

Attributes of Canids Captured at Ptarmigan Lake, Alaska

Data Release Report

National Park Service, Alaska Region

Scott D. Miller

U.S. Department of the Interior

Enterprise Data Directorate

240 W 5th Ave

Anchorage, AK 99501

2026-06-15

Overview

The *Attributes of Canids Captured at Ptarmigan Lake, Alaska* dataset contains physical attributes, including length, weight, stomach contents and reproductive tract information of coyotes and wolves from Ptarmigan Lake in Alaska. I could find no report accompanying these data and the location of Ptarmigan Lake is not specified but is presumed to be in Wrangell - St. Elias National Park and Preserve (WRST) as there is a Ptarmigan Lake in WRST (-141.166891, 61.857181) and it has an airstrip next to it and the source data were found in an archive of data mining materials also related to WRST. This file was created in 2005, and the dataset covers a period from 1998-10-20 to 2001-04-15. I could find no related information in Data Store. One text file with the dataset contained the following text:

Spreadsheet created: 1/20/05 Created by: K. Mocnik-Seasonal Bio Tech Data: Data entered from paper copies of wolves and coyotes that were killed at Ptarmigan Lake from 10/20/1998 to 4/13/2001

I do not have the paper data sheets and can find no report regarding these data. I archive these records in Data Store in hopes that more information comes to light, or that they may be useful to someone in the future.

```
# Read the tidied source file Excel sheet
dir = r'(C:\Work\Projects\1998 WRST Canid\)'
filename = 'Canid_Ptarmigan_Lake_Tidy.xls'
file = paste0(dir,filename)
data = readxl::read_excel(file)

# Make scientific units
data$Length_cm = data$Length_in * 2.54
data$Weight_kg = data$Weight_lb/2.2

# Organize the dataset
data = data %>%
  mutate(Year = year(Date)) %>%
  select(
```

```

Year,
Specimen,
Date,
Species,
Sex,
Age,
Length_cm,
Weight_kg,
StomachContentsPctFull,
ReproductiveTract,
Comments,
# Get rid of un-needed columns. These were informationless, or in the wrong
units of measure
-length_in, -Weight_lb, -`Photo?`, -`Hair?`, -StomachContentsNotes
) %>%
arrange(Date, Specimen, Sex)

# glimpse(data)

```

Dates

The sample dates of these data appear below:

```
knitr::kable(data %>% summarize(Start = min(Date), End=max(Date)))
```

Start	End
1998-10-20	2001-04-15

Samples by year

Number of samples by year appear below:

```
knitr::kable(data %>% group_by(Year) %>% summarize(n=n()))
```

Year	n
1998	57
1999	88
2000	30
2001	33

Probable location

These data are presumed to be from Ptarmigan Lake in Wrangell - St. Elias National Park and Preserve (-141.166891, 61.857181), although there is no report or metadata to confirm.

```
# Park bounding boxes and information
ParkBoundingBoxes = readxl::read_excel(r'(C:\Work\GIS Common Layers\Park
Bounding Boxes.xlsx)')
# Get the Park and build a bounding box
Park = ParkBoundingBoxes %>% filter(Park=='WRST')
bbox = st_bbox(c(xmin = as.numeric(Park[1,'LonMin']),xmax =
as.numeric(Park[1,'LonMax']),ymax = as.numeric(Park[1,'LatMax']),ymin =
as.numeric(Park[1,'LatMin'])),crs = st_crs(4326))

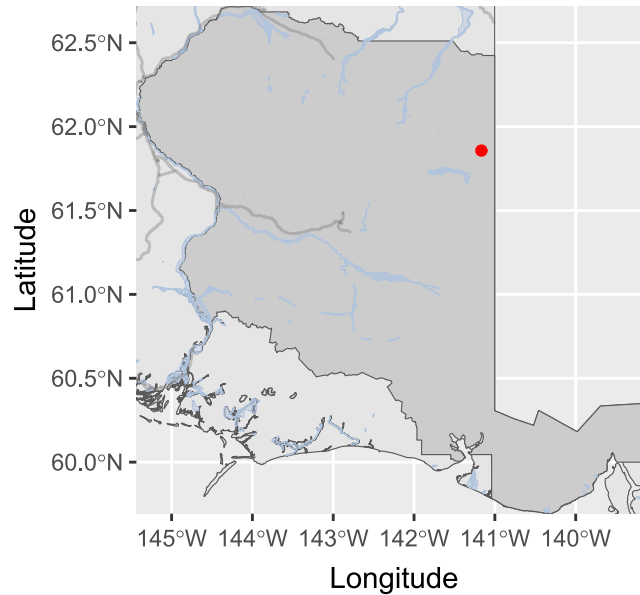
# Load spatial layers from either Data Store (slow, but reliable for anyone
anywhere) or local directory
# Load spatial files locally
ShpPath = "C:/Work/GIS Common Layers/"
Parks = read_sf(paste(ShpPath,"GCS/AKParks_reprojected.shp",sep=""))
```

```
Warning in CPL_read_ogr(dsn, layer, query, as.character(options), quiet, : GDAL
Error 1: Corrupted .shp file : shape 262 : nEntitySize = 8
```

```
AK = read_sf(paste(ShpPath,"GCS/AK_GCS_poly.shp",sep=""))
Rivers = read_sf(paste0(ShpPath,"Alaska_Rivers_1M.geojson.geojson"))
Roads = read_sf(paste0(ShpPath,"DOT_RoadSystem_091318/", "DOT_RoadSystem_091318.shp"))

ggplot() +
  # Background layers
  geom_sf(data=AK) +
  geom_sf(data=Parks,fill='gray80') +
  geom_sf(data = Rivers, fill = "lightsteelblue", color =
'lightsteelblue',alpha=0.4) +
  geom_sf(data = Roads, fill = "gray50", color = 'gray50',alpha=0.4) +
  geom_point(aes(x=-141.166891, y=61.857181),color='red') +
  # Zoom to bounding box
  coord_sf(
    xlim = c(as.numeric(bbox["xmin"]), as.numeric(bbox["xmax"])),
    ylim = c(as.numeric(bbox["ymin"]), as.numeric(bbox["ymax"])),
    expand = FALSE
  ) +
  labs(x='Longitude',y='Latitude',title = paste0("Ptarmigan Lake, ",wrst))
```

Ptarmigan Lake, Wrangell - St. Elias National F



Size metrics by species and sex

This dataset contains length and weight data by species and sex. Basic statistics and scatter charts of these data appear below:

```
knitr::kable(data %>% group_by(Species, Sex) %>% summarize(
  `Mean length (cm)` = mean(Length_cm),
  `Length (S.D.)` = sd(Length_cm),
  `Mean weight (kg)` = mean(Weight_kg),
  `Weight (S.D.)` = sd(Weight_kg),
  n=n()
))
```

`summarise()` has grouped output by 'Species'. You can override using the `.groups` argument.

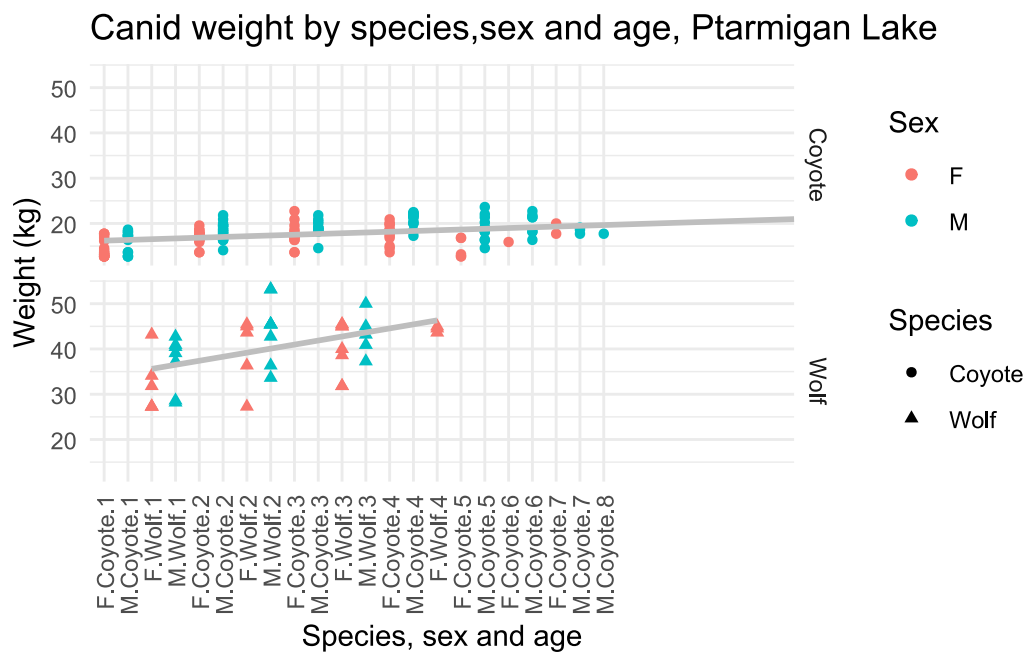
Species	Sex	Mean length (cm)	Length (S.D.)	Mean weight (kg)	Weight (S.D.)	n
Coyote	F	109.3503	9.746655	16.47145	2.392568	78
Coyote	M	121.3152	9.838318	18.63366	2.436205	84
Wolf	F	175.9527	22.145729	38.40909	7.203062	22
Wolf	M	192.1164	33.491561	41.81818	6.595945	22
Wolf	U					2

Weight by species, and age

Weight (kg) by species, and age are presented below. I could find no information on how weight was determined.

```
ggplot(data %>% filter(Sex != 'U')) +
  geom_point(aes(x = interaction(Sex, Species, Age), y = Weight_kg, color =
Sex, shape = Species)) +
  geom_smooth(aes(x = as.numeric(interaction(Sex, Species, Age)), y =
Weight_kg), method = "lm", se = FALSE, color = 'gray') +
  facet_grid(Species ~ .) +
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 90, hjust = 1, vjust = 0.5)) +
  labs(x = 'Species, sex and age', y = 'Weight (kg)', title = "Canid weight by
species, sex and age, Ptarmigan Lake")
```

`geom\_smooth()` using formula = 'y ~ x'



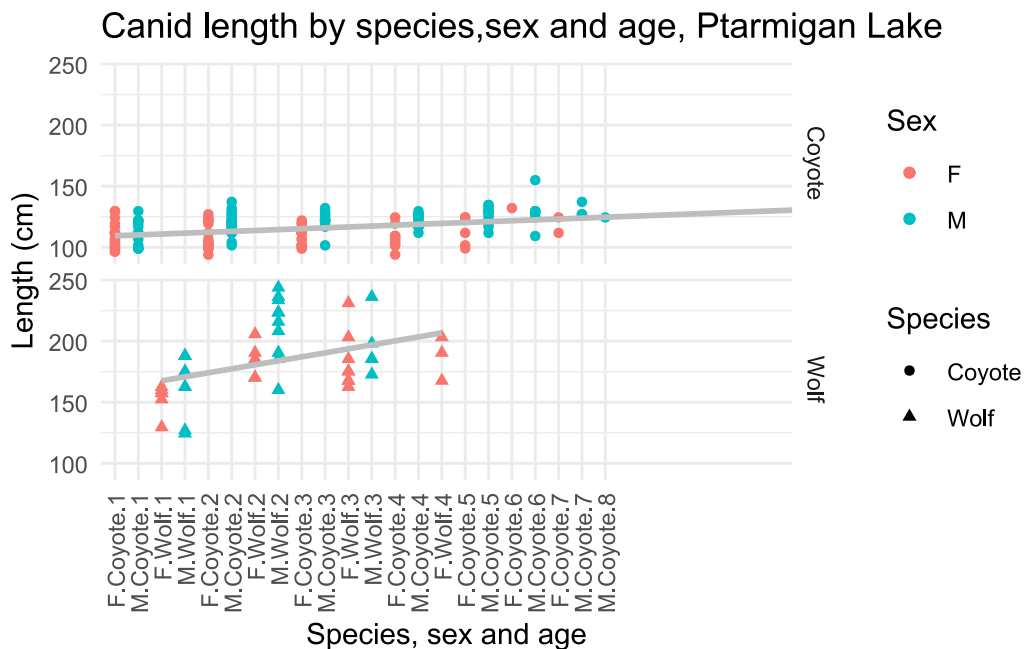
Length by species, and age

Length (cm) by species, and age are presented below. I could find no information on how the animals were measured.

```
ggplot(data %>% filter(Sex != 'U')) +
  geom_point(aes(x = interaction(Sex, Species, Age), y = Length_cm, color =
Sex, shape = Species)) +
```

```
geom_smooth(aes(x = as.numeric(interaction(Sex, Species, Age)), y =
Length_cm), method = "lm", se = FALSE, color = 'gray') +
facet_grid(Species ~ .) +
theme_minimal() +
theme(axis.text.x = element_text(angle = 90, hjust = 1, vjust = 0.5)) +
labs(x = 'Species, sex and age', y = 'Length (cm)', title = "Canid length by
species, sex and age, Ptarmigan Lake")
```

```
`geom_smooth()` using formula = 'y ~ x'
```



Stomach contents

The dataset contains information on stomach contents which appear to be proportion full. I don't know what the project leaders intended with the data so I didn't summarize them in any way.

Metadata

I present the dataset structure below and generate external summaryTools and DataExplorer reports to accompany and describe the dataset:

```
# Show the metadata
md = read.csv(paste0(dir, dataFileName, "_metadata.csv"))
knitr::kable(md)
```

Column- Name	Data Type	Units	Description
Year	numeric		Year of observation.
Specimen	character		Specimen.
Date	POSIXct		Date of observation.
Species	character		Species.
Sex	character		Sex. M=Male. F=Female. U=Unknown.
Age	numeric		Age, years.
Length_cm	numeric	cm	Length in cm.
Weight_kg	numeric	kg	Weight, in kg.
Stomach- ContentsPct- Full	numeric	Pro- por- tion	Stomach contents. Proportion full.
Reproduc- tiveTract	character	Boolean	ReproductiveTract. Boolean. The exact purpose and definition of ReproductiveTract is unknown.
Comments	character		Comments.