



Bear conflict at residence



Lion conflict at residence

Northwest Montana – FWP Region 1

Black Bear & Lion Conflict Management

2019

Erik Wenum
Bear & Lion Specialist
&
Chad White
Bear Technician

Montana Fish, Wildlife & Parks Region 1

Project 5152

This report summarizes the level of bear management and lion management actions taken during the 2019 field season

Black Bear and Lion Management in Region 1

Northwest Montana is prime bear and lion habitat with the highest population densities in the state. The black bear population in the Swan Valley averages 22.7 bears per 100 square kilometers compared to 12.8 bears per 100 square kilometers statewide (Mace and Chilton-Radant 2011). Lion densities are about 1 adult female per 50 square kilometers with an estimated population as high as 1500 (900-1500) in Region 1. Currently, some of the areas with the highest bear and lion densities are also areas with the highest human densities. The U.S. Census Bureau estimates the population for Flathead County was 106,134 with a growth rate of 1.93 percent during 2019. Therefore, addressing conflict situations with bears and lions have become increasingly important aspects of Fish Wildlife and Parks management programs.

This wildlife management program has been successful in northwest Montana. By providing information and education, such as presentations, brochures, and videos, and actively responding to conflicts we can maintain public tolerance for these valuable animals. This, in addition, helps target the root causes of most conflicts which are improperly stored foods, trash, and other attractants. Reducing the level of available attractants subsequently reduces the number of conflicts and, thus, reduces the need for management actions and removals, regardless of the predator involved.

There may still be animals that, through accident or intent, receive food rewards associated with people and, if applicable, a corrective strategy other than capturing and moving or destroying the offending animal(s) can be used. Non-lethal management alternatives such as electric fencing and predator resistant cages or containers can be used to correct current and future conflicts as well as prevent the lethal management of wildlife resources.

Programmatic Goals and Objectives

Goals:

Minimize bear/human and lion/human conflicts.

Objectives:

Prevent/minimize conflicts by identifying attractants.

Continue to promote proper food and other attractants storage on both public and private lands.

Continue Information & Education programs; educating people about bear and/or lion awareness, populations, behaviors and conflict reduction.

Continue to work with City, County, State and Federal and other public and private entities to reduce conflicts and enhance education.

Continue to respond to bear/human and lion/human conflicts

Wildlife Conflict Mitigation & Education Efforts

Information and education efforts are a primary concern in this program. Each phone call is an opportunity to convey information about bears and/or lions and living in bear/lion country without conflict. We put emphasis on attractant management and proper bear resistant storage methods including bear resistant trash cans and electric fencing.

Each year, in addition to the many phone calls we return, we also work toward increasing education efforts within the local school systems.

Additionally, we conduct numerous bear and lion education and outreach programs for various groups and organizations in the valley, including local Homeowner Associations, and the annual Family Forestry Expo. Our estimated audience in 2019 was approximately 850 people. When opportunity arises, we give live presentations for small groups, during which participants get a 'hands on' experience assisting biologists process a bear. This gives them an opportunity to develop both an appreciation for black bears, and an understanding of how to manage attractants at home. During 2019, we conducted 3 hands-on processings with the public.

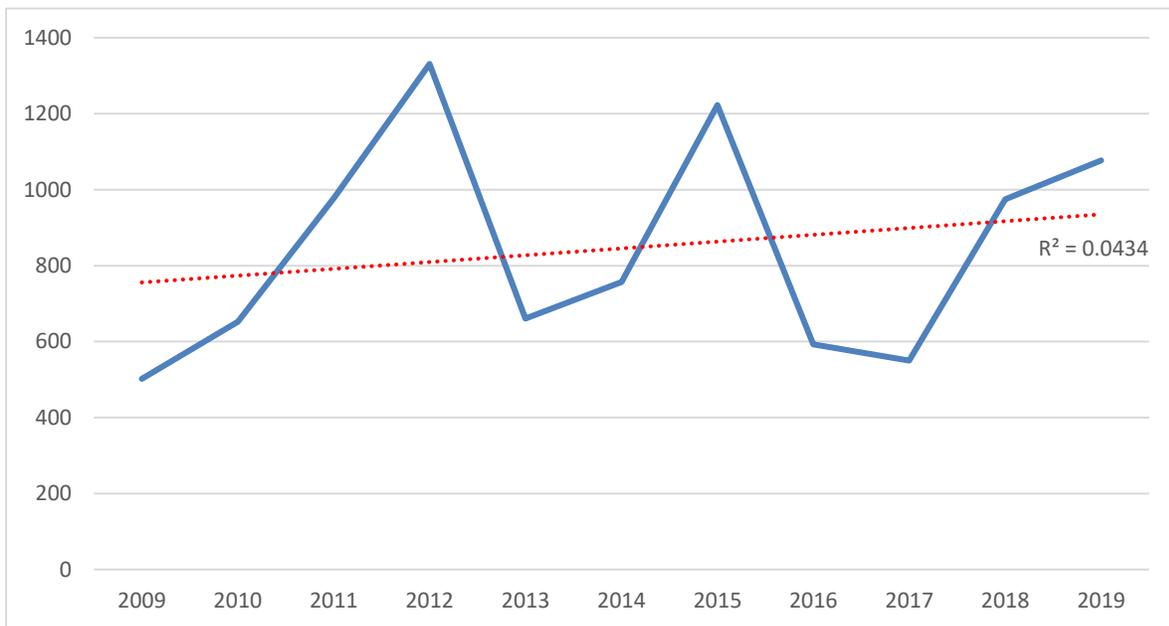
Black Bear Conflict Resolution

Calls vary greatly from year to year (Figure 1), factors such as green up and mast production can be the primary factors in influencing this yearly variation.



Bear at residence

Figure 1. Variation in total number of calls about bear conflicts received 2009-2019.



While there is an annual variation based on food resource production, there is an increasing trend through time that is best explained by the increasing human population, and subsequent attractants available.

The years 2009, 2013, 2014, 2016, and 2017 (Table 1.) were all highly productive food years resulting in lower conflict levels. Comparatively, 2018 and 2019 were poorer food years, but neither were of the scale of 2012 or 2015, which for different climatic reasons, were near total food failure years.

For reporting purposes, we have been using a moving average to compare annual call levels. The 2019 season produced 19 percent higher call volume (1077) than the 10-year average (822). Based on the growing population of people in the Flathead Valley, it is reasonable to expect that the trend of calls will increase to higher levels, especially during years of poor natural food production.

Table 1. Total calls, site visits, and captures by year (2009 - 2019).

Year	Number of Calls	# Of Site Visits	# Of Captures	# Of Other
2009	502	180	20	4
2010	652	235	46	5
2011	977	196	43	3
2012	1331	274	58	16
2013	661	99	32	5
2014	757	140	30	6
2015	1223	152	44	8
2016	593	74	19	7
2017	550	52	15	6
2018	975	95	22	4
2019	1077	103	30	8
10 yr Average (2009-2018)	822	150	33	6

The year 2019 started with a cool, wet (snowy) spring resulting in sparse and late production of succulent green vegetation. This resulted in higher than normal conflict numbers, particularly in May and June (Table 2). As green up caught up with time, conflicts leveled off through July, August and first part of September. However, as time passed, it became apparent that the season had changed from a cool wet spring to a hot dry summer. These hotter drier conditions resulted in poor mast crop production, primarily huckleberries. This is illustrated in the high levels of conflicts during September and October. This increase in conflicts continued later into November when, typically, most bears have begun to den, and even into December, as food limited bears searched for those last calories needed for a successful denning period.

Table 2. illustrates that calls are not evenly distributed throughout the year as calls surge May through November. In fact, over 93 percent (1004) of calls occurred over 214 days yielding an average of 4.7 calls per day, every day. September alone generated 261 calls for an average of 8.7 calls per day, every day.

Table 2. Total conflict calls, site visits, and captures by month, 2019.

2019	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
# Calls	2	0	11	51	166	238	116	42	261	142	39	9
# Site Visits	0	0	1	7	26	17	12	7	18	13	2	0
# Bear capture	0	0	1	4	5	8	3	1	8	0	0	0

Calls about bears are not limited to conflicts, but include requests for non-conflict related information such as bear hunting suggestions, program requests, and general information, i.e. “I was in the woods and I saw a bear.” Non-conflict calls are excluded from other graphs, tables, or narrative portion of this report but are summarized in Table 3. Not surprisingly, there is an increase in calls requesting information in the month prior to and during black bear hunting seasons.

There are also numerous calls concerning electric fencing for bears: cost share programs, design and construction specifications and construction assistance requests. During 2019, we erected 3 electric fence systems designed to protect 3 chicken coops.

Table 3. Calls (non-conflict) and related management activities by month for 2019.

Non-conflict calls	Total	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Calls about bears	68	0	0	0	4	11	4	9	10	24	6	0	0
Electric Fence Consultation or Construction	8	0	0	0	0	1	1	1	4	1	0	0	0

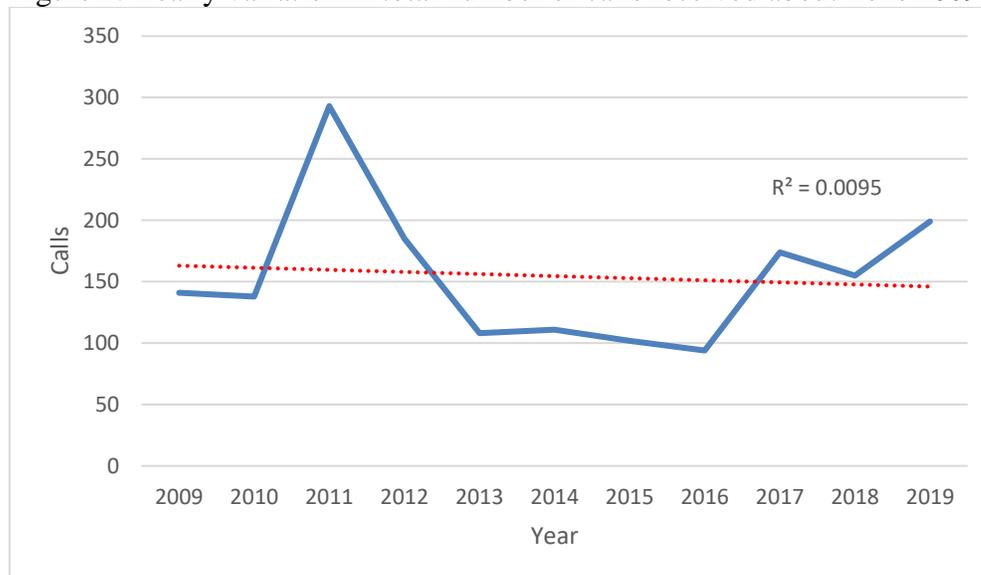
Lion Conflict and Safety Management



Lion livestock depredation

In northwest Montana, many areas with the highest densities of lions are also areas with expanding human population. This is related to the concentration of deer and elk in their winter and summer ranges at the edges of the valleys where a growing human population causes continued expansion of the urban interface. This subsequently causes subdivision of both agricultural lands and prime natural white-tailed deer winter range which puts people in proximity with deer and elk at times of the year when lions concentrate near the valley floors. With the influx of human inhabitants into ungulate and lion habitat, we can expect to see conflicts (see Appendix 1) between lions and humans to continue. (Figure 2).

Figure 2. Yearly variation in total number of calls received about lions 2009- 2019.



With the notable exception of 2011 (see Table 4), calls regarding lion conflicts have remained relatively stable, with a slight decrease through time. The decreasing trend is attributed to information and education programs, aggressively responding to public safety issues involving lions, and having liberal lion harvest structures in place for the Flathead Valley area (HD 170).

Table 4. Total lion calls, site visits, and removals by year (2009-2019).

Year	Number of Calls	# of Site Visits	Depredation Removals	Public Safety Removals	Total # Removed
2009	141	20	1	6	7
2010	138	24		5	5
2011	293	34	8	3	11
2012	185	23	3	5	8
2013	108	9	2	3	5
2014	111	7	3	3	6
2015	102	7			
2016	94	5		2	2
2017	174	11	2	2	4
2018	155	9		2	2
2019	199	19	1	2	3
10 yr Average (2009-2019)	125	12	1.6	2.6	4.2

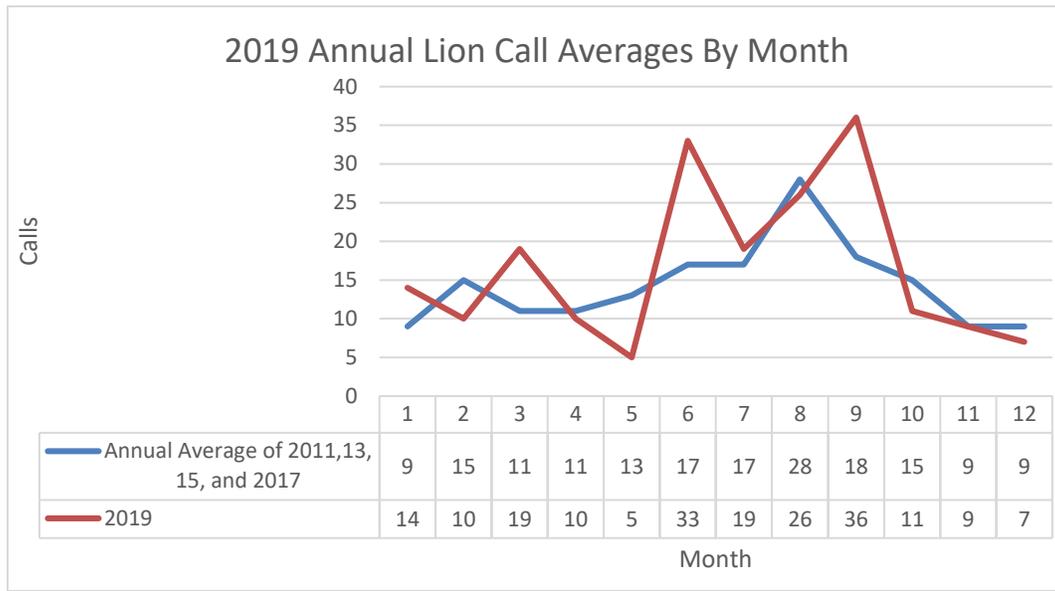
Although lion conflicts occur year-round, there is a period (typically July-September) that has a higher level of reported conflicts (Table 5).

Table 5. Total lion calls, site visits, and removals by month, 2019.

2019	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
# Calls	14	10	19	10	5	33	19	26	36	11	9	7
# Site Visits	1			1	2	3	2	3	3	4		
# Removed	1				1				1			

This year, a bi-modal peak in lion conflict calls is apparent in the months of June and September (Figure 3) while the year collectively is relatively consistent with the annual trend (Table 3).

Figure 3. 2019 compared by month to an average of 2011, 2013, 2015, and 2017.



The peak of deer and elk birthing occurs in the month of June typically following a migration away from the wintering range. The surge of calls in June suggests that birthing ungulates and, as a result, lions were in closer proximity to humans in June than is normally experienced. This is likely a result of winter’s persistence into spring. Heavy wet snow makes migrating toward calving grounds challenging and a gross lack of new vegetation gives reason for ungulates to stay on the winter range. The pulse of conflict calls in September is likely the result of juvenile lion dispersal where inexperienced youth are selecting for safer and more robust hunting opportunities typically found in proximity to humans.

The reproduction cycle typical of lions in northwest Montana results in juvenile dispersal occurs in 2 pulses, with the first being in February and March when the prey base (primarily white-tailed deer) are winter-stressed and congregated on winter range. This congregation increases the chance of hunting success for young lions with limited skills. The second pulse

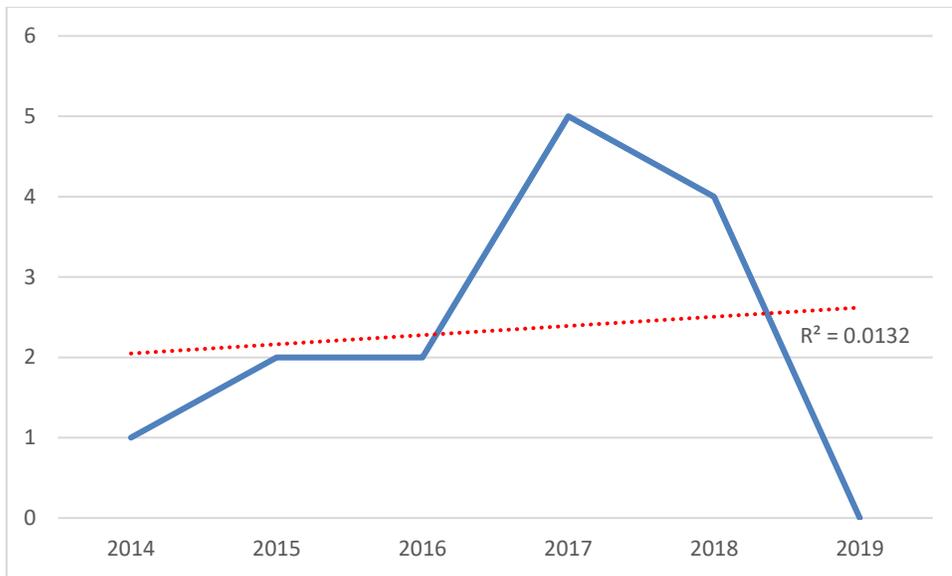
occurs in late July and into September when prey is robust and widely distributed which makes hunting for young lions more difficult.

This is further exacerbated by juveniles forced to lower elevation in effort to avoid strife with adult male lions. These factors can result in juvenile lions seeking out easier domestic prey putting them in conflict with humans. Nearly 70% of conflicts involve lions less than 2 years of age.

WHART (Wildlife Human Attack Response Team)

As the biologist on the Region 1 WHART, Erik responds to, and investigates, all ‘contact made’ incidents between humans and wildlife (primarily bears). Fortunately, during 2019 there were no human / wildlife incidents requiring a WHART investigation. Prior to 2019 there was an increasing trend of contact made incidents (Figure 4). Unfortunately, this trend is likely to return given the numbers of predators on the landscape, the elevated recreation in bear/lion/wolf habitat, and the influx of people living in the urban interface.

Figure 4. WHART investigations since 2013.



In preparation for these tragic occurrences, the WHART teaching team conducts training seminars throughout the state and across the country for any and all law enforcement, first responders or agencies that request the training. In 2019, the team conducted 3 2-day seminars for personnel from Teton, Fergus and Pondera counties and 1 4-day training seminar for FWP biologist and game wardens, other law enforcement officers from BIA, NPS, US Border Patrol and USFS.

Other Species

In addition to calls about bears and lions, we received and responded to 6 calls concerning other wildlife conflicts. These involved a wide range of species including, but not limited to, moose, deer, elk, bobcat, lynx and other wayward animals or animals presenting a potential threat to public safety.

Each year we will respond to calls regarding animals, particularly ungulates, with foreign objects attached to them in various fashions. These include such things as deer with rat traps stuck on their faces, ropes or five-gallon buckets wrapped around their necks, elk with wire wrapped in their antlers, moose entangled in volleyball nets and deer or turkeys impaled by arrows.

Future Needs

Budget

Operational costs continue to rise. There has been an increase in vehicle cost through time, resulting in a 33% increase since 2013, and chemical immobilant costs have increased 18.7% in the last 5 years and 12.5% since 2018 (Telazol).

The budget for project #5152 is not sufficient to absorb these types of increases, making it increasingly difficult to address the increasing level of conflicts in an adequate fashion.

Technician

With black bear populations remaining stable and at high densities (22.7 bears/100km²), and the grizzly bear population increasing, coupled with the human population in the Flathead Valley growing each year, the potential for bear / human conflicts also increases. This is particularly true during poor bear food production years.

To adequately address this increase with both a preemptive and on-going conflict resolution strategy, there is a substantial need for a funded, permanent 9-month technician position.

Conclusion

Northwest Montana's human population continues to grow annually, and this expansion of residential and recreational areas predominately occurs where bears and lions are most likely to come into conflict with humans. The area where the home ranges of humans, bears and lions overlap, known as the wild-land urban interface, continues to expand as a result.

This continues the need for wildlife managers to spread information and education about living with wildlife and to have the correct resources available to prevent, reduce, or remedy wildlife conflict situations.

We will continue to address bears displaying habituated behavior with the use of a trap-and-relocate or trap-and-adversely-condition program. The continued response to lion conflicts will reduce (though not eliminate) the potential public safety issues that exist anywhere there are lion populations. Our positive and close relationship with the USDA Wildlife Services trapper will be continued, resulting in effective responses to both urban and rural livestock depredation incidents.

We will strive to maintain the public tolerance for these highly valued wildlife species in western Montana by maintaining this effective wildlife conflict safety and education program.

APPENDIX 1

Lion Conflict Terms and Definitions

(From the new Western Association of Fish and Wildlife Agencies publication - MANAGING LIONS IN NORTH AMERICA, 2009)

Following are definitions of terms used by most WAFWA western state agencies:

Human-Lion Interaction Classes:

- Sighting – Reported observation of lion presence (usually visual)
- Encounter – An unexpected and direct neutral meeting between a human and a lion without incident.
- Incident – An interaction between a person and a lion in which a person must take action to cause the lion to flee, back down, or otherwise allow the person to leave without further conflict. An incident does not result in injury to a person.
- Attack – A human is injured or killed by a lion; or alternatively, a person is intentionally, aggressively approached and contacted by a lion, resulting in injury or death of the person.

Lion Conflict Behavior Classes:

- Nuisance – A lion involved in an encounter, multiple encounters, and/or involved in multiple sightings in residential areas or other areas of concentrated human activity, and/or a lion that has killed and cached prey, either domestic or wild, in proximity to humans.
- Depredating – A lion that injures or kills livestock.
- Aggressive or Dangerous – A lion exhibiting aggressive behavior towards humans; includes one that follows, stalks, or attacks a person without provocation. Or a lion that meets any of the following:
 - Lion that attacks a person.
 - Lion that exhibits aggressive behavior such as stalking a person, exhibits unnatural interest in a person, poses a probable threat of injury or death to humans.
 - A lion may be classified as dangerous by trained wildlife professionals based on its behavior and/or location (e.g., schools, bus stops, child care centers, playgrounds, residential areas, etc.).
 - A lion that frequently associates with humans, or human-related food sources, and especially if a pattern of behavior in which it appears to be focusing on humans or pets, or appears to be preying on pets with frequency in a well-defined geographic area (e.g. residential areas, resorts, campgrounds, or other areas of concentrated human activity).

References

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