

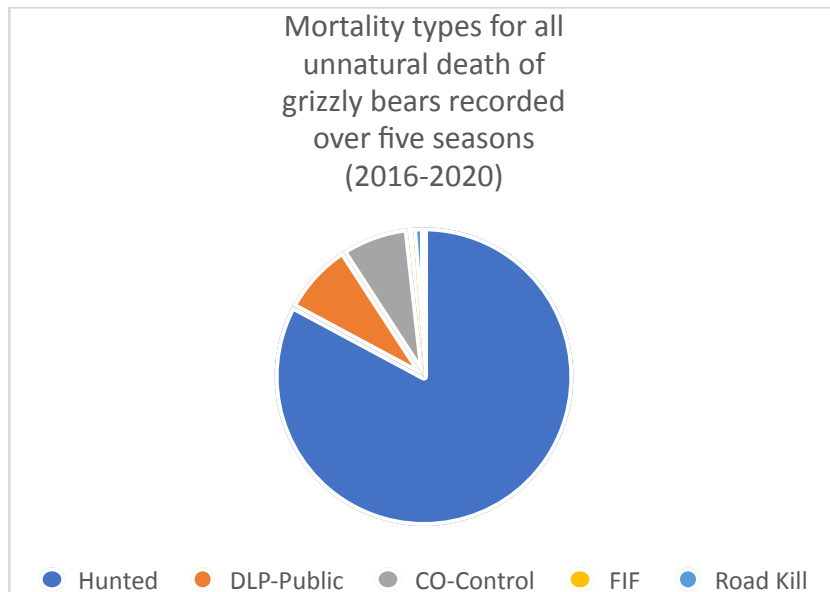
# Data analysis of Grizzly bear mortalities from 2016 to 2021 in Yukon

*Data obtained from the Yukon Government*

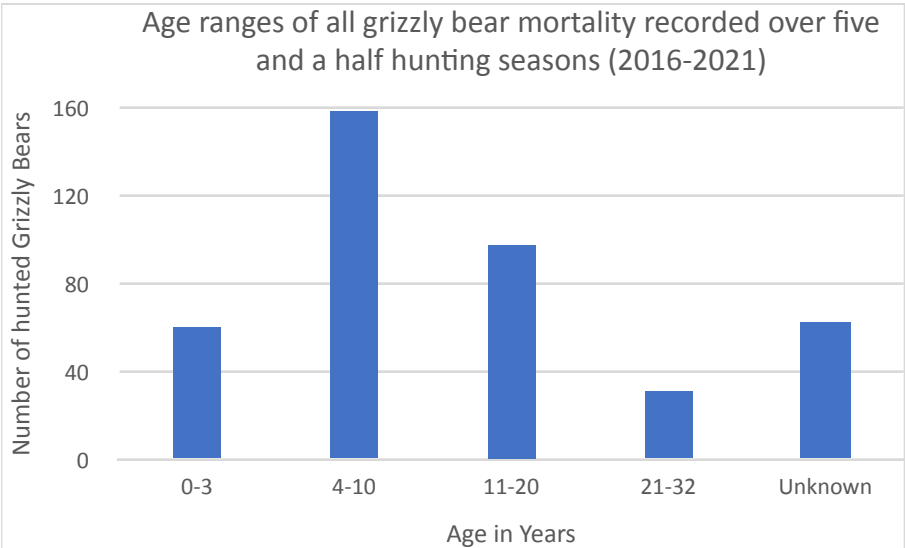
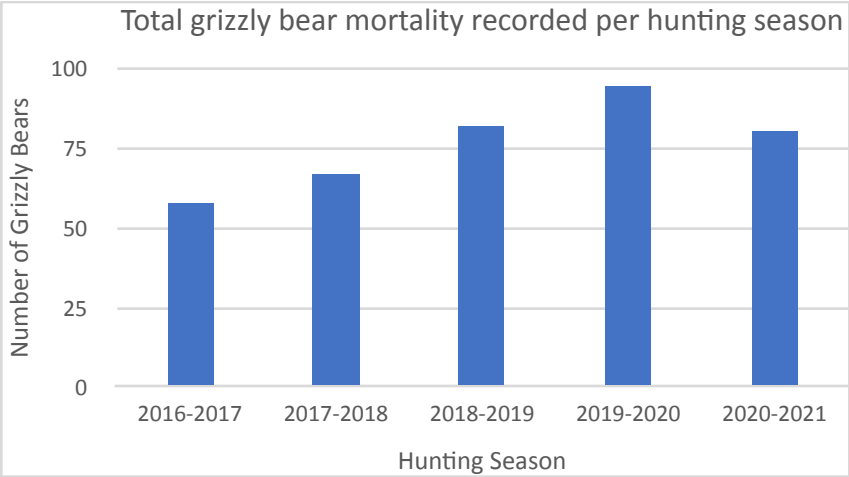
*We only have data from early 2021, not the whole season.*

## I. General information

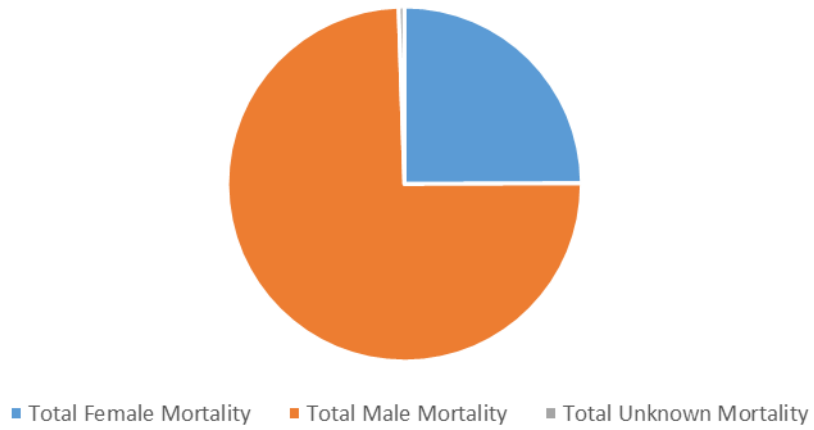
a. Unnatural deaths of grizzly bears classified in different types of mortalities:



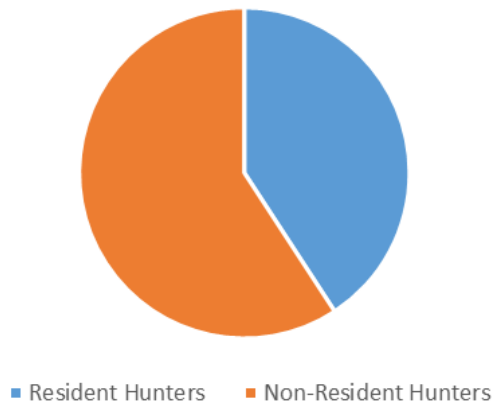
**b. Grizzly bear mortality due to hunting:**



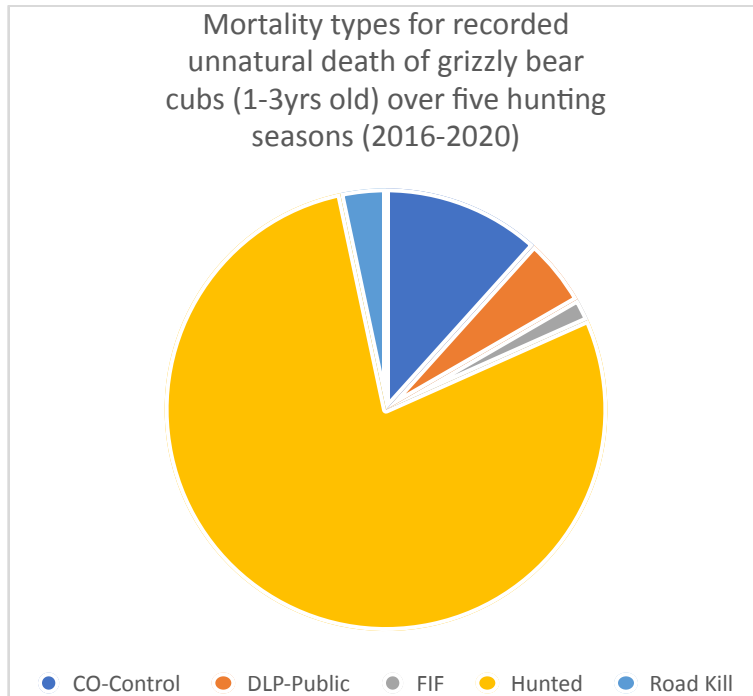
Total Female & Male Grizzly Bear Mortality for  
Five Hunting Seasons (2016-2020)



Grizzly Bear Mortality Estimates  
Composition of Hunter Type over Five Hunting Seasons  
(2016-2020)



**c. Grizzly bear cub mortality:**



**II. Detailed information regarding each type of mortality**

**a. Grizzly bear mortality due to CO (Conservation Officers) control:**

CO Control	Male	Female	Total
Cubs: 0-3 years old	5	2	7
Teenagers: 4-7 years old	0	0	0
Adults :8-20 years old	6	3	9
Elders: above 20 years old	5	0	5
Unknown	2	3	5
<b>Total</b>	<b>18</b>	<b>8</b>	<b>26</b>

Discrimination by sex:

- **69.2%** of Grizzly bears killed by COs are **males**.
- **30.8%** of Grizzly bears killed by COs are **females**.

Discrimination by age: (excluding the number of unknown bears)

- **66.6%** of Grizzly bears killed by COs are **sexually mature bears** (adults + elders).
- **33.4%** of Grizzly bears killed by COs are **cubs**, most of them are males. After adults, cubs represent the second largest group of grizzly bears killed by COs.
- Only elder males were killed by COs, which represents **23.8%** of the total COs control.

Hypothesis: From 2016 to 2021, male grizzly bears seem to have been more problematic than females.

Question: We are wondering why so many cubs are killed by COs?

Under 3 years of age, bears are still with their moms, so does this mean that these cubs are killed at the same time as their mothers are being killed?

Are these cubs really problematic, or could we send them to a rehabilitation center for bears where they could be taken care of until they are old enough to be released into the wild?

**b. Grizzly bear mortality due to DLP (Defense of Life and Property) kills:**

DLP	Male	Female	Total
Cubs: 0-3 years old	2	1	3
Teenagers: 4-7 years old	5	0	5
Adults :8-20 years old	3	5	8
Elders: above 20 years old	2	0	2
Unknown	6	2	8
Total	18	8	26

Discrimination by sex:

- **69.2%** of Grizzly bears DLP killed are **males**.
- **30.8%** of Grizzly bears DLP killed are **females**.

Discrimination by age: (excluding the number of unknown bears)

- **55.6%** of Grizzly bears DLP killed are **sexually mature bears** (adults + elders).
- **83.3%** of the **female Grizzly bears** killed due to DLP reasons are **sexually mature**.

Hypothesis: From 2016 to 2021, male grizzly bears seem to have been more problematic than females.

Question: The most problematic females being the sexually mature ones, could it be because they are protecting their cubs

**c. Grizzly bear mortality due to hunting:**

	Hunted	Female	Male	Total
	Cubs: 0-3 years old	10	15	25
	Teenagers: 4-7 years old	17	25	42
	Adults :8-20 years old	10	39	49
Residents	Elders: above 20 years old	1	6	7
	Unknown	4	8	12
	Total	42	93	135
	Cubs: 0-3 years old	3	19	22
	Teenagers: 4-7 years old	8	38	46
Non Residents	Adults :8-20 years old	23	73	96
	Elders: above 20 years old	1	16	17
	Unknown	5	10	15
	Total	40	156	196

Between 2016 and 2020, **331** Grizzly bears were **hunted**.

Discrimination by sex:

- **75.2%** of hunted bears were **males**.
- **24.8%** of hunted bears were **females**.

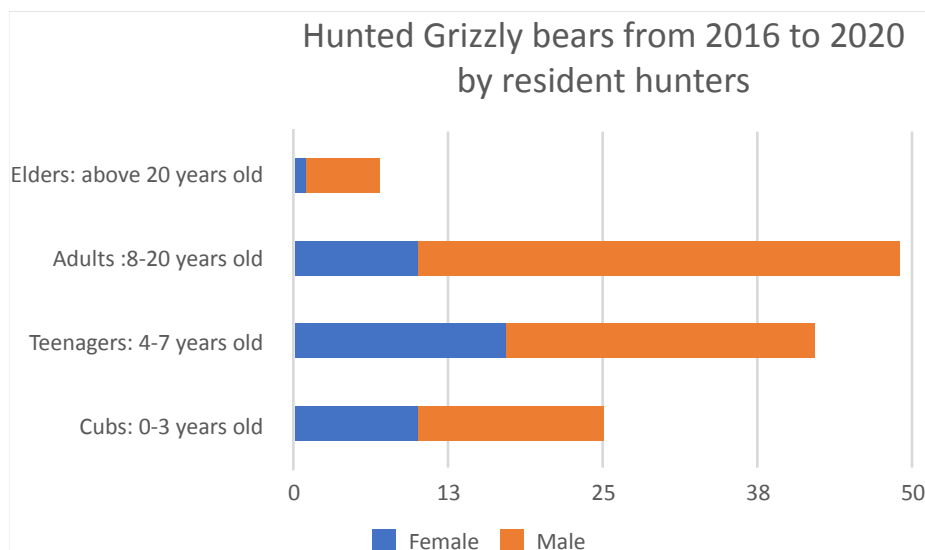
#### Discrimination by age:

- **14.2%** of hunted bears were **cubs**. (*Why hunting cubs?*)
- **26.6%** of hunted bears were **teenagers**.
- **43.8%** of hunted bears were **sexually mature** (adults and elders).
- **7.3%** of hunted bears were **over the age of 20 years old**. (*These bears should be the main target for trophy hunting*)
- **8.2%** of hunted bears had an **unknown age**.

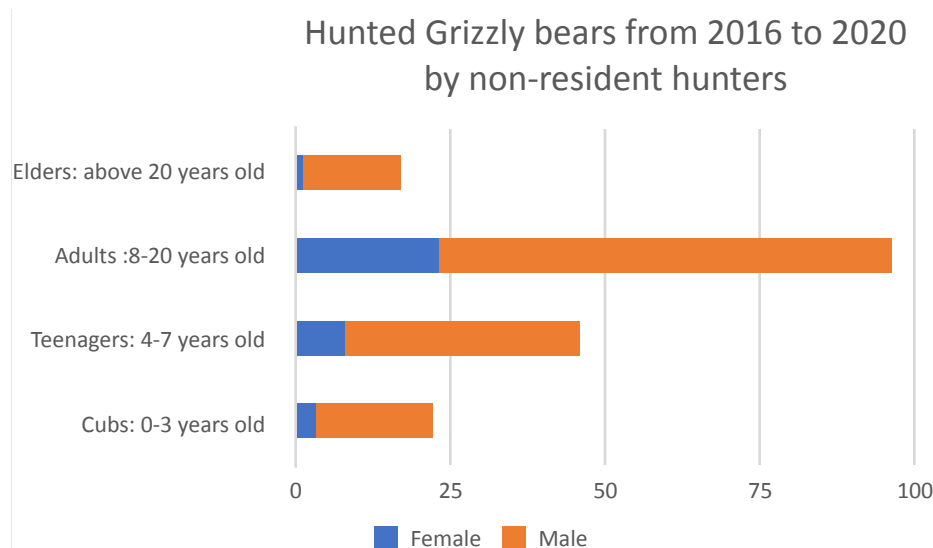
#### Discrimination by fertility: (excluding numbers of unknown bears)

- **52% of females** were hunted **before reaching sexual maturity**.
- **48% of sexually mature females** were hunted.
- **42% of males** were hunted **before reaching sexual maturity**.
- **58% of sexually mature males** were hunted.

#### Discrimination by residents versus non-residents:







- **59.2%** of hunted bears have been hunted by **non-resident hunters**.
- **40.8%** of hunted bears have been hunted by **resident hunters**.
- **Cubs and teenagers represent 49.6%** of bears hunted by **resident hunters** versus **34.7%** for **non-resident hunters**.
- **Within cubs and teenager bears, resident hunters kill 40.3% females** versus **16.2%** females killed by **non-resident hunters**.

Conclusions:

- Female grizzly bears have low chances to reach their sexual maturity. This is problematic for the survival of the species.
- More grizzly bears are killed by non-resident hunters than resident hunters.
- Non-resident hunters mainly hunt sexually mature bears (bigger bears) compared to resident hunters who also hunt a lot of non-sexually mature grizzly bears. It makes sense to hunt sexually mature bears, the older they get, the bigger they are (best for trophy).
- Too many cubs and teenager bears are hunted.

- Resident hunters kill a lot more non sexually mature female grizzly bears compared to non-resident hunters. It does not make sense to hunt a cub/young small bear as a trophy or for meat.

Questions:

- Why hunt cubs and teenager bears? Are they killed as DLP kill under a hunting tag? Are they hunted with their mothers?
- Why are bears over 20 years old (big bears) not the main target if the reason is for trophy?
- Why do so many sexually mature females still get killed? Hunting sexually mature female bears is detrimental for the survival of the species. Indeed, sexually mature females are either accompanied by cubs that they are raising or internally carry the future generation. It is rare for a female to take a year off between litters. And grizzly bears have the slowest reproduction rate of all mammals in North America.
- Why do resident hunters kill so many non sexually mature females (40.3%) compared to non-resident hunters (16.2%)?
- Why do half of the number of bears hunted by resident hunters represent non sexually mature bears? These bears are not big therefore not a main target for a trophy. Are they hunted for meat or as DLP kill under a hunting tag?

