

Jackson Hole Wildlife Foundation - Nature Mapping Jackson Hole

Wildlife-Vehicle Collision Database: 2015



Summary:

2015 Data Update

The Jackson Hole Wildlife Foundation's Wildlife-Vehicle Collision (WVC) database increased by 259 collisions with the 2015 data update (Table 1). Data for the 2015 update was acquired from the following data sources: Wyoming Department of Transportation - Carcass (118), Wyoming Department of Transportation – Crash (70), Wyoming Game and Fish Wildlife Observation System (33) and Nature Mapping Jackson Hole (28) (Table 2). In total, the WVC database contains 46 total species with mule deer, white-tailed deer, elk and moose being the most prominent species involved in WVCs (Table 3).

2015 Workflow Update

In addition to the 2015 data update, the WVC database was recently restructured to allow for increased efficiency in completing annual updates and to incorporate an automated process to identify and eliminate duplicate. The restructuring will result in lower annual update costs due to reduced time need to sift through data.

This process stores all wildlife-vehicle collisions in a SQL database where it can be accessed in ArcMap, via an SDE connection, and in Program R, via a remote database connection. The SQL database allows all raw data to be stored in one place. Then, with saved queries, the data can be formatted and combined into one large database. This database is then run through an iterative loop in R that eliminates duplicates based on distance (<0.25mi) from other observations entered on the same day of the same species. Additional observations can easily be added to the SQL database and queried to eliminate duplicates.

WYDOT maintains spatial dataset for all major travel routes in Wyoming. These spatial datasets use linear-referenced system (LRS) geometry that contain route and measure attributes. Before raw WVC data is queried in a SQL database, a field locating each observation to the nearest LRS WYDOT route is added and populated with a value using the "Locate Feature Along Route" tool in ArcMap. This value is used to when identifying duplicates.

Wildlife-Vehicle Collision Database, 1990-2015

- No records included within GTNP at park's request. The park maintains its own database.
- Mix of data collected in different ways with different accuracies; may want to consider dissolving data to the nearest mile marker, depending on your goal. Some observers are trained biologists while some are relatively untrained WYDOT employees.
- Large effort to remove potential duplicates among different sources.
- Date/time usually does not record actual time of death, but rather when the dead animal was observed (often a day or two later).
- Heavily biased by ungulates, especially mule deer. These are the animals that WYDOT picks up and that cause crashes large enough to call Police. Also easier to observe by citizen-scientists.
- This database is likely a significant underestimate of road kill occurrences in Teton County, even for ungulates. Many road kill events go unreported or animals are hit and die out of sight from roads.
- Probably biased by larger roads (more observers).
- Biased by year; WYDOT has been collecting data since 1990, but other groups started later. WYDOT has also improved their documentation in recent years.
- Road kill numbers are influenced by winter conditions, with high numbers occurring during more severe winters when ungulates are concentrated close to roads.

Suggested Citation:

Jackson Hole Wildlife Foundation, Jackson, WY, Wildlife-Vehicle Collision Database, 2/18/2016

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Table 1. Wildlife-Vehicle Collisions by year

YEAR	COUNT
1990	67
1991	108
1992	81
1993	53
1994	105
1995	68
1996	147
1997	195
1998	94
1999	156
2000	183
2001	167
2002	105
2003	256
2004	174
2005	175
2006	263
2007	226
2008	177
2009	149
2010	241
2011	293
2012	211
2013	194
2014	264
2015	259
Grand Total	4411

Table 2. Data sources included in the WVC Database in Teton County by year.

DATASOURCE	COUNT
tblJHWF_1990_2002	1020
tblJHWF_2003_2009	435
tblJHWF_NATURE_MAPPING_2010_2012	151
tblJHWF_NATURE_MAPPING_2013	41
tblJHWF_NATURE_MAPPING_2014	44
tblJHWF_NATURE_MAPPING_2015	38
tblJHWF_ROADKILLHOTLINE_2012	22
tblWGFD_WOS_1976_2012	207
tblWGFD_WOS_2013	5
tblWGFD_WOS_2014	17
tblWGFD_WOS_2015	33
tblWYDOT_TETON_CARCASS_1999_2005	208
tblWYDOT_TETON_CARCASS_2006_2012	658
tblWYDOT_TETON_CARCASS_2013	93
tblWYDOT_TETON_CARCASS_2014	110
tblWYDOT_TETON_CARCASS_2015	118
tblWYDOT_TETON_CRASH_1994_2012	993
tblWYDOT_TETON_CRASH_2013	55
tblWYDOT_TETON_CRASH_2014	93
tblWYDOT_TETON_CRASH_2015	70
Grand Total	4411

Table 3. Wildlife-Vehicle Collision by month

MONTH	COUNT
01	624
02	401
03	364
04	316
05	274
06	339
07	306
08	230
09	224
10	332
11	365
12	636
Grand Total	4411

Table 4. Species count in the Wildlife-Vehicle Collision database.

SPECIES	COUNT
American Marten	4
American Mink	2
American Robin	1
Barrows Goldeneye	1
Bighorn Sheep	3
Bison	1
Black Bear	6
Black Rosy-Finch	1
Black-billed Magpie	2
Brewers Blackbird	1
Canada Goose	1
Common Gartersnake	2

Common Raven	2
Coyote	8
Deer Mouse	1
Elk	794
Fox	2
Gray Wolf	2
Great Horned Owl	6
Greater Sage-Grouse	1
Grizzly Bear	1
Least Chipmunk	2
Moose	386
Mountain Bluebird	1
Mountain Lion	2
Mule Deer	3068
North American Porcupine	20
Northern Goshawk	1
Northern Raccoon	28
Pronghorn	6
Red Fox	8
Red Squirrel	3
Rough-legged Hawk	1
Ruffed Grouse	2
Short-tailed Weasel (Ermine)	6
Snowshoe Hare	1
Striped Skunk	5
Wandering Gartersnake	1
Weasel	1
Western Tanager	1
White-tailed Deer	22
Wilson's Warbler	1
Yellow Warbler	2
Yellow-bellied Marmot	1
Grand Total	4411

Table 5. WVCs for all years by road name

ROAD NAME	COUNT
17SA	2
BATCH PLANT RD	3
BOYLES HILL RD	2
BUDGE DR	1
BUFFALO VALLEY RD	3
CASHE ST	1
CORNER CREEK LN	1
COULTER AVE	5
DELONEY AVE	1
E BROADWAY AVE	1
FALL CREEK RD	10
FISH CREEK RD	21
FLAT CREEK DR	2
GAME CREEK RD	2
GLENWOOD AVE	1
HENRY'S RD	8
HIDDEN RANCH LN	1
HIGH SCHOOL RD	1
HOBACK JUNCTION SOUTH RD	1
JACKSON AVE	1
KELLY AVE	2
KING ST	1
MALLARD RD	1
MELODY CREEK LN	1
MILLWARD AVE	1
NATIONAL ELK REFUGE	1
NO NAME ST	1
PARK LOOP RD	10
PARK RANCH RD SO FORK	1
REDMOND ST	1
RYEGRASS RD	1
SADDLE BUTTE DR	2
SKI HILL RD	7
SNOW KING AVE	2
SOUTH PARK LOOP	6
SPRING GULCH RD	22
UPPER CACHE CREEK DR	1
US 189	1
US 189/US 191	320

US 189/US 191/US 26/US 89	1484
US 191/US 26/US 89	736
US 26/US 287	142
US 26/US 89	446
VIRGINIAN LN	1
WY 22	891
WY 390	261
Grand Total	4411

Table 6. 2015 WVCs by road name

Black Bear	1
WY 22	1
Coyote	1
BUFFALO VALLEY RD	1
Elk	7
GAME CREEK RD	1
US 189/US 191	2
US 189/US 191/US 26/US 89	4
Great Horned Owl	1
US 191/US 26/US 89	1
Grizzly Bear	1
US 26/US 287	1
Least Chipmunk	2
FISH CREEK RD	2
Moose	6
SKI HILL RD	1
US 189/US 191/US 26/US 89	1
US 191/US 26/US 89	1
WY 22	3
Mountain Bluebird	1
US 191/US 26/US 89	1
Mule Deer	230
HENRY'S RD	1
JACKSON AVE	1
KELLY AVE	1
SKI HILL RD	2
SPRING GULCH RD	1
US 189/US 191	17
US 189/US 191/US 26/US 89	82
US 191/US 26/US 89	29
US 26/US 287	16

US 26/US 89	27
WY 22	50
WY 390	3
North American Porcupine	3
US 191/US 26/US 89	2
WY 22	1
Northern Raccoon	3
US 189/US 191/US 26/US 89	1
WY 22	1
WY 390	1
Red Squirrel	1
FISH CREEK RD	1
Wandering Gartersnake	1
FISH CREEK RD	1
Weasel	1
FISH CREEK RD	1
Grand Total	259

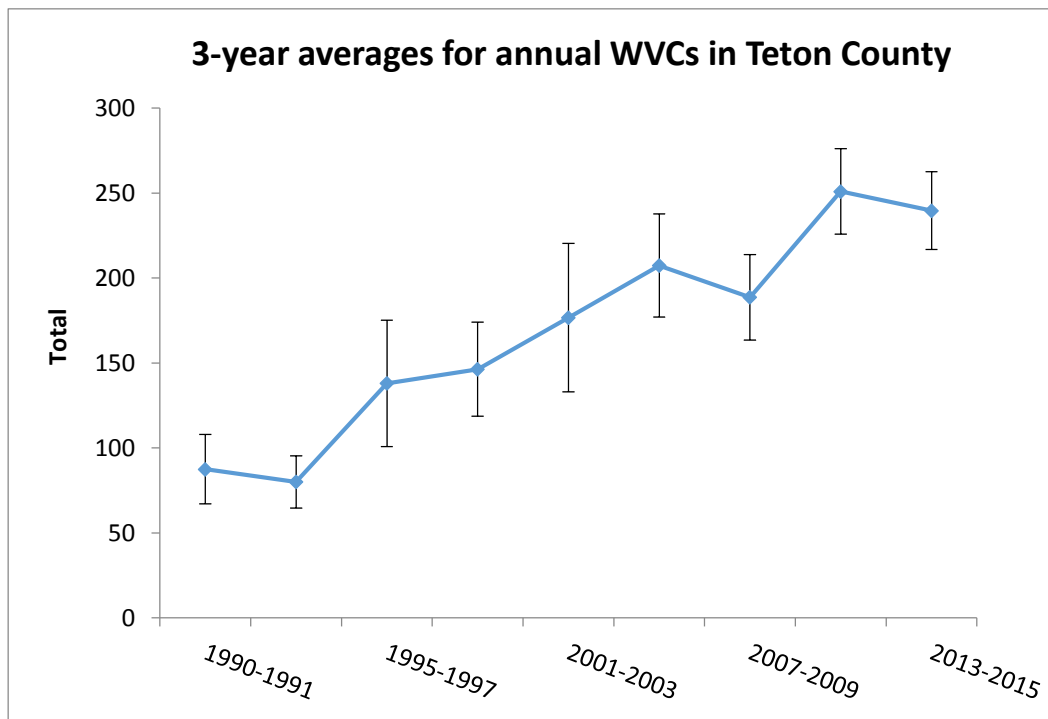


Figure 1. Three-year averages of annual wildlife-vehicle collisions in Teton County, 1990-2015.

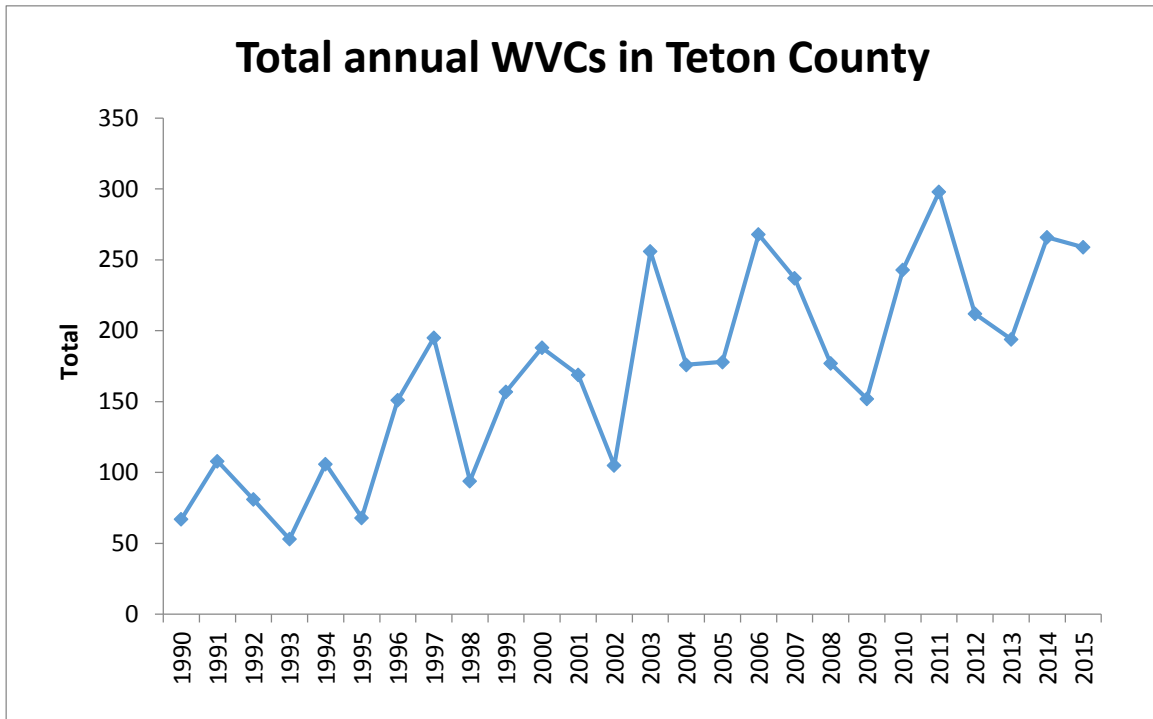


Figure 2. Total annual wildlife-vehicle collisions in Teton County, 1990-2015.