

## **Abstract**

Gray wolves (*Canis lupus*) are group-living carnivores that travel over large areas and are one of the most controversial species in North America. Gray wolf management over the last century has ranged from eradication by nearly any means to preservation under the Endangered Species Act to state-managed which often includes limited hunting and, in some areas, population reduction. Management decisions are complicated by transboundary movements of wildlife, especially when the bordering agencies have disparate goals or mandates. This data is specific to gray wolves and packs using five National Park Service (NPS) units (years of data): Denali National Park and Preserve (33 years), Grand Teton National Park (23 years), Voyageurs National Park (12 years), Yellowstone National Park (27 years), and Yukon-Charley Rivers National Preserve (23 years). This dataset features two measures of gray wolf biological processes, pack persistence and reproduction, and was used to determine the impacts of anthropogenic mortality on the pack. We examined persistence and reproduction at the pack level given known wolf mortalities and pack sizes.

## **Column descriptions**

**park:** Abbreviation for one of five National Park Service units contributing data (DENA-Denali National Park and Preserve, GTNP-Grand Teton National Park, VNP-Voyageurs National Park, YNP-Yellowstone National Park, or YUCH-Yukon-Charley Rivers National Preserve).

**biolyr:** Biological Year starts in the spring just before pups are born in each NPS unit. For YNP, GTNP, and VNP this was April 1. For DENA and YUCH this was May 1. The biological year continues for 365 days. For example, biological year 2002 in YNP starts on April 1, 2002 and ends on March 31, 2003.

**pack:** pack name as recorded by each NPS unit

**packcode:** pack names coded by number

**packsizeAug:** pack size in the fall

**mortYN:** binary code for a pack-year with a human-caused mortality (1) or without a human-caused mortality (0)

**mortALL:** total number of human-caused mortalities for the pack-year

**mortLEAD:** total number of human-caused mortalities of a leader wolf (breeder/alpha) for the pack-year

**mortNONLEAD:** total number of human-caused mortalities of a non-leader (breeder/alpha) for the pack-year

**reprody1:** binary code for reproduction in the season following the biological pack-year, (1) if wolves localized or at least one pup was observed, (0) if wolves did not localize and no pups observed

**persisty1:** binary code for pack persistence to the end of the biological pack-year, (1) if pack persisted with at least two pack members in the same general territory as the previous biological year, (0) if the pack dissolved or dropped down to a lone wolf only. This was generally confirmed when a new pack took over the territory but also confirmed through tracking.