

YELLOWSTONE GRIZZLIES

MAP THE MORTALITIES

Direct threats to the grizzly bears, *Ursus arctos horribilis* may be affecting the grizzly population in Yellowstone National Park. These threats may inhibit the growth of the grizzly population enabling the species to go extinct. In this project you will use the data in **Table 1** to plot bear mortalities and other important data on **Map 1**. Follow the directions closely. Answer all questions clearly and use data to support your answers.

Table 1 lists grizzly bear deaths from 1975-1987. Each line contains pertinent information for one bear.

Column A – bear's ID number
Column B – location of death
Column C – jurisdiction of each death
Column D – cause of death
Column E – coordinates of the death

Below is a list of abbreviations used in **Table 1**.

CTRL = Management Control – management Control deaths are carried out by state or federal agencies after a bear is determined to be a threat to human life or property. Such bears are those found guilty of killing livestock, humans, or frequenting areas used by humans.

ILGL = Illegal Killing – Illegal mortalities include any bear deaths attributed to poachers, vandals, unknown causes where humans are suspected, or when individuals took it into their own hands to kill a nuisance bear without notifying authorities.

LGL = Legal Killing – Legal killing of bears occurs only in the defense of life.

NATL = Natural Causes – Natural causes include starvation, old age, malnutrition, abandonment and natural accidents (fire, falls, etc.).

RDKL = Road kill – this includes bears who died as a result of being struck by a vehicle.

TRAP = Trapping Casualty – these deaths include bears that died as a result of drug overdoses and body damage while being trapped or moved.

OTHR = Other – Includes deaths where cause of death could not be determined.

BTNF = Bridger Teton National Forest

GNF = Gallatin National Forest

SNF = Shoshone National Forest

YNP = Yellowstone National Park

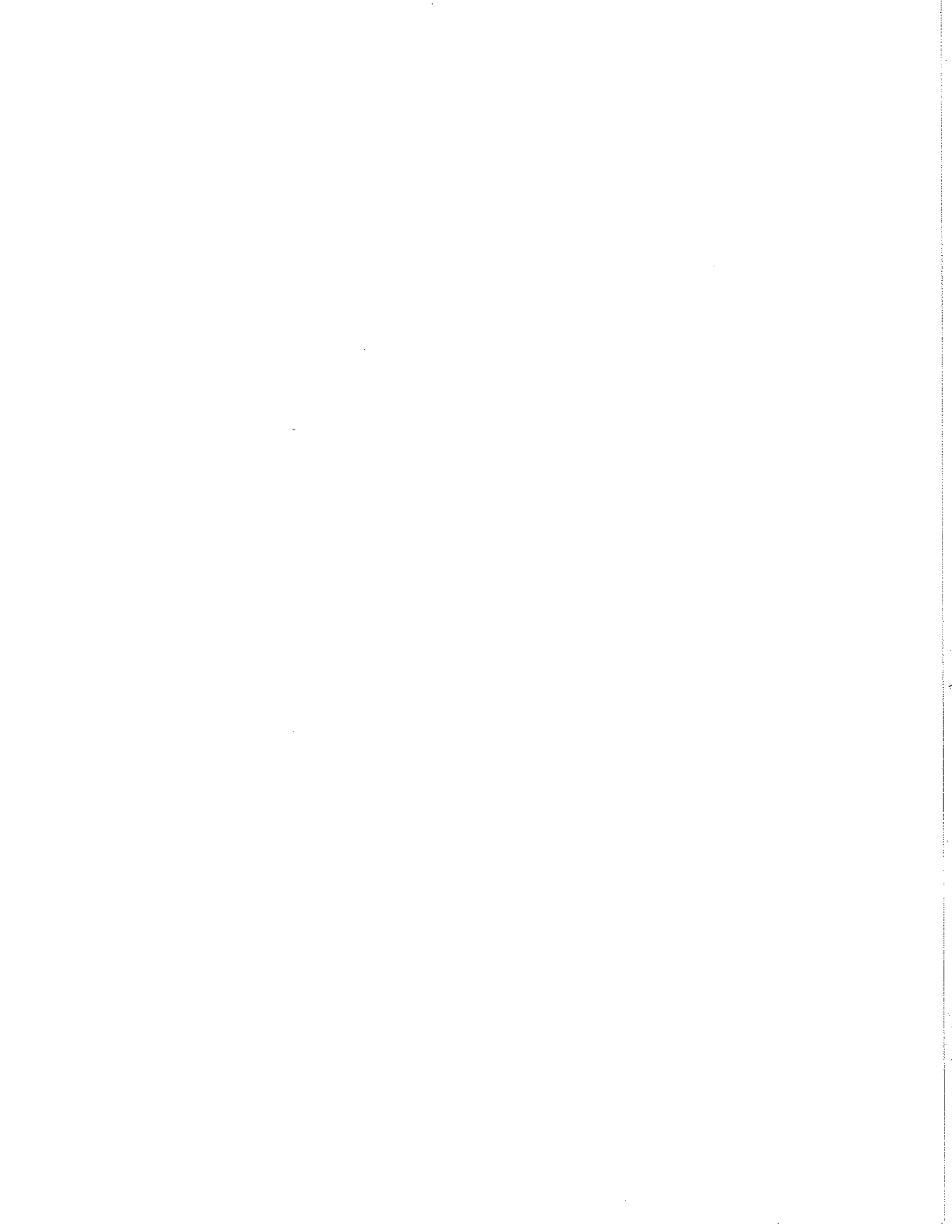
CNF = Custer National Forest

TNF = Targhee National Forest

GTNP = Grand Teton National Park

Table 1. Grizzly bear mortalities in the greater Yellowstone Ecosystem, 1975-1987

	A	B	C	D	E
1	Bear #	Descriptive Location	Location Jurisdiction	Mortality Cause	Mortality Location
2					
3					
4	75-1	Squirrel Meadows	TNF	CTRL	J-16
5	75-2	Squirrel Meadows	TNF	CTRL	J-16
6	76-4	Lake	YNP	CTRL	N-12
7	77-13	Cinnabar	Private -MT	CTRL	K-7
8	78-1	Old faithful	YNP	CTRL	K-12
9	78-5	Bay Bridge	YNP	CTRL	M-12
10	79-10	Cinnabar Mountain	Private -MT	CTRL	K-7
11	80-3	Lewis Lake	YNP	CTRL	M-14
12	82-7	Tom Miner Basin	GNF	CTRL	J-7
13	82-8	Canyon	YNP	CTRL	N-10
14	82-9	Cooke City	GNF	CTRL	R-8
15	82-10	Cooke City	GNF	CTRL	R-8
16	82-15	Lake	YNP	CTRL	N-12
17	83-1	Gardiner Dump	GNF	CTRL	L-7
18	83-3	Rainbow Campground	GNF	CTRL	I-10
19	83-4	Madison Campground	YNP	CTRL	K-11
20	83-5	West Yellowstone	GNF	CTRL	I-11
21	84-3	Indian Creek	YNP	CTRL	L-9
22	84-4	Fishing Bridge	YNP	CTRL	N-12
23	84-10	Lake	YNP	CTRL	N-12
24	85-10	Silver Gate	GNF	CTRL	R-8
25	85-12	Watkins Creek	GNF	CTRL	H-10
26	86-2	Gravelly Mountains	GNF	CTRL	G-9
27	86-9	Canyon	YNP	CTRL	N-10
28	86-10	Lake	YNP	CTRL	N-12
29	87-1	West	Private -MT	CTRL	I-11
30	87-2	Canyon	YNP	CTRL	N-10
31					
32	75-3	Teepee Creek	GNF	ILGL	I-10
33	76-3	Cooke City Dump	GNF	ILGL	R-8
34	76-5	Huckleberry Flats	RMP	ILGL	L-16
35	76-6	Portal Creek	GNF	ILGL	I-5
36	76-7	Boone Creek	TNF	ILGL	I-16
37	77-3	Little Sulphur Creek	SNF	ILGL	S-11
38	77-7	Republic Creek	SNF	ILGL	R-8
39	77-9	Mormon Creek	SNF	ILGL	R-13
40	77-16	Canyon Creek	TNF	ILGL	H-11
41	77-17	Crandall Creek	SNF	ILGL	S-10
42	77-19	Island Park	TNF	ILGL	I-13
43	78-3	Squirrel Meadows	TNF	ILGL	J-16
44	78-6	Cooke City Dump	GNF	ILGL	R-8
45	78-7	Indian Lake	TNF	ILGL	J-16
46	78-9	Cooke City Dump	GNF	ILGL	R-8
47	79-1	Palisades, Mount Baldy	CNF	ILGL	K-23
48	79-2	North of Hominy Peak	TNF	ILGL	K-17
49	79-4	Butte Creek	BTNF	ILGL	R-16
50	79-5	Conant Pass	GTNP-TNF	ILGL	K-17
51	79-8	Butte Creek	BTNF	ILGL	R-16
52	79-9	Butte Creek	BTNF	ILGL	R-16
53	80-5	Open Creek	SNF	ILGL	Q-16
54	80-6	Tucker	GNF	ILGL	P-7



55	80-7	Thorofare / Open Creek	BTNF	ILGL	Q-16
56	81-4	Centennial Mountains	TNF	ILGL	F-12
57	81-6	Sentinel Creek	GNF	ILGL	H-8
58	81-7	Cooke City	GNF	ILGL	R-8
59	81-9	Thorofare	BTNF	ILGL	Q-16
60	91-10	Camp monoco	SNF	ILGL	R-11
61	91-11	Gardiner area	GNF	ILGL	L-7
62	81-12	Thorofare-hawk's Rest	BTNF	ILGL	Q-16
63	81-15	Thorofare	BTNF	ILGL	Q-16
64	81-16	Thorofare	BTNF	ILGL	Q-16
65	82-14	Moss lake	BTNF	ILGL	O-17
66	82-16	Lava Creek	BTNF	ILGL	N-17
67	82-2	North Fork Kitty Creek	SNF	ILGL	R-13
68	82-3	Sunlight Creek	SNF	ILGL	S-11
69	82-4	Sunlight Creek	SNF	ILGL	S-11
70	82-5	North Fork itty Creek	SNF	ILGL	R-13
71	84-8	West Yellowstone	GNF	ILGL	I-11
72	84-9	Willow Crk/Centennial Mtn	TNF	ILGL	F-12
73	84-11	Black Mountain	TNF	ILGL	I-13
74	85-1	Granite Creek	BTNF	ILGL	N-23
75	85-11	Thorofare- Open Creek	BTNF	ILGL	Q-16
76	85-13	West of Pilgrim Creek	BTNF	ILGL	M-17
77	86-6	Wolverine Creek	GNF	ILGL	P-7
78	86-11	Beartooth Mountains	SNF	ILGL	Q-13
79	87-3	E. Fork Pilgrim Creek	BTNF	ILGL	N-17
80					
81	77-10	Island Park	Private-ID	LGL	I-13
82	77-11	Island Park	Private-ID	LGL	I-13
83	77-14	Phelps Pass	BTNF	LGL	Q-16
84	81-5	Eagle Creek	GNF	LGL	L-7
85	82-13	Cave Falls	TNF	LGL	J-16
86	84-7	Fish Hawk Creek	SNF	LGL	Q-14
87	86-3	Big Bear Creek	Private -MT	LGL	I-3
88	86-4	Big Bear Creek	Private -MT	LGL	I-3
89	86-5	Big Bear Creek	Private -MT	LGL	I-3
90	86-7	Taylor's Fork	GNF	LGL	H-7
91					
92	76-2	Daley Creek	YNP	NATL	I-7
93	77-1	Pelican Valley	YNP	NATL	O-11
94	80-2	Flat Mountain Arm	YNP	NATL	M-14
95	80-4	Fir Ridge	YNP	NATL	J-10
96	80-9	Gneiss Creek	YNP	NATL	J-10
97	80-10	Gneiss Creek	YNP	NATL	J-10
98	81-2	Flat Mountain Arm	YNP	NATL	M-14
99	81-3	Yellowstone Lake	YNP	NATL	N-12
100	82-1	North Crandall Creek	SNF	NATL	S-9
101	82-6	Mount Washburn	YNP	NATL	N-10
102	82-11	Lamar River	YNP	NATL	Q-10
103	84-1	Frank Island	YNP	NATL	N-13
104	85-2	Antelope Creek	YNP	NATL	O-10
105	85-3	Antelope Creek	YNP	NATL	O-10
106	85-4	Sheep Mesa	SNF	NATL	S-13
107	85-5	Sheep Mesa	SNF	NATL	S-13
108	85-6	Fawn Pass	YNP	NATL	K-8
109	85-7	Fawn Pass	YNP	NATL	K-8
110	85-8	Yellowstone Lake, S. arm	YNP	NATL	N-14



111	86-1	Lehardy Rapids	YNP	NATL	N-12
112	86-8	Pelican Valley	YNP	NATL	O-11
113					
114	77-12	West Yellowstone	GNF	OTHR	I-11
115	77-15	Greybull Rvr, Stuart Crk	SNF	OTHR	U-17
116	77-18	Artist Point	YNP	OTHR	N-10
117	81-13	Burnt Creek	GNF	OTHR	C-5
118	83-7	Timothy Creek	GNF	OTHR	N-7
119	84-2	Crandall	SNF	OTHR	S-9
120					
121	77-4	Divide Lake	YNP	RDKL	J-9
122	77-5	Divide Lake	YNP	RDKL	J-9
123	78-2	Red Giant Springs	GNF	RDKL	I-10
124	80-8	Grayling Creek	GNF	RDKL	J-10
125	85-9	Norris	YNP	RDKL	L-10
126					
127	76-2	Dog Creek	TNF	TRAP	J-16
128	77-6	Bridge Bay	YNP	TRAP	M-12
129	79-3	Barlow Peak	YNP	TRAP	O-15
130	80-1	Nez Perce Creek	YNP	TRAP	K-12
131	83-2	Gardiner Dump	GNF	TRAP	L-7
132	82-12	Head of Gardner River	YNP	TRAP	Q-10
133	82-17	Sunlight Creek	SNF	TRAP	S-11
134	83-6	West Yellowstone	GNF	TRAP	I-11
135	84-5	Two Top—Jesse Creek	TNF	TRAP	H-11
136	84-6	West Yellowstone	GNF	TRAP	I-11



Problem 1.

How many bears died from each of the causes shown in **Table 1**?

- | | |
|--------------------------|-----------------|
| _____ Management Control | _____ Illegal |
| _____ Natural | _____ Legal |
| _____ Other | _____ Road Kill |
| _____ Trapping casualty | |

How Many bears died of Natural cases between 1975 and 1987? _____

How many bears died as a result of human actions? _____

What is the leading cause of deaths among grizzly bears? _____

Problem 2.

Using the information in **Table 1**, plot the locations of grizzly bear deaths on **Map 1**. Put one mark in the appropriate square on the map for each bear listed in **Table 1**. Color code the different causes of death and make a key showing what each color represents. Use small dots, some squares will end up with more than one dot.

Problem 3.

Look on your map for **Mortality Clusters**. A mortality cluster is an area on the map which contains six or more grizzly deaths in any two adjacent squares. Circle your mortality clusters with a regular pencil.

Problem 4.

Using a different color of pencil than you used to plot bear mortalities, circle the following location on your map. Each of these locations represents a town or developed recreational area near Yellowstone National Park. Then identify the main cause or causes of bear death in near location and fill in the chart below.

Key places	Main use	Location	Principle Cause of Death
Gardiner Montana	Town site	L-7	
Cooke City Montana	Town site	R-8	
West Yellowstone Montana	Town site	I-11	
Yellowstone lake	Recreation site	N-12	
Yellowstone canyon	Recreation site	N-10	
The thoroughfare	Popular hunting sites	Q-16 & R-16	
Squirrel Meadows	Sheep Grazing	J-16	

Problem 5

What is the main cause of death for the mortality clusters inside Yellowstone National Park?

What is the main cause of death for the mortality clusters outside Yellowstone National Park?

Problem 6

If there are still plenty of grizzly bears in Alaska and Canada, why should we be concerned if grizzlies disappear from the Greater Yellowstone Ecosystem? Give at least three (3) reasons for or against conserving the grizzlies.

Map 1. Grizzly Bear Mortalities in the Greater Yellowstone Ecosystem, 1975-1987

