Lingle, S and M. Bonar. Data files for Bonar, M., Manseau, M., Geisheimer, J., Bannatyne, T., and S. Lingle. The effect of steep terrain and female density on survival of neonatal mule deer and white-tailed deer fawns. Ecology and Evolution.

**File 1: Fawn\_Sightings\_Raw\_Data.xlsx**

This file has data for individual sightings of fawns. We used these data to run several ANCOVA to test the effect of species, survival outcome and fawn age on habitat traits. We also used this file to calculate average values included in the other data file (filename = Fawn\_Summary\_Data.xlsx), which was used to run GEE models.

Column A— Unique ID = Number identifying each sighting, although some capture locations did not have a unique number.

Column B — BIRTH YEAR for each fawn: 1994, 1995, 2000, 2001, 2003, 2004 or 2005.

Column C — SPECIES: The species of fawn. Mule deer = MD; white-tailed deer = WT.

Column D — FAWN ID NO = A unique code identifying the species and number of each fawn.

Column E — SEX FAWN: Male (M) or Female (F)

Column F — CAPTURE SIGHTING: Was this the sighting when we first captured a fawn? Yes or No.

Column G — AGE SIGHT (wk). The fawn’s estimated age when sighted, updated from the age estimated when we initially captured the fawn.

Column H — SUMMER AREA: The area where the fawn lived during the eight week monitoring period: Central; East end; Ranch; North End.

Column I — TAGGED TWIN: Did the fawn have a twin that we tagged? Yes or No.

Column J — MOTHER ID NO: The Mother’s identifying number. This will be the same code as the fawn, or the same number as the fawn’s twin in cases when twins were tagged. Each set of maternal twins will have the same identifying code for the mother.

Column K — Survival to eight weeks: Yes; No.

Column L — DISAPPEAR EARLY: “Yes” for fawns that disappeared during the first three weeks of life without our seeing the fawn, or getting sufficient radio signals, to assess a probable cause of death. Post-birth health issues were likely to have been more common at that early stage of life. Otherwise “No”.

Column M — EASTING in Universal Transverse Mercator (UTM)

Column N — NORTHING in Universal Transverse Mercator (UTM)

**Climatic variables (NDVI and weather): one data value per year**

Column O — NDVI\_APR\_JUN: Normalized Difference Vegetation Index. Sum of the bi-monthly values from April 15 to June 30. These are the values from Column P divided by 1,000.

Column P — NDVI\_APR\_JUN\_raw: Raw values of Normalized Difference Vegetation Index. Sum of the bi-monthly values from April 15 to June 30.

Column Q — Winter\_PPT: Mean value of winter precipitation in mm

Column R — Winter\_Wind: Mean wind speed in km/hr

**Habitat variables for each fawn location. NA = not applicable or missing data.**

Column S — ELEVATION: Fawn elevation (m)

Column T— SLOPE: Steepness of terrain: in degrees

Column U — RUGGEDNESS: Vector Ruggedness Measure (VRM). An index of ruggedness of terrain.

Column V — RUGGEDNESS\_CubeRt: Cube root transformed Vector Ruggedness Measure (VRM). An index of ruggedness of terrain.

Column W — ON\_SLOPE: Yes; No.

Column X — ON\_SLOPE\_recode: Binary recoding of Columnn W. 1=On Slope; 0=Off Slope.

Column Y — DIST\_BUILDS: Distance to anthropogenic areas (m)

Column Z — DIST\_BUILDS\_SqRt: Square root transformation of distance to anthropogenic areas (m)

Column AA — DIST\_RIPAR: Distance to riparian area (m)

Column AB — DIST\_COY: Distance to coyote den (m): restricted to fawns living in the central study area and to years 1994, 1995, 2000, 2001 and 2005.

Column AC — TALL\_SHRUB: Association with tall shrub

Column AD — TALL\_SHRUB\_SqRt: Square root transformation of association with tall shrub

Column AE — VEG\_TYPE: Vegetation type associated with each fawn sighting.**File 2: Fawn\_Summary\_Data.xlsx**

We used data in this file to run GEE models to examine contribution of terrain, climate and female density on fawn survival. We used habitat data from individual sightings (Filename = Fawn\_Sightings\_Raw\_Data.xlsx) to calculate an average value for each fawn, e.g. average steepness or ruggedness of terrain. We used one value per annum for characteristics of climate, NDVI and female density.

Column A — SPECIES: The species of fawn. Mule deer = MD: White-tailed deer = WT

Column B — FAWN ID NO: A code identifying the species and number assigned to each fawn.

Column C — SEX FAWN: The sex of each fawn

Column D — BIRTH YEAR: The fawn’s birthyear: 1994, 1995, 2000, 2001, 2003, 2004, 2005.

Colmun E — CAPTURE DATE: The date we captured the fawn: Month/Day/Year.

Column F — CAPTURE AGE: The fawn’s estimated age when we captured it. 0 = newborn; we knew these fawns were <6 hrs old (e.g., by observing the birth or seeing the mother lick the wet fawns). 1 = fawns that we estimated to be less than 7 days in age. 2 = Fawns estimated to be between 7 and 14 days in age.

Column G — TAGGED TWIN: Did the fawn have a maternal twin that we also tagged ? Yes or No.

Column H — MOTHER ID NO: A code identifying the species and number assigned to the mother of a fawn and its twin (when applicable). This code is the same as the code used for the fawn (or for one individual fawn from a set of twins).

Column I — SUMMER AREA: Central; East End; Ranch; North End.

Column J— SURV 8 WK: Survival to eight weeks: Yes or No.

Column K — Disappear Early: “Yes” for fawns that disappeared during the first three weeks of life without our seeing the fawn, or getting sufficient radio signals, to assess a probable cause of death. Post-birth health issues were likely to have been more common at that early stage of life. Otherwise “No”.

**Climatic variables (NDVI and weather): one data value per year**

Column L— NDVI\_APR\_JUN\_raw: raw values of Normalized Difference Vegetation Index. Sum of the bi-monthly values from April 15 to June 30

Column M — NDVI\_APR\_JUN: Normalized Difference Vegetation Index. Sum of the bi-monthly values from April 15 to June 30. These values are values from Column L divided by 1,000.

Column N — Winter\_PPT: Mean value of winter precipitation in mm

Column O — Winter\_Wind: Mean wind speed (km/h)

**Habitat variables:**We used data from individual sightings to calculate a mean value for each of the following habitat traits for each fawn location: Steepness of terrain; Vector Ruggedness Measure; Elevation; Distance to riparian area; Association with tall shrub; Distance to anthropogenic areas; Distance to nearest coyote den. NA = not applicable or no data.

Column P — ELEVATION: Fawn elevation (m)

Column Q— SLOPE: Steepness of terrain: in degrees

Column R — RUGGEDNESS: Vector Ruggedness Measure. An index of ruggedness of terrain

Column S — RUGGEDNESS\_CubeRt: Cube root transformed Vector Ruggedness Measure. An index of ruggedness of terrain

Column T — ON\_SLOPE: Three categories, On Slope; Off Slope; Variable.

Column U — DIST\_BUILDS: Distance to anthropogenic areas (m)

Column V — DIST\_BUILDS\_SqRt: Square root transformation of distance to anthropogenic areas (m)

Column W — DIST\_RIPAR: Distance to riparian area (m)

Column X — DIST\_COY: Distance to coyote den (m): restricted to fawns living in the central study area and to years 1994, 1995, 2000, 2001 and 2005.

Column Y — TALL\_SHRUB: Association with tall shrub

Column Z — TALL\_SHRUB\_SqRt: Square root transformation of association with tall shrub

**Female density:** one data value per year. Analyses involving female density were restricted to fawns living in the central study area.

Column AA — MD\_FEMALES: Mule deer female density (females/km2). These data were based on mid-winter estimates of female density in the central study area in 7 years (7 yrs, 1994, 1995, 2000, 2001, 2003, 2004 and 2005).

Column AB — MD\_FEMALES\_SUMMER: Mule deer female density (5 yrs, 1994, 1995, 2000, 2001 and 2005) (females/km2). These data were based on censuses of females in the central study area during 5 summers (5 yrs, 1994, 2995, 2000, 2001 and 2005).

Column AC — WT\_FEMALES: White-tailed female density (females/km2). These data were based on censuses of females in the central study area during 5 summers (5 yrs, 1994, 2995, 2000, 2001 and 2005).