared grizzly bears were monitored primarily with the GPS Iridium collars. Ground and aerial telemetry were also used to monitor movements and to get visuals on females with cubs. 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. Two monitoring flights were conducted with MFWP helicopter pilot Rob Cherot and Two Bear Air Rescue pilot Jim Pierce.

Thirteen grizzly bears were fitted with Iridium GPS collars with geofence capability and released back into the wild. Three of the 16 were microchipped but not radio-collared because they were yearlings and collars were not available. 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 six 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 or 15th and turn on March 1st or 15th. We are finding some bears are not 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 six hours. On the spreadsheet of the collar downloads we can see if the collar went to mortality. A collar not moving for six 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 ten Iridium GPS collars were purchased through MTOLF with money donated by two private individuals. Madelon Martin did a fundraiser during 2020 which allowed us to refurbish two Iridium GPS collars.

Six Iridium GPS collars are needed to be refurbished for the 2021 field season. New Iridium GPS collars cost about \$2,400 each. To refurbish a collar, the cost is about \$1,600. 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 (1993-2020)

Since 1993, 279 individual grizzly bears have been captured 475 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
2020	19	19	16
R-1 Management	475		279
Total	(mean = 16.9)		$(\mathbf{mean} = 9.9)$

Reasons For Capturing Grizzly Bears For Management (1993-2020)

Of the 475 management captures and handling of grizzly bears (1993-2020), 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 subcategories for management captures and handling of grizzly bears are listed in Table 3.

Table 3. Reasons For Capturing and Handling Management Grizzly Bears. 1993-2020.

Category	Sub-category	Number of Captures
Dependent Young		100
Around Homes		79
Depredation	Poultry	44
Depredation	Goat	4
	Pig	5
	Llama	2
	Sheep	2
	Calf	1
	Dog	1 59
Depredation Total		
Feed	Pet	25
	Wild Bird Horse	11 7
	Pig	5
	Poultry	3
Feed Total	1 outuj	51
Fruit		38
Incidental		35
Garbage		29
Property Damage	Shed	11
1 0	Garage	4
	Cabin	3
	Freezers	3 2
	Vehicle Kennel	1
	Trailer	1
Property Damage Total	Trunci	25
Carcass	Deer	4
Curcuss	Horse	4
	Butcher Scraps	1
	Cow	1
Carcass Total	Dog	1
		11
Orphaned		11
Habituated		5
Campground Food		5
Preventative		5
Grease		4
Leghold Trap		4
Grain		3
Grain Spill		1
Wounded		1

Status of Grizzly Bears Sent to Zoos or Facilities

Since 1993, we have sent 29 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. No grizzly bears were sent to zoos or facilities in 2020.

The first grizzly was removed in 1993 and was sent to the San Antonio Zoo in Texas. She was a seven-year-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. Status unknown.

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. Status unknown.

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 five 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.



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, three females and one 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, one male and one 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 (1993-2020)

Of the 279 individual management grizzly bears captured in Region 1 since 1993, 161 (58%) are known to have died or have been sent to zoos (Table 4). Most of the mortalities (35%) 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 four female grizzly bears were removed through management actions. In the following seven years, three additional females were removed, two in 2000 and one in 2002. The year 2004 saw an all-time high removal of female grizzly bears with six females removed through management actions.

In 2020, we killed one adult female grizzly bear (NWM269) due to numerous conflicts. Two subadult females (NWM272 & NWM273) were recaptured by Kim Annis near Trego and removed. A yearling female (NWM271) was euthanized at a veterinary clinic after an x-ray revealed a broken toe on her front foot due to a trap door hitting her foot. Two subadult males (NWM257 & NWM274) were both recaptured and killed after repeated conflicts. A yearling female (NWM281) was killed illegally along with its mother, a trend monitoring female. Both bears were dumped illegally near Bigfork. The USFWS and MFWP are both investigating.

Table 4. Cause-specific and class-specific mortality and removals for 161 grizzly bears. Numbers represent known mortality and removals of marked grizzly bears captured in management actions in Region 1. 1993-2020.

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 (13)
F	0	2	2	11	3	3	0	2	2	25 (16)
Subadult										
M	0	0	6	22	5	13	0	5	4	55 (34)
F	0		1	5	4	3	0	2	0	15 (9)
Cub	1	0	0	2	14	0	1	3	8	29 (18)
Yearling	1	1	1	5	3	3	0	1	1	16 (10)
Total (%)	2 (1)	3 (2)	11 (7)	57 (35)	29 (18)	24 (15)	1 (1)	14 (9)	20 (12)	161

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 by 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 2020, we captured a subadult female grizzly in a culvert trap near Stryker Ridge. She was transported to Libby where they drugged her. They discovered she was already microchipped and was a yearling female (NWM268) we had captured in April with the rest of the family group. She had been released at Logging Creek in Glacier National Park but wasn't radio-collared. Since she had been previously captured in a management situation, she was not a candidate for the augmentation program. She was radio-collared and released her near Stryker Ridge where she was captured. Two additional grizzly bears were captured but not candidates for the augmentation program, so they were released on-site. No grizzly bears were released as part of the augmentation program in 2020.

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