

Adaptive Elk and Carnivore Management Project Update

March 04, 2024

Background:

The purpose of this five-year project is to assess how habitat treatments, carnivores and other factors impact elk population vital rates and distributions and use this information to develop recommendations for meeting elk population objectives in NW Montana. We are also developing camera-based methods to estimate elk and carnivore abundance in hunting district (HD) 121, which is a difficult district to survey due to heavy tree cover that obstructs visibility. Our goals in this second year of the project are to continue collecting baseline data on elk vital rates, distributions, and habitat conditions, and maintain a grid of cameras. HD 121 was selected as the study area in part due to the abundance of elk and feasibility of capture, as well as the ongoing and potential forest management activities occurring in this area. Elk harvest has declined in HD 121, raising concerns from FWP and stakeholders regarding this elk population. FWP is partnering with the University of Montana to complete this project.

Fall and Winter 2023-2024 Update:

Elk collaring and monitoring

We captured 53 elk (42 adult females and 11 calves) in the HD 121 study area during winter 2023-2024. Captures this winter have occurred through clover trapping and helicopter capture operations. Clover trapping began January 3 and is ongoing. Helicopter capture operations occurred February 24 - 27. During the helicopter capture, a total of 24 elk were captured and one mortality occurred. Because the elk that died had received chemical immobilization drugs, her carcass was removed from the field via helicopter for safe disposal.

In total, we have captured a total of **143** individual elk and we have GPS-collared **98** adults, **20** 6-month-old calves, and **25** neonatal calves. We are currently monitoring a total of **87** adult elk (**84** females and **3** males) and **15** calf elk. We have recorded a total of **3** collar malfunctions, **17** mortalities, and **14** slipped calf collars (i.e., expandable neonate collars that appear to have slipped over the animal's head with no evidence of a mortality). Additionally, **7** of the calf collars deployed in winter 2022-23 dropped off after one year of deployment as planned. To date, we have collected a total of **255,373** elk locations (Figures 1 & 2).

Carnivore collaring and monitoring

During winter 2023-2024, we worked with hound handlers to capture and collar 6 mountain lions. This brings the total number of mountain lions collared to **9 mountain lions** (**7** females and **2** males). Of these, we have recorded **0** collar malfunctions and **1** mortality. Cause of death appeared to be natural mortality; however, the carcass will be submitted to the FWP Wildlife Health Lab for necropsy and additional testing. We have collected a total of **5,730** lion locations to date.

There are currently 5 black bear collars deployed. Animals are denned and we expect collars to start transmitting location data after den emergence. We have collected a total of **1,576** black bear locations to date.

Table 1: Mortality summary arranged by species and mortality date

Species	AnimalID	Sex	CaptureAgeClass	CaptureDate	MortDate	MortAgeClass	MortCause	MortConfidence
Elk	NOX23020	Female	6-mo calf	2023-02-07	2023-02-10	Calf	Natural	Probable
Elk	NOXN23019	Male	Neonatal calf	2023-06-05	2023-06-07	Calf	Predation - lion	Certain
Elk	NOXN23015	Male	Neonatal calf	2023-06-03	2023-07-08	Calf	Natural	Certain
Elk	NOXN23017	Male	Neonatal calf	2023-06-03	2023-07-15	Calf	Predation - bear	Probable
Elk	NOX23057	Male	6-mo calf	2023-02-14	2023-08-08	Adult	Predation - wolf	Certain
Elk	NOX23039	Male	Adult	2023-02-16	2023-09-04	Adult	Hunter harvest	Certain
Elk	NOX23047	Female	Adult	2023-01-25	2023-09-06	Adult	Hunter harvest	Certain
Elk	NOXN23021	Female	Neonatal calf	2023-06-05	2023-09-19	Calf	Predation - lion	Certain
Elk	NOX23040	Male	Adult	2023-02-14	2023-09-28	Adult	Hunter harvest	Certain
Elk	NOX23006	Female	Adult	2023-02-21	2023-10-06	Adult	Natural	Probable
Elk	NOX23030	Male	Adult	2023-02-15	2023-10-12	Adult	Harvest-related	Certain
Elk	NOXN23009	Male	Neonatal calf	2023-06-02	2023-10-15	Calf	Harvest-related	Certain
Elk	NOX23003	Female	Adult	2023-02-16	2023-11-01	Adult	Hunter harvest	Certain
Elk	NOX23027	Female	Adult	2023-02-15	2023-11-08	Adult	Hunter harvest	Certain
Elk	NOX23026	Female	Adult	2023-02-16	2023-11-14	Adult	Predation - lion	Probable
Elk	NOX23109	Female	Adult	2023-02-16	2024-01-27	Adult	Predation - wolf	Certain
Elk	NOX24009	Male	6-mo calf	2024-01-04	2024-02-25	Calf	Predation - lion	Certain
Lion	NOXL2301	Female	Adult	2023-01-06	2024-01-24	Adult	Under investigation	Pending

Adult female elk movements

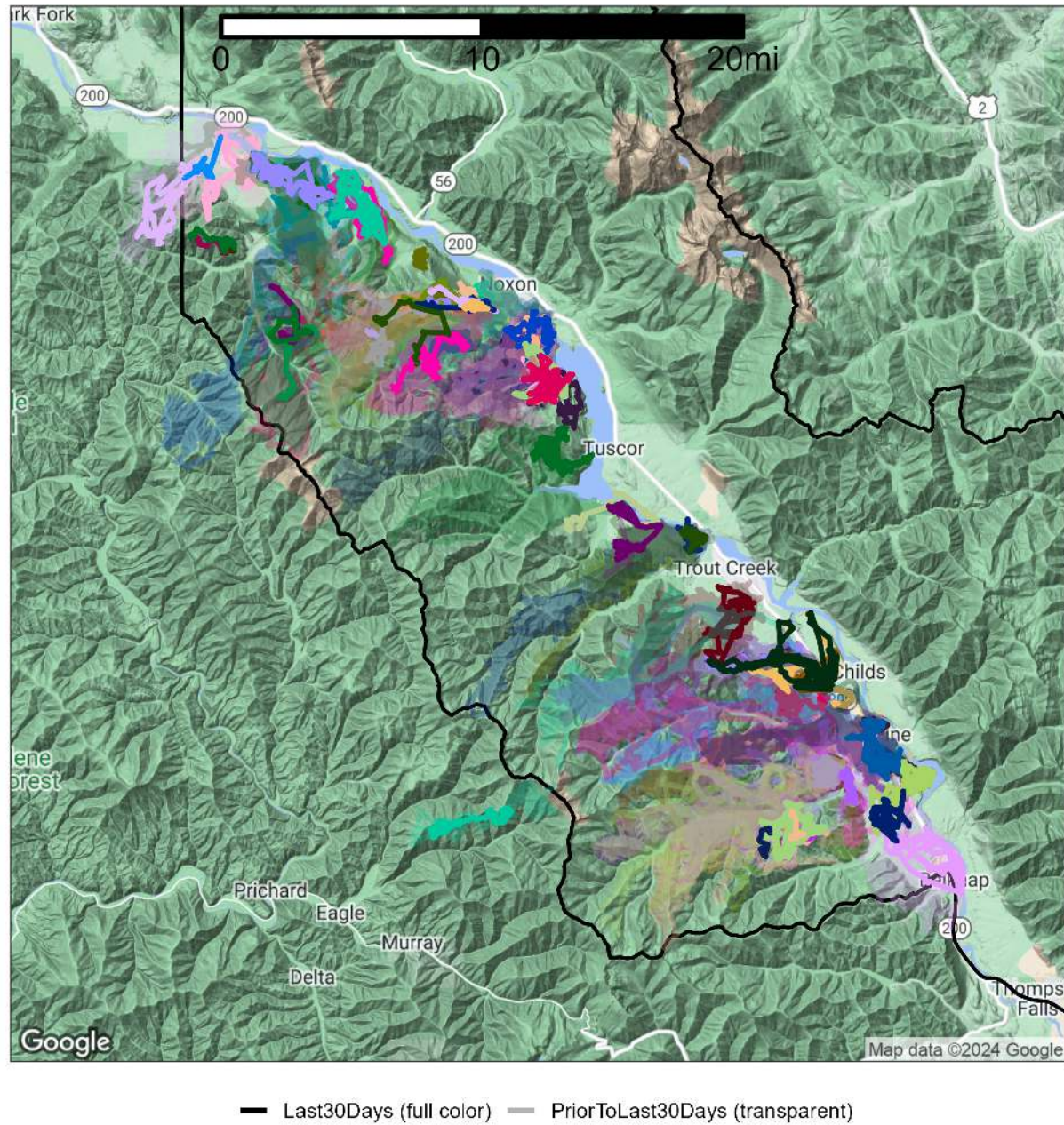


Figure 1: Map of adult female elk movements with movement paths colored by individual. The HD121 boundary is outlined in black.

Adult male elk movements

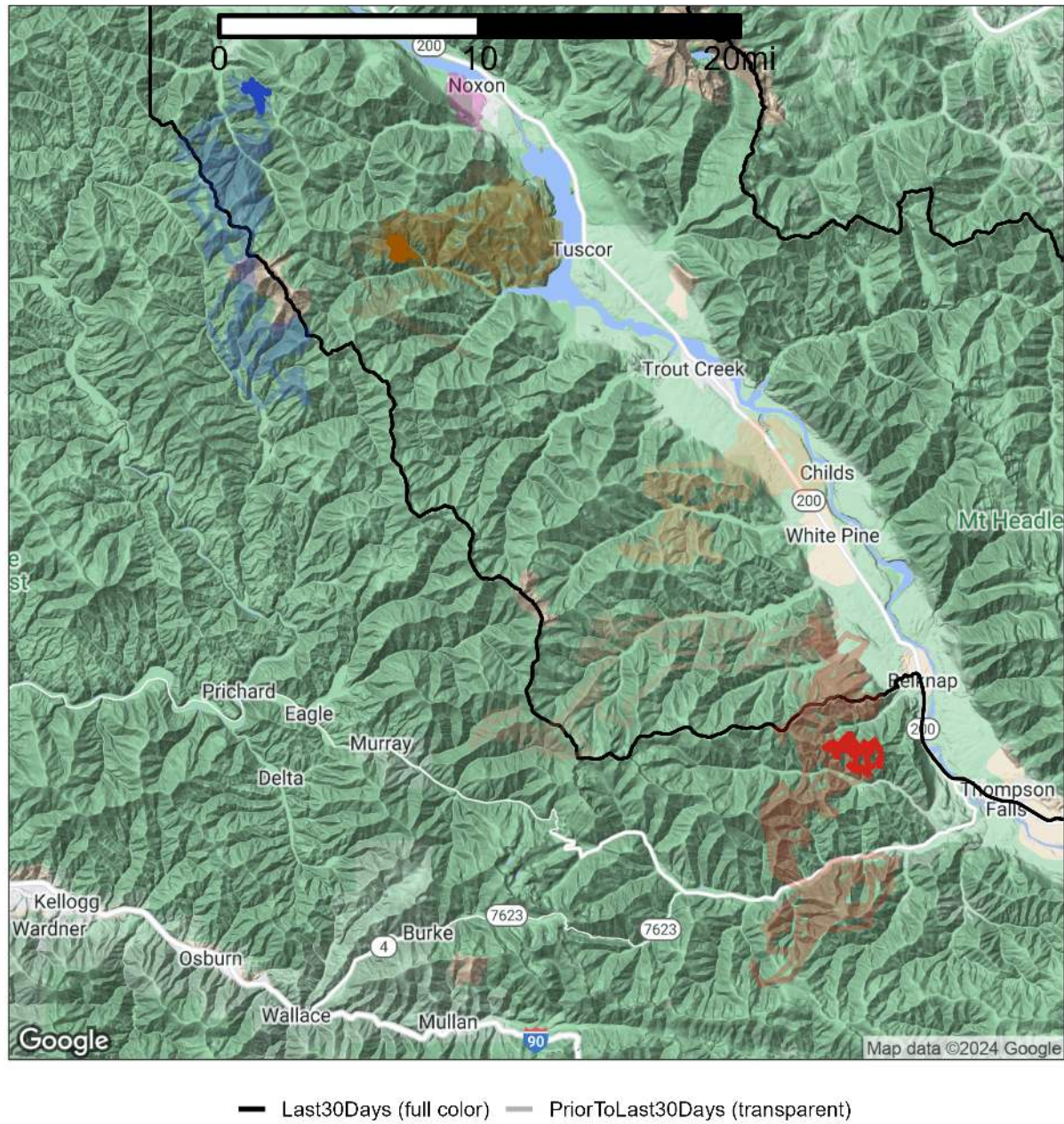


Figure 2: Map of adult male elk movements to date with movement paths colored by individual. The HD121 boundary is outlined in black.