

## READ ME

The 2<sup>nd</sup> and 3<sup>rd</sup> order Databases are stored in Dryad as an example for those interested in using this structure for their own migratory route habitat predictions. Please contact Dr. Andrew Jakes [jakesa@nwf.org](mailto:jakesa@nwf.org) or Dr. Nicholas DeCesare [NDeCesare@mt.gov](mailto:NDeCesare@mt.gov) for further details.

### Pronghorn Northern Sagebrush Steppe – 2<sup>nd</sup> Order Database Definitions

*Note: Not all columns used in final model predictions, some data used for exploratory analyses*

#### Columns

OBJECTID – Unique identification number for entire database

REC – Duplicate of 'OBJECTID'

id – Unique identification number for entire database before cleaning

FIX – GPS fix number for individual

PRONGID – Pronghorn individual

YEAR – Year that pronghorn was collared

OCCURANCE – 1 = used location, 0 = available location

LOC2 – Jurisdiction (i.e., AB, MT, SK) of used location only

LOC – Combination of movement season, state and individual pronghorn

SEASON – Identified combination of season (spring/fall) and state (migration/stopover) for used and available locations per individual

SEA – identified season sample was recorded for used and available locations per individual

SEASONS – identified season sample was recorded for used and available locations per individual. The use of plural (i.e., "Springs" vs. "Spring") identifies individuals that were recaptured and have locations recorded across multiple years

MOVSTATE – 0 = along movement pathway, 1 = within identified stopover

CASE – Yes = used location, No = available location

PRONG\_SEAS – Indicates the individual, the season identified across multiple years and the GPS fix number

group\_ – Identifies location linked to model validation bins

withhold – Binary value of 0/1. Was location withheld for model validation purposes? 1 = Yes, 0 = No

weight – Weight of locations to retain 5:1 sample size of available and used samples in 3<sup>rd</sup> order analyses

nearestWel – Distance in m to nearest active well

yNDVIvalu – NDVI value within a 16-day composite time-period for that specific year

DecNDVIvalu – NDVI value within a 16-day composite time-period averaged over an 11-year period

ySNOWvalu – Snow occurrence value within an 8-day composite time-period for that specific year

yASSvalu – Snow interpolation reliability score, 0 = most reliable (no interpolation) to 4 = least reliable (greatest interpolation) over a given year

DecASSvalu – Snow interpolation reliability score, 0 = most reliable (no interpolation) to 4 = least reliable (greatest interpolation) over an 11-year period

DecSNOWval – Snow occurrence value within an 8-day composite time-period over an 11-year period

VRM – Vector Ruggedness Measure value derived from 30 m resolution digital elevation model

SLOPE – slope value derived from 30 m resolution digital elevation model

SLOPEq – quadratic value of slope derived from 30 m resolution digital elevation model

Land30 – Land cover categories for the Northern Sagebrush Steppe Initiative area. The dataset was created by mosaicking the Land Cover for Agricultural Regions of Canada – circa 2000 (AAFC) and the

*Montana Land Cover Framework 2010. Land cover classes include: Water, Exposed land, Developed Land, Shrubland, Wetland, Grassland, Agriculture, Pasture and Perennial Crops, Recently Burned or Regenerating Harvest Forest, Coniferous Forest, Deciduous Forest, and Mixed Forest.*

*LAND – Land cover type in word form*

*ASPECT – Aspect value based on degrees*

*ASPECT2 – Aspect value based on radians*

*WATER – Binary value of 0/1. Is location in 'Water' land cover type? 1 = Yes, 0 = No*

*EXPOSED – Binary value of 0/1. Is location in 'Exposed land' land cover type? 1 = Yes, 0 = No*

*DEVELOP – Binary value of 0/1. Is location in 'Developed land' land cover type? 1 = Yes, 0 = No*

*SHRUB – Binary value of 0/1. Is location in 'Shrubland' land cover type? 1 = Yes, 0 = No*

*WETLAND – Binary value of 0/1. Is location in 'Wetland' land cover type? 1 = Yes, 0 = No*

*GRASS – Binary value of 0/1. Is location in 'Grassland' land cover type? 1 = Yes, 0 = No*

*AG – Binary value of 0/1. Is location in 'Agriculture' land cover type? 1 = Yes, 0 = No*

*PPCROP – Binary value of 0/1. Is location in 'Pasture and Perennial Crops' land cover type? 1 = Yes, 0 = No*

*BURNED – Binary value of 0/1. Is location in 'Recently Burned or Regenerating Harvest Forest' land cover type? 1 = Yes, 0 = No*

*CONIF – Binary value of 0/1. Is location in 'Coniferous Forest' land cover type? 1 = Yes, 0 = No*

*DECID – Binary value of 0/1. Is location in 'Deciduous Forest' land cover type? 1 = Yes, 0 = No*

*MIXED – Binary value of 0/1. Is location in 'Mixed Forest' land cover type? 1 = Yes, 0 = No*

*FLAT – Location identified on 'Flat' aspect*

*NORTH – Location identified on 'North' aspect*

*SOUTH – Location identified on 'South' aspect*

*EAST – Location identified on 'East' aspect*

*WEST – Location identified on 'West' aspect*

*FENCEDENSE – Fence density value of location*

*ID\_1 – identifier to link used to available locations at a 5:1 ratio in 3<sup>rd</sup> order analyses*

*Ru100m – Unpaved road density value using 100m search window*

*H250\_50m – Hydrology density at 250,000 scale value using 50m search window*

*Wa1000m – All Well (i.e., all wells identified across Northern Sagebrush Steppe area) density value using 1000m search window*

*Wa1500m – All Well (i.e., all wells identified across Northern Sagebrush Steppe area) density value using 1500m search window*

*Wa500m – All Well (i.e., all wells identified across Northern Sagebrush Steppe area) density value using 500m search window*

*Rp100mq – The quadratic value of paved road density using 100m search window*

*Rp100m – Paved road density value using 100m search window*

*Ra100mq – The quadratic value of all roads (i.e., paved and unpaved) density using 100m search window*

*Ra100m – All roads (i.e., paved and unpaved) density value using 100m search window*

*H1m\_750m – Hydrology density at 1,000,000 scale value using 750m search window*

*NDVIXSP – NDVI value of location during mean spring migration period*

*NDVIXFAL – NDVI value of location during mean fall migration period*

*XSPUDFAL – Distance to nearest active well during mean fall migration period*

*XSPUDSP – Distance to nearest active well during mean spring migration period*

*H1m\_1000m – Hydrology density at 1,000,000 scale value using 1000m search window*

*Ra1000m – All roads (i.e., paved and unpaved) density value using 1000m search window*

*Rp1000m – Paved road density value using 1000m search window*

*PRONG\_SE\_1 – Duplicate of 'PRONG\_SEAS'*

*OBJ2 – Duplicate of 'OBJECTID' and 'REC'*

## **Pronghorn Northern Sagebrush Steppe – 3<sup>rd</sup> Order Database Definitions**

*Note: Not all columns used in final model predictions, some data used for exploratory analyses*

### **Columns**

*new\_id – Unique identification number for entire database*

*unk\_id – original unique identification number for each individual pronghorn*

*FIX – GPS fix number for individual*

*PRONGID – Pronghorn individual*

*YEAR – Year that pronghorn was collared*

*OCCURANCE – 1 = used location, 0 = available location*

*weight – Weight of locations to retain 5:1 sample size of available and used samples*

*LOC – Jurisdiction and area within Montana where individual was captured*

*SEASON – Identified season sample was recorded for used locations only per individual*

*SEA – identified season sample was recorded for used and available locations per individual*

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