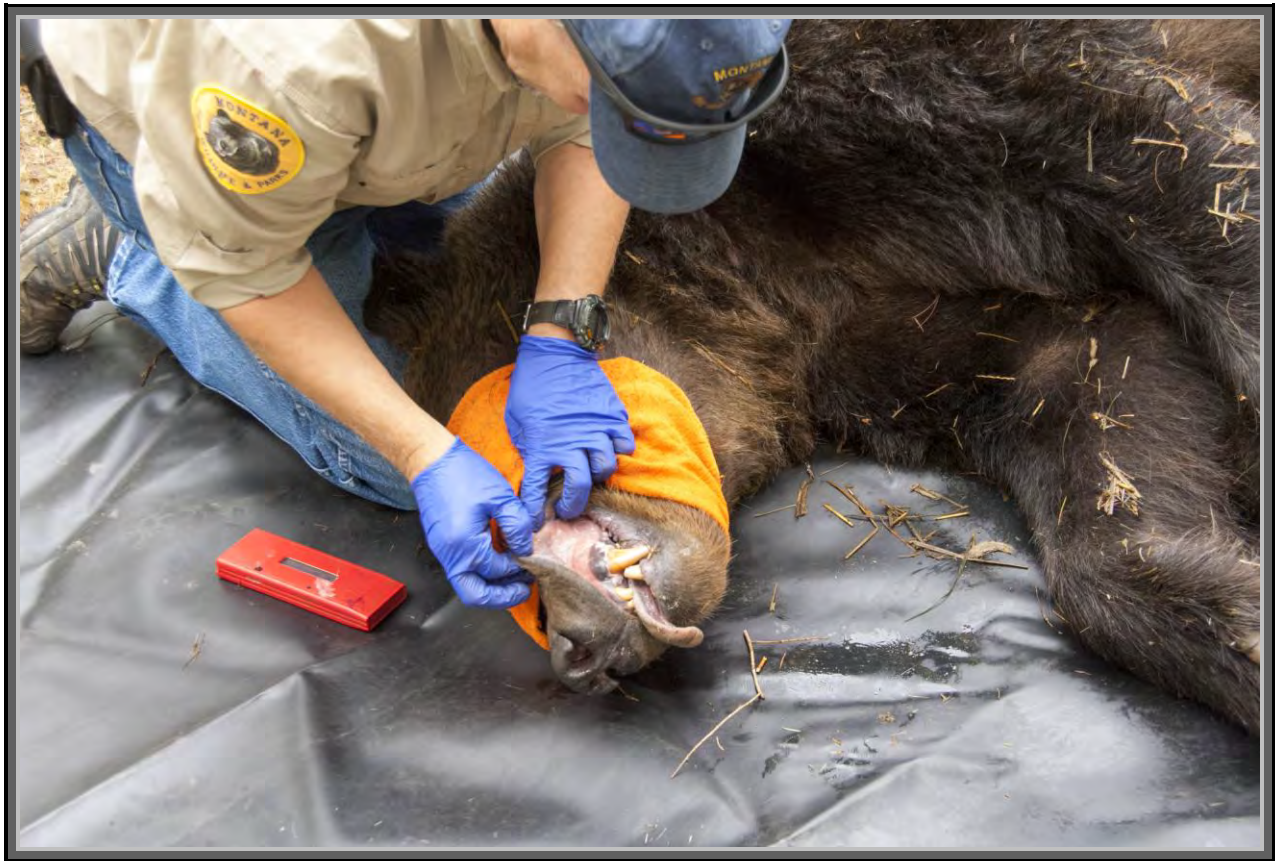


**Grizzly Bear Management  
2015 Annual Report  
NCDE Portion of Region 1  
Montana Fish, Wildlife & Parks**



**Adult male grizzly bear captured for killing chickens near Coram, MT (Photo by Harry McDaniel).**

**Prepared by:  
Tim Manley  
Grizzly Bear Management Specialist**

## Table of Contents

Acknowledgements.....	2
Introduction.....	3
Grizzly Bear Conflicts.....	3
Grizzly Bear Captures.....	5
Grizzly Bear Releases.....	7
Monitoring.....	8
Presentations.....	9
Prevention.....	10
Use of Technology.....	13
Grizzly Bear Management Captures (1993-2015).....	16
Management Grizzly Bear Mortality (1993-2015).....	16
Cabinet Mountains Augmentation Program.....	17



**Female grizzly bear with two cubs in the North Fork of the Flathead (Gerry Stearns photo).**



## Acknowledgments

The assistance from a large number of people was essential to having a successful grizzly bear management program. Funding was provided by Montana Fish, Wildlife & Parks (MT FWP), U.S. Fish and Wildlife Service (USFWS), U.S. Forest Service (USFS), Montana Outdoor Legacy Foundation (MTOLF), and National Fish & Wildlife Foundation (NFWF) through a grant from Burlington Northern Santa Fe Railroad (BNSF). Wildlife Technician, Dan Madel, was an invaluable partner during his first season. The funding for his position was through the MTOLF. Wildlife Managers Neil Anderson and Ken McDonald have supported management decisions. Coordination with bear managers Kim Annis, Dan Carney, Shannon Claremont, Stacy Courville, Kylie Jones, Jamie Jonkel, Mike Madel, Seth Thompson, Bob Weisner, and Erik Wenum was prompt and effective. Biologists Jessy Coltrane and Tim Thier provided help with the capture and handling of bears. Game Wardens Lee Anderson, Chuck Bartos, Perry Brown, Ben Chappelow, Chris Crane, John Obst, and Nathan Reiner were extremely helpful in the reporting and investigation of bear conflicts and mortalities. Research Biologist Rick Mace provided equipment and his assistance on numerous occasions. Research Assistant Lori Roberts helped with database management and logistical support. Fish, Wildlife & Parks helicopter pilot Ken Justus, Two Bear Air Rescue pilot Jim Pierce, and Red Eagle Aviation pilot Dave Hoerner all provided safe and excellent service when tracking bears by helicopter and airplane. Agency personnel with Glacier National Park were extremely helpful in coordinating bear management decisions. John Waller, Chuck Cameron, Barry Wollenzien, and Regi Altop all provided valuable assistance and coordination. Forest Service personnel Rob Davies, Reed Kuennen, and Deb Mucklow made timely decisions on the translocation sites for bears on the Flathead National Forest. Forest Service employees Rachel Manley, Mark Ruby, and Rick Yates assisted greatly with monitoring and reporting potential problems on Forest Service lands. Brian Manning with the Montana Department of Natural Resources (DNRC) assisted with decisions regarding the trapping and releasing of grizzly bears on DNRC lands. Chris Servheen and Wayne Kasworm with the U.S. Fish and Wildlife Service, supported management decisions and assisted in the handling and translocation of the augmentation grizzly bear in the Cabinets. Burlington Northern Santa Fe employees were always available and helpful when dealing with situations along the railroad tracks. Ryan Alter of Alter Enterprise provided great technology and assistance with the Automated Bear Trap. Several people have provided a large amount of time as volunteers. Doug Chadwick, Russ Chadwick, Adam Lieberg, Rachel Manley, Gary Moses, and Kyle Topham were extremely dedicated and helpful.



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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 reduce 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.

In 2005, Montana Fish, Wildlife & Parks 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 without contractors.

This report is an overview of the 2015 field season. It includes the reported grizzly bear conflicts, captures, releases, monitoring, prevention efforts, use of technology, and the Cabinet Mountains augmentation program.

## **Grizzly Bear Conflicts**

During the 2015 field season, we received over 100 calls that were reported as grizzly bear conflicts. About 85% were confirmed as grizzly bears. The other 15% were either black bears or undetermined. Approximately 99% of the calls were from private landowners that lived in or adjacent to grizzly bear habitat. The majority of the calls involved bears that became food-conditioned and were seeking unnatural foods around homes and developments. This year we continued to see grizzly bears killing chickens and causing property damage to chicken coops. Livestock depredation by grizzly bears in this area is rare. A male grizzly bear did kill at least one newborn calf northeast of Bigfork. None of the calls involved bears that were aggressive to humans or caused human injury.

The spring season began earlier than normal due to a large male grizzly that killed at least one newborn calf on the east side of the Flathead Valley. In an attempt to capture that bear, two non-target male grizzly bears were captured and translocated out of the area.

Other grizzly bear conflicts involved bears getting into wheat seed, fruit trees, gardens, a refrigerator on a porch, a pickup truck, bird seed, pet food, livestock feed, harvested game in a shed, and being in yards.



We had a hot and dry summer. This reduced the amount of huckleberries available to bears during the summer months. While the lower to mid-elevation berries were sparse, the upper elevation bears were good in some areas. Most conflict calls occurred in the spring and autumn months.



**Truck broken into by adult male grizzly NWM213 to get horse feed in the Coram area.**

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 a large number of phone calls as the bear moves from house to house).

Bear conflict specialists finalized a grizzly bear conflict database that will standardize the way reported conflicts are recorded. This allows comparison of management reports and actions throughout the Northern Continental Divide Ecosystem (NCDE) and with other ecosystem reports.

Once a grizzly bear conflict call 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 whether 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.

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.

## Grizzly Bear Captures



**Male grizzly bear cub NWM215 heading into the back portion of the family trap.**

In 2015, there were 15 captures of 13 individual grizzly bears (Table 1). The majority, 6 (40%) of the captures occurred in the summer, followed by 3 (20%) in the early spring, 3 (20%) during spring and 3 (20%) in the fall. Fourteen of the management captures were in culvert traps and one was an incidental capture of a cub in a wolf trap.

Fourteen of the 15 grizzly bear management captures occurred on private property. One of those captures occurred on a private in-holding within Glacier National Park. The incidental capture of the grizzly cub in the wolf trap occurred on the Swan State Forest.

The captures occurred in the main Flathead, North and Middle Forks of the Flathead, Swan, and Tobacco drainages (Figure 1). Three of the 15 captures occurred outside the boundary of the Grizzly Bear Recovery Area.

The 13 individual grizzly bears that were captured included 3 adult males, 2 adult females, one with a male cub and one with 2 cubs of unknown sex, 4 subadult males, and a female cub of the year.

Grizzly bears that were captured and handled 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 either radio-collared or equipped with ear tag transmitters. All grizzly bears were micro-chipped for permanent identification.

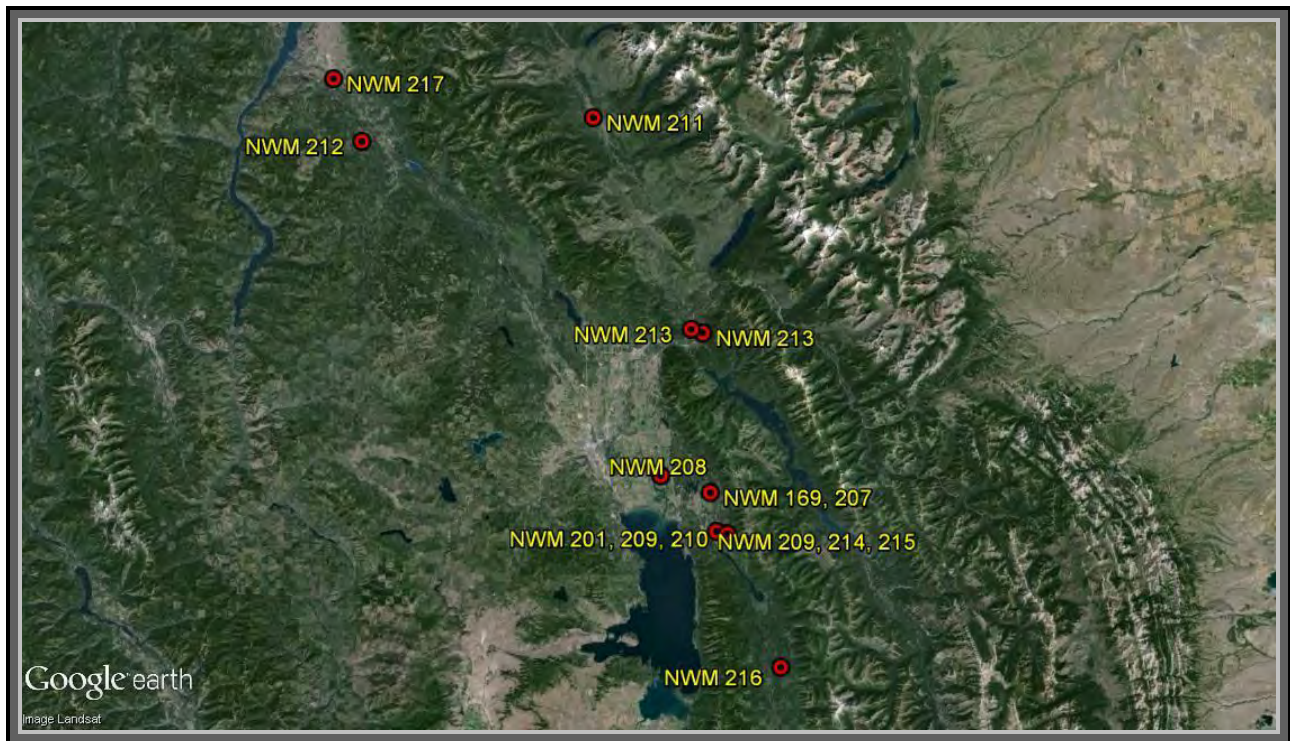
Hair samples were collected for both DNA and stable isotope analysis. Blood was spun using a centrifuge and the serum and whole blood was collected, frozen and sent to Washington State University for stable isotope analysis.

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, 2015.**

Record	Bear ID	Capture Date	Sex	Age Class	CapNo	Capture Drainage	Release Drainage	Current Status
367	NWM169	4/11/15	Male	Subadult	2	Swan	SFK Flathead	Alive
368	NWM207	4/13/15	Male	Adult	1	Swan	Swan	Alive
369	NWM208	4/23/15	Male	Subadult	1	Flathead	Flathead	Alive
370	NWM201	6/3/15	Female	Adult	2	Swan	SFK Flathead	Alive
371	NWM209	6/3/15	Unk	Cub	1	Swan	SFK Flathead	Alive
372	NWM210	6/3/15	Unk	Cub	1	Swan	SFK Flathead	Alive
373	NWM211	9/5/15	Male	Subadult	1	NFK Flathead	NFK Flathead	Dead
374	NWM212	9/6/15	Male	Adult	1	Tobacco	NFK Flathead	Alive
375	NWM213	9/8/15	Male	Adult	1	MFK Flathead	MFK Flathead	Dead
376	NWM214	9/12/15	Female	Adult	1	Swan	SFK Flathead	Alive
377	NWM215	9/13/15	Male	Cub	1	Swan	SFK Flathead	Alive
378	NWM209	9/15/15	Female	Adult	4	Swan	Swan	Alive
379	NWM216	10/4/15	Female	Cub	1	Swan	Swan	Alive
380	NWM217	10/5/15	Male	Subadult	1	Tobacco	MFK Flathead	Alive
381	NWM213	11/11/15	Male	Adult	2	MFK Flathead	NA	Dead





**Figure 1. Locations of grizzly bear management captures in 2015. Numbers relate to Bear ID in Table 1.**

## **Grizzly Bear Releases**

Twelve of the 13 grizzly bears that were captured for management reasons were released back into the wild. Adult male (NWM213) that killed chickens in Coram was first captured and translocated into the Puzzle Creek drainage. The bear returned to the Coram area within two months and caused property damage. That bear was recaptured and the decision was made to euthanize him.

Two male grizzly bears were incidental captures along the east side of the Flathead Valley while an attempt was made to capture a large adult male that had killed at least one new born calf. Both bears (NWM169 and NWM207) were radio-collared and released. NWM160 was released in Emery Creek and NWM207 was released in the South Fork of Lost Creek. Both bears eventually returned to the east side of the Flathead Valley and dropped their radio collars during the summer.

A yearling male grizzly bear (NWM208) was captured in the Flathead Valley for getting into wheat seed in a storage shed. The adult female and his sibling were not captured, so he was fitted with an ear-tag transmitter and released onsite with the permission of the landowner. On the next flight he was located and had reunited with the other two bears.

Female grizzly (NWM201) and her two cubs (NWM209 and NWM210) were captured east of Ferndale for getting into rabbit feed and killing rabbits and domestic geese. The family group was released on the east side of the Swan divide in Sullivan Creek. Eventually, they returned to the Ferndale area and the female was recaptured incidentally while an attempt was being made to capture an adult male that was killing chickens. The cubs would not go into the trap. After two nights of trapping, the adult female was released onsite with the permission of the landowner. The family group got back together and remained along the east side of the Flathead Valley until they went back into the mountains to den.



In addition to recapturing NWM201 while trapping for the adult male, we captured female NWM214 and her male cub NWM215. Both bears were released in the Sullivan Creek drainage. They also returned to the east side of the Flathead Valley and remained there until they went to den in the mountains.

A yearling male (NWM211) was captured for killing chickens on a private in-holding within Glacier National Park. The adult female could not be captured and the yearling male was fitted with an ear-tag transmitter and released onsite.

While attempting to capture and re-collar an adult female grizzly bear in the Salish Range, an adult male (NWM212) was captured. This bear was fitted with a radio collar and released in Whale Creek drainage.

A Wildlife Technician working for MT FWP captured a female grizzly bear cub (NWM216) in a wolf trap in the Swan drainage. We got the cub out of the trap, inserted a microchip, collected hair and blood samples, and released it onsite. The adult female was a radio-collared trend female and she was present at the site. When we were able to get a visual on the adult female about a month later, we did not observe NWM216 with her.

A subadult male grizzly bear (NWM217) was captured by MT FWP Wildlife Biologist Tim Thier near Eureka. This bear had been observed numerous times near Eureka. It ended up finding a dead deer along the river walk trail south of Eureka. The bear had previously been captured as part of a research project in southern British Columbia. The bear was radio-collared and released in the Puzzle Creek drainage.

## **Monitoring**

Radio-collared grizzly bears were monitored from the ground and from the air. An attempt was made to fly monthly if bears could not be located from the ground. A total of 15 flights were conducted with MT FWP helicopter pilot Ken Justus, Two Bear Air pilot Jim Pierce, and Red Eagle Aviation pilot Dave Hoerner.

Six of the grizzly bears radio-collared in 2015 were fitted with VHF collars, 2 with GPS collars, and 2 with ear-tag transmitters. None of the captured cubs were given transmitters. In order to locate the non-GPS transmitters, we had to locate the bears from the air. Unfortunately, in several instances, we were not able to locate some of the bears with the VHF transmitters. One bear, NWM212, we have not located since he was released in September.

Funding was received from BNSF through NFWF and MT OLF to purchase 6 GPS collars for management bears. Those collars were ordered and will arrive before the 2016 field season.

Most flights were about 3 hours in duration. A typical flight from Kalispell would head north to the Canadian Border then east to Glacier National Park then south to Spotted Bear, then northwest back to Kalispell. In addition to management bears, population trend monitoring bears were also located.

During each flight we would attempt to get visuals on females to determine if they had young and how many young survived throughout the year. We also recorded the pulse rate of the radio signal to determine if a collar had gone to mortality.

If a signal was on mortality, an effort was made to go in on the ground to determine if the bear was dead or if the collar had just fallen off. Three of the transmitters put on during 2015 went to “mortality mode”. Two of those were collars that had dropped and the third was a dead bear (NWM211).



**Visual of a radio-collared grizzly bear and two cubs from the helicopter.**

## **Presentations, Meetings, and Training**

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

Most presentations are given during the winter months and most workshops and training occurs in the spring. Presentations are not typically scheduled during the field season due to the day to day unpredictability of the work.

### **January:**

Montana Tech Public Lecture Series in Butte. Presentation. January 15. Students and public.  
Montana Outdoor Legacy Foundation in Columbia Falls. Meeting. January 20. Executive Director.

### **February:**

Natural Resources class, FVCC in Kalispell. Presentation. February 9. Students.  
North Fork Interlocal in West Glacier. Meeting. February 11. Agencies and public.  
Montana Chapter of the Wildlife Society in Helena. Presentation. February 27.

### **March:**

Testified on grizzly bear killings from Ferndale. Federal Courthouse in Missoula. March 10.  
BNSF Habitat Conservation Plan in Essex. Meeting. March 11. BNSF and agency.  
Plum Creek Timber Company in Columbia Falls. Presentation. March 13. Plum Creek employees.  
USFWS Bear Handling workshop in Bozeman. Training. March 16-18. Agencies.

**April:**

Plum Creek contractors in Kalispell. Presentation. April 17. Plum Creek employees and contractors.

**May:**

NCDE Subcommittee in Hungry Horse. Meeting. May 6. Agencies & Public.

Population Trend Monitoring Program in Kalispell. Meeting. May 7. Agency.

Bear Safety in Hungry Horse. Training. May 11. USFS employees.

Aversive Conditioning in Canmore, Alberta. Presentation. May 12. Agencies.

Wildlife Services Nonlethal Workshop in Polson. Presentation. May 21. Agencies and public.

**June:**

USFS Orientation in Hungry Horse. Presentation. June 3. USFS employees.

USFS Orientation in Eureka. Presentation. June 8. USFS employees.

Glacier Park Bear 1 in West Glacier and St. Mary. Presentations. June 8-9. GNP employees.

Glacier Park Bear 3 in West Glacier. Training. June 12. GNP Rangers and Bear Team.

Interagency Grizzly Bear Committee in Many Glacier. Presentation. June 16. Agencies and public.

Bear Fair in Condon. Presentation. June 20. Agencies and public.

Glacier Park emergency bear response. Meeting. June 29. Agencies.

**July:**

German film crew. July 8.

MTOLF Grizzly Rendevous Fundraiser in Bigfork. Presentation. July 10. Public.

North Fork Interlocal meeting in Whale Creek Community Center. Presentation. July 15. Agency and public.

**August:**

BNSF Executive VIP Train Trip in Essex. Presentation. August 9. BNSF and corporate VIPs.

Lecture Series at Flathead Valley Community College in Kalispell. Presentation. August 27. Public.

**September:**

Day in field with Chairman of the Board for National Wildlife Federation. September 19.

**October:**

Day in field with Yukon Carnivore Biologist. October 19.

Day in field with Glacier High School biology student. October 24.

**November:**

Swan Valley Bear Resources in Condon. Meeting. November 4. Agencies and public.

**December:**

NCDE Subcommittee in Hungry Horse. Meeting. December 2. Agencies & public.

Grizzly bear collaboration in Kalispell. Meeting. December 3. Agencies.

## **Prevention**

**Electric Fencing:** Prevention was again a major focus of the 2015 field effort. A majority of our effort involved protecting chickens and fruit trees with electric fencing. We assisted with the installation of 11 temporary and permanent electric fencing projects throughout the area.

Most of the electric fencing projects were around chicken coops and fruit trees. When constructed properly and maintained, electric fences are very effective in keeping bears from gaining access to attractants. Additional electric fencing projects are planned for 2016.



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

In 2015 the bear fair was again held in the Swan Valley. The bear fair was hosted by the MPG Ranch and organized by Swan Valley Bear Resources. Agency personnel from Montana Fish, Wildlife & Parks and the U.S. Forest Service set up booths and gave presentations. Private NGO's and company vendors also put up displays and gave presentations on electric fencing, bear resistant containers, and the use of bear spray. Over 150 residents and tourists attended the event.



In 2016, a Bear Fair is planned for the Ferndale community on June 4.



**Bear Resistant Containers:** A new program that we initiated in 2004 was the purchase of bear-resistant roll out garbage containers from Unbearable Bins. The purpose was to be able to loan bins out to residents that needed them on a short-term basis because a bear was attempting to access their garbage or other attractant. The containers passed the bear testing protocol that was jointly developed by Patti Sowka and the Living With Wildlife Foundation (LWWF.org). The testing protocol was presented and approved by the Interagency Grizzly

Bear Committee in December 2003. The loaner program was successful early on and because of that success, Defenders of Wildlife purchased another 10 Unbearable Bins to add to our loaner program. We have found that once residents see the effectiveness and value of the bins, that they would purchase bear-resistant containers for themselves. It is hard to believe it has been 11 years since we started the loaner program.

In late 2015, a company called [Kodiak Products](#), came out with a new automated 95 gallon bear resistant roll out refuse container. This container has been tested and passed at the GWDC. The unique feature of the container is that it unlocks automatically when the garbage truck lifts to dump it. The older containers required someone to unlatch the lids to empty it. We hope to take this container to several of the haulers in the area during 2016 to see if they like the product and if it works with their trucks.

**County Waste Transfer Sites:**

We continued coordinating and working with several counties on bear-proofing some of their transfer sites. The green box site at Coram, operated by Flathead County, completed the fencing around their new site. It consists of a chain link fence and an electric fence on the outside. It was completed the spring of 2003 and since completion; we have not had any bears access the site.

Over the past 12 years, Flathead County has continued to consolidate and bear proof their waste transfer sites. In Flathead

County, the sites at Coram, Ashley Lake, Olney, Pinnacle/Essex, and Bigfork are now fenced with chain link and electric fencing. Due to the success of bear-proofing these waste transfer sites in Flathead County, other counties have started to follow suit.



Lincoln County recently bear-proofed the Glen Lake and Trego transfer sites. Both of those locations had a big problem with black bears and grizzly bears getting into the unsecured garbage dumpsters. Since those sites have been fenced, there have not been any issues with bear accessing the garbage.

Lake County maintains two waste transfer stations in this area. The Porcupine site is south of the community of Swan Lake. We helped design, build, and install an automated lid system for the 40 cubic yard dumpsters that Lake County uses. The Porcupine site modification has been in place for at least 15 years and seems to be working quite well. The transfer site at Ferndale also had the site modified to automate the hydraulic lids on the 40 cubic yard dumpsters. Unfortunately, a leak developed in the underground hydraulic line, and Lake County has not made any effort to repair the leak. The site is still not bear resistant at this time.

The community of Condon in the Swan Valley has made a big effort to provide bear resistant garbage containers to both landowners and business owners. The Swan Ecosystem Center along with Northwest Connections and Swan Valley Bear Resources have put a lot of time and effort into educating landowners about the importance of keeping your garbage secure. It is always an ongoing educational effort that involves both new and long time residents of the Swan Valley, but they have been making a big difference.

The North Fork newsletter, written and distributed by local residents of the North Fork of the Flathead was first distributed in 2004. This newsletter summarizes bear activity in the North Fork and provides residents with information on preventing conflicts, identifying and securing attractants. This NFK Bear Newsletter is being modified for use in the Swan Valley and possibly the Middle Fork of the Flathead. The newsletter is mailed to every landowner in the North Fork Valley. The North Fork Newsletter and North Fork Landowners Association continue to provide information on grizzly bear activity in the North Fork.

Additional prevention efforts planned for 2016 include identifying and working with various organizations to provide bear-resistant dumpsters at commercial and residential sites where bear problems have been a major concern.



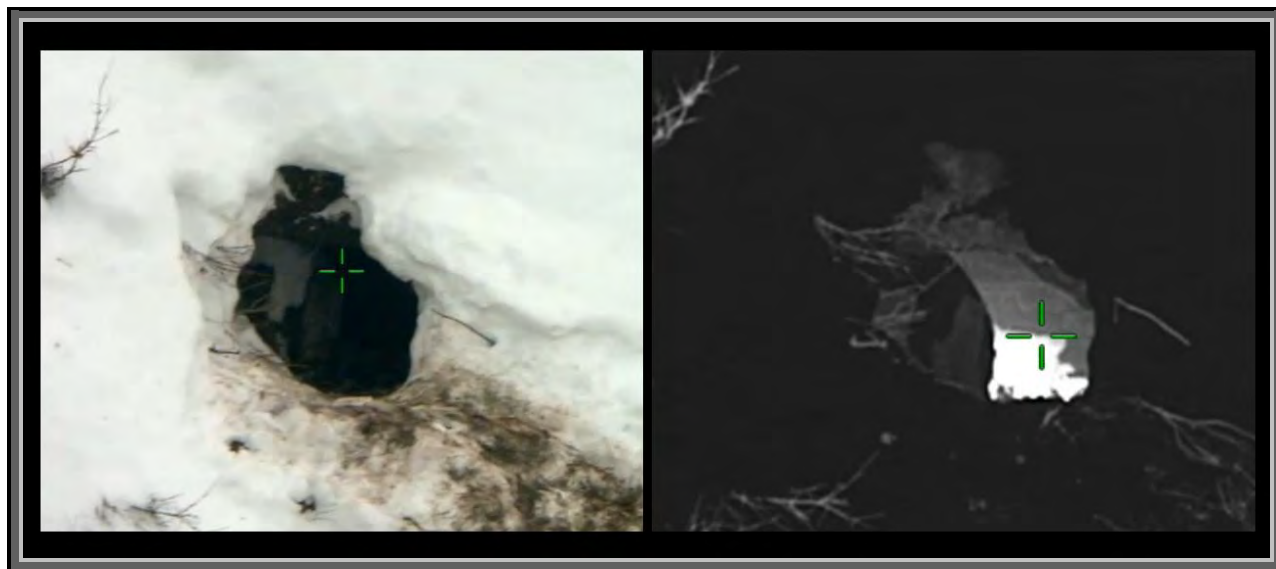
The preferred prevention method is education and working one on one with landowners. Helping landowners to understand why bears are attracted to their property and what they can do to secure attractants will be the most beneficial. We are already seeing results of this effort in the North Fork, Middle Fork, and Swan areas.

## **Use of Technology in Grizzly Bear Management**

Development of new technology such as an infrared imaging system, GPS radio collars, the Automated Bear Trap, DNA analysis, and digital remote cameras has improved our ability to monitor and manage grizzly bears that are involved in conflicts with humans.

### **Two Bear Air Rescue and Infrared Imaging System:**

During 2015, on occasion, we were able to use the services of Two Bear Air Rescue and their Bell 429 Helicopter with its Electro-optic/Infrared Imaging System. Basically, the imaging system was three gyro-stabilized digital cameras that had tremendous zoom capabilities and both daylight and infrared mode. This camera system allowed us to accurately locate grizzly bears, their dens, and to get counts of cubs. The infrared capability allowed us to see bears in dense brush and under the forest canopy. In one instance we could even see a grizzly bear and her cub inside their den (Figure 2).



**Figure 2. A Grizzly bear den in the Whitefish Range. On the left is the daylight image and on the right, the infrared image. You can see the head of the bear in the infrared image. Photo from Two Bear Air Rescue.**

### **GPS radio collars:**

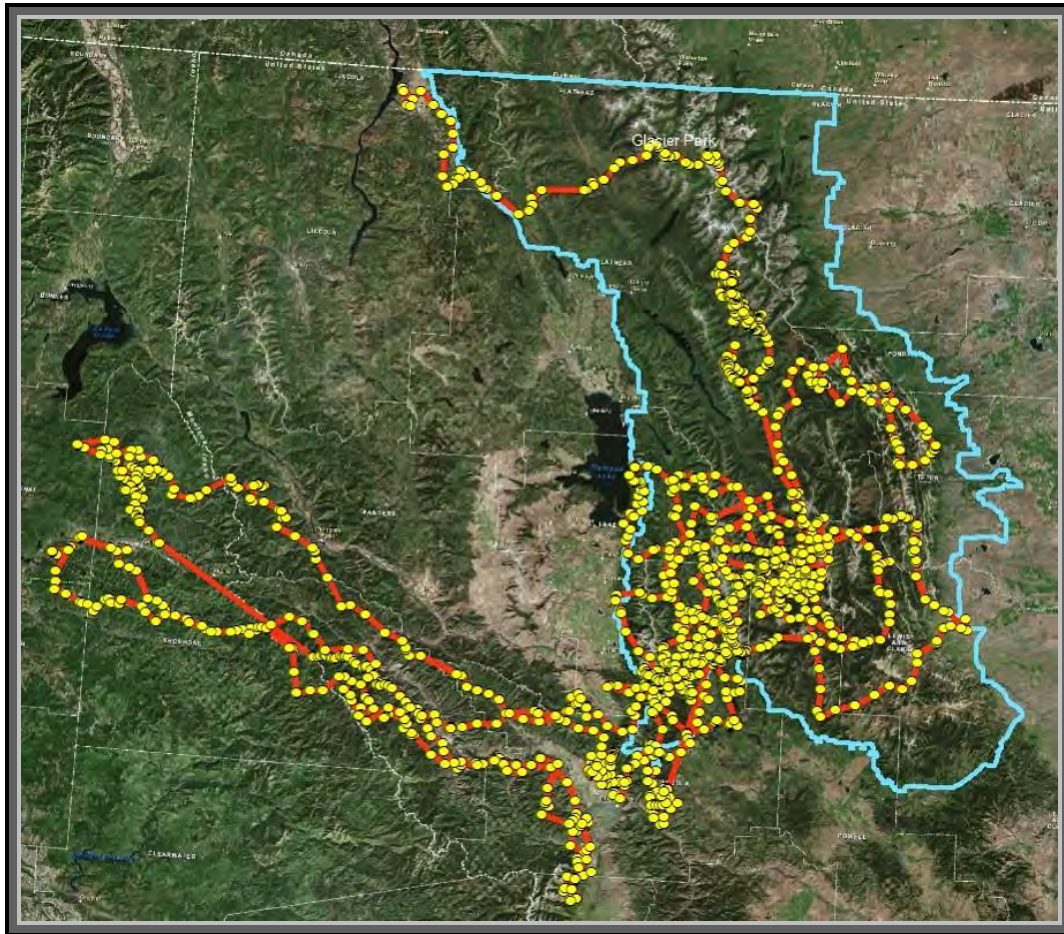
Traditional methods of monitoring grizzly bears consisted of a VHF radio collar. This type of collar required that we monitor a radio signal from the ground or the air. Trying to locate a collar from the ground can be very difficult due to remote locations and rugged terrain.

Advances in GPS technology have allowed us to monitor some grizzly bears that were fitted with GPS radio collars. The cost of GPS radio collars has come down in recent years. A few years ago, you could buy almost 10 VHF collars for the price of one GPS collar. Today, if you calculate the cost of the VHF collars and the need to fly and the few locations that you get, it is more cost effective and more informative to purchase the GPS collars.



In late 2015, due to a grant from BNSF through NFWF and MTOLF, we were able to purchase six [GPS/Iridium radio collars](#) that will allow us to monitor management bears almost in real time. We will also be able to delineate an area boundary, known as geofencing, and when the bear enters that area, the number of daily locations will increase and we will also be notified by email. For example, if we delineate the area around the community of Ferndale and have a GPS radio-collared bear that uses that area, we will know if that bear moves from the Swan Mountains down into the Ferndale community. This will let us know when the bear will be down around homes and the number of locations we get on a daily basis will increase. We will be able to better monitor that grizzly bears activity and may be able to identify areas where it is receiving food rewards.

The new Iridium GPS collars will be deployed in 2016 on both female and male grizzly bears that captured due to conflicts with humans.



**Radio locations from an ARGOS GPS collar placed on a management female grizzly bear captured and translocated. 3392 locations in Montana and Idaho during 2012-2014.**

### **Automated Bear Trap:**

The Automated Bear Trap (ABT) was invented, tested, and used regularly over the last 10 years. The ABT is the only bear trap that we know of that can be monitored through the Internet. When the door drops, we are notified by email and voicemail. We can then log on to a computer and look at the camera to see what is inside the trap. If it is a non-target animal like a skunk, we can remotely raise the door, release the skunk and reset the trap all through the computer. This trap has saved us a lot of time and money over the years. It does require yearly maintenance but it has held up well over the years. The trap was donated to MT FWP three years ago.

**DNA Analysis:**

Since 1996 we have collected hair samples from captured grizzly bears and submitted the samples for DNA analysis. This has contributed to the grizzly bear DNA database that has proven very useful for both research and management.

We have used DNA to determine which bear broke into cabins. This allowed us to rule out and release other grizzly bears that were captured in the same area. By using DNA to identify which bear was actually causing the conflict, it ensures that if a bear is removed from the population, that it is the bear that was actually responsible for the property damage.

The grizzly bear DNA database also provides us information on where an individual bear may have originally come from. We are also interested in knowing the family relationships between bears. Whether a bear we capture during a management action is the offspring of or somehow related to other bears that are causing conflicts.

**Digital Remote Cameras:**

We have been using remote cameras to monitor grizzly bears since 1993. These cameras are an invaluable tool in our grizzly bear management program. We are able to monitor conflict sites to determine species, sex, and whether a single or multiple bears were involved. We use the cameras at bait and trap sites to determine what bears are visiting the sites. This has allowed us to reduce the non-target captures of black bears and adult males. This is very useful for augmentation trapping where we are trying to capture subadult grizzly bears.

The remote cameras also provide informative videos that demonstrate how bears manage to “beat the traps” and not get captured. We have also watched how cubs learn to test buildings and find food attractants around homes.

We have also used the cameras to document how effective or ineffective different bear deterrents might be. We have obtained footage of bears testing electric fences, critter gitters, and bear resistant garbage containers.

In late 2015, we ordered additional remote cameras from money that was the result of a BNSF grant that went through the National Fish and Wildlife Foundation and the Montana Legacy Foundation. The additional cameras will allow us to monitor additional conflict, bait, and trap sites during 2016.



**Female grizzly and two cubs checking out a shed (Remote camera photo).**

## Grizzly Bear Management Captures (1993-2015)

Since 1993, 217 individual grizzly bears have been captured 381 times in management actions within Region 1. The number of new grizzly bears captured ranged from 1 in 1994 to 23 in 2004. The years 1998, 1999, 2004, 2011, and 2012 had a large number of grizzly bear captures because of the poor huckleberry crop the falls of 1998, 2004, and 2011 (Table 2).

**Table 2. Grizzly bears captured in management actions within the NCDE portion of Region 1. 1993-2015.**

<b>Year</b>	<b># Captures</b>	<b># Ind. Bears</b>	<b># New Bears</b>
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	42	31	23
2005	8	8	6
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
<b>R-1 Management Total</b>	<b>381</b> (mean = 16.6)		<b>217</b> (mean = 9.4)

## Management Grizzly Bear Mortality (1993-2015)

Of the 217 individual management grizzly bears captured in Region 1 since 1993, 103 (47%) are known to have died or have been sent to zoos (Table 3). The majority of the removals (56%) have been through management actions. 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 are 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. Three of the female management removals were 2 orphaned cubs and an orphaned yearling.



**Table 3. Cause-specific and class-specific mortality records for 103 grizzly bears. Numbers represent known mortality of marked grizzly bears captured in management actions in Region 1. 1993-2015.**

Class	Cause of Mortality								Total (%)
	Natural	Mistaken id	Self Defense	Management removal	Malicious	Handling	Vehicle/ Train	Unknown	
<b>Adult</b>									
M	0	0	1	13	1	0	1	3	19 (18)
F	0	2	3	7	1	0	1	0	14 (14)
<b>Subadult</b>									
M	0	0	0	14	9	0	4	4	31 (30)
F	1	1	1	6	3	0	2	0	14 (14)
Cub	4	0	0	16	0	1	2	0	23 (22)
Yearling	0	0	0	2	0	0	0	0	2 (2)
<b>Total (%)</b>	5 (5)	3 (3)	5 (5)	58 (56)	14 (14)	1 (1)	10 (10)	7 (7)	103

### **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 14 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. To date, 8 of the 14 augmentation bears were known to have remained in the Cabinet Mountains until their radio collars fell off. Two female grizzly bears were killed after being released in 2008. Two females and a male released in 2009 and 2010 returned to the NCDE. A subadult male in 2015 ended up in Idaho and was illegally killed by a black bear hunter.

In order to be part of the augmentation program, only grizzly bears with no known management or conflict history can be translocated. During the first four years of the program, only five female grizzly bears were translocated. In 2010 and 2011, both a female and male grizzly bear were moved each year. One male was moved during 2012, another male in 2013 and in 2015.

During 2015, we captured a two-year-old male grizzly bear in the Whitefish Range and released him at the West Cabinet release site. After he was released, several large wildfires burned in the West Cabinets. The grizzly eventually moved southwest into Idaho. He was eventually illegally killed by a black bear hunter.

Plans for 2016 are to continue the trapping, capture, and translocation of 1-2 grizzly bears to the Cabinet Mountains for the augmentation program.