



Region 2

State of the Elk

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Photo by Mike Ebinger

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The Art of Counting Elk *by Rebecca Mowry*

In the last Quarterly, Kirstie Yeager wrote about winter elk surveys in the Upper Clark Fork. In the Bitterroot, I do my elk surveys in the spring. I wrapped them up in early May.

In forested areas, elk tend to hang out under the canopy during the winter for shelter from snow, cold, and wind. Thus, we focus our surveys right when the snow is melting and “green-up”—that springtime flush of fresh green growth on the open, low-elevation hillsides—is in full swing. This pulls the hungry elk out of the timber to feed, especially in the early morning.

We start each flight with a search for bulls, which tend to be the first ones to vanish back into the timber as the day wears on. Since they typically hang out alone or in small groups at higher elevations, we cruise the treeline for the first hour to catch them out in the open. Then we spend the rest of the flight—another 1-2 hours, depending on the weather—counting the larger groups which linger in the open a little longer. We do one pass to get a total count, then another to pick out the calves, spike bulls, and any other bulls that might be there (discernible by their blond

coats even after their antlers have dropped). Eventually, even they will head back to the timber, or bed down in the open—and bedded elk are harder to classify.

People often ask me how I count, and they're surprised to learn I usually just look out the window and count in my head. This isn't that hard to do as long as the herd is of manageable size (up to 200 animals) and not bunched up (when they are, it's really difficult to keep track of which elk you've already counted). Even a herd of 500 elk is easy to count if they're walking across the hillside in a narrow, straight line. Just fly alongside and count away—keeping track of each 100 elk by holding up a finger like a kindergartener. A huge herd scattered over a large area, though, is a nightmare. In those cases, I take a series of photographs and count them back in the office, stitching the photos together

and putting a dot on each elk as I count.

It's also worth noting that the type of plane makes a significant difference in how well I can do this. We usually fly in a Piper Super Cub-type plane, which is a lightweight, two-seater plane that can fly slowly and has excellent visibility. The observer sits behind the pilot and has a good view out both windows. The elk also don't seem very bothered by it. Sometimes they don't even look up from their grazing as we circle overhead. They might give an annoyed ear flick or two.

It takes me about 15 individual flights to get all my elk herds counted. As the spring progresses, the temperatures rise, and more snow melts, the elk gradually make their way into the higher elevations where they will break up into smaller groups and become much harder to find.



Examples of what I might find on my elk surveys. Top: A large herd that is easy to count because of how nicely they are spread out in a long, narrow line. In the Super Cub, we can cruise past this herd slowly and get an excellent count. Below: Large groups of elk that are milling around in a way that is quite difficult to count. Both of these photos were used later, in the office, to get an accurate number. Take a look at the size and color of the elk as well, and you'll see how we can pick out the calves and bulls (the latter by their paler coats and sometimes visible antlers). Previous page: The FWP plane circles over part of an elk herd in the Bitterroot. Not pictured is a herd of ~100 elk off the page to the left.



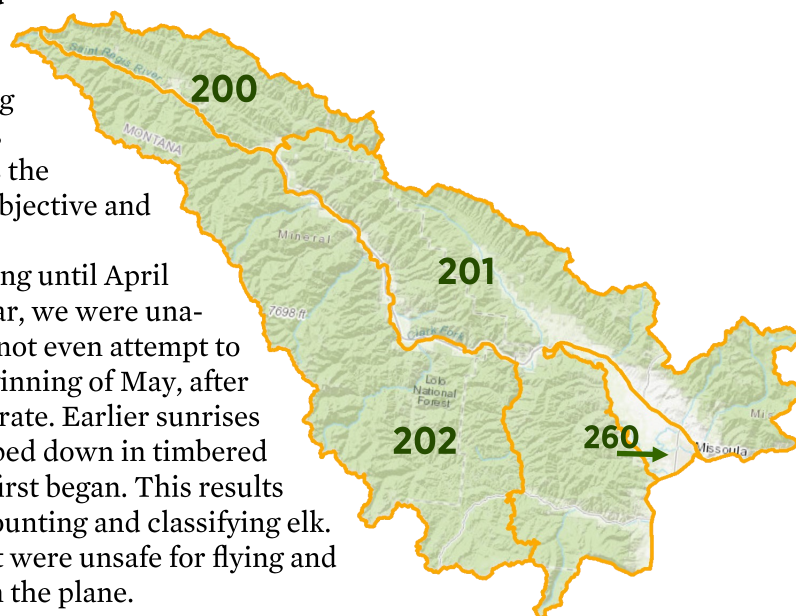
How many?



Lower Clark Fork *Ryan Klimstra*

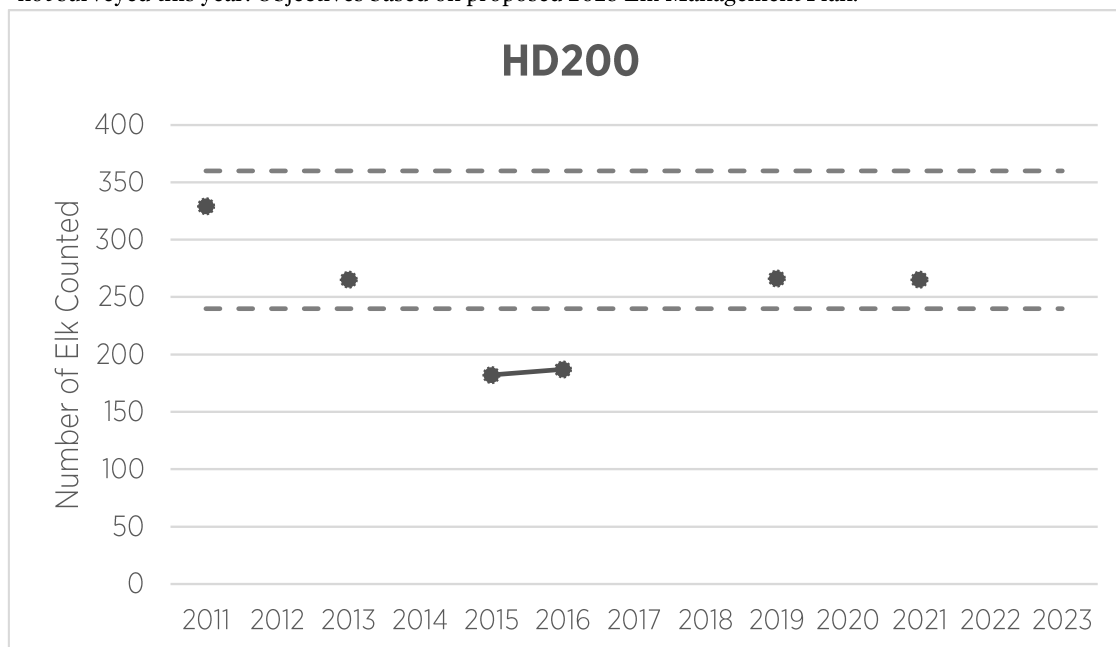
Overall, the entire survey for HD201 was good and we ended up with more elk than the previous year. This could be a result of good over winter survival which can also aid in recruitment of young animals into the population. With nearly 30 calves for every 100 cows and 19 bulls for every 100 cows the HD201 population remains within our proposed objective and is stable.

However, because we did not start surveying until April 7th, which was ~10-15 days later than a normal year, we were unable to complete the survey for HD202 and we did not even attempt to survey HD200. Late in the month of April and beginning of May, after peak green-up, survey conditions began to deteriorate. Earlier sunrises and warmer morning temperatures caused elk to bed down in timbered areas earlier in the morning than when green-up first began. This results in great difficulty in finding and then accurately counting and classifying elk. Spring rains also created heavy fog conditions that were unsafe for flying and completely obscured elk from our vantage point in the plane.



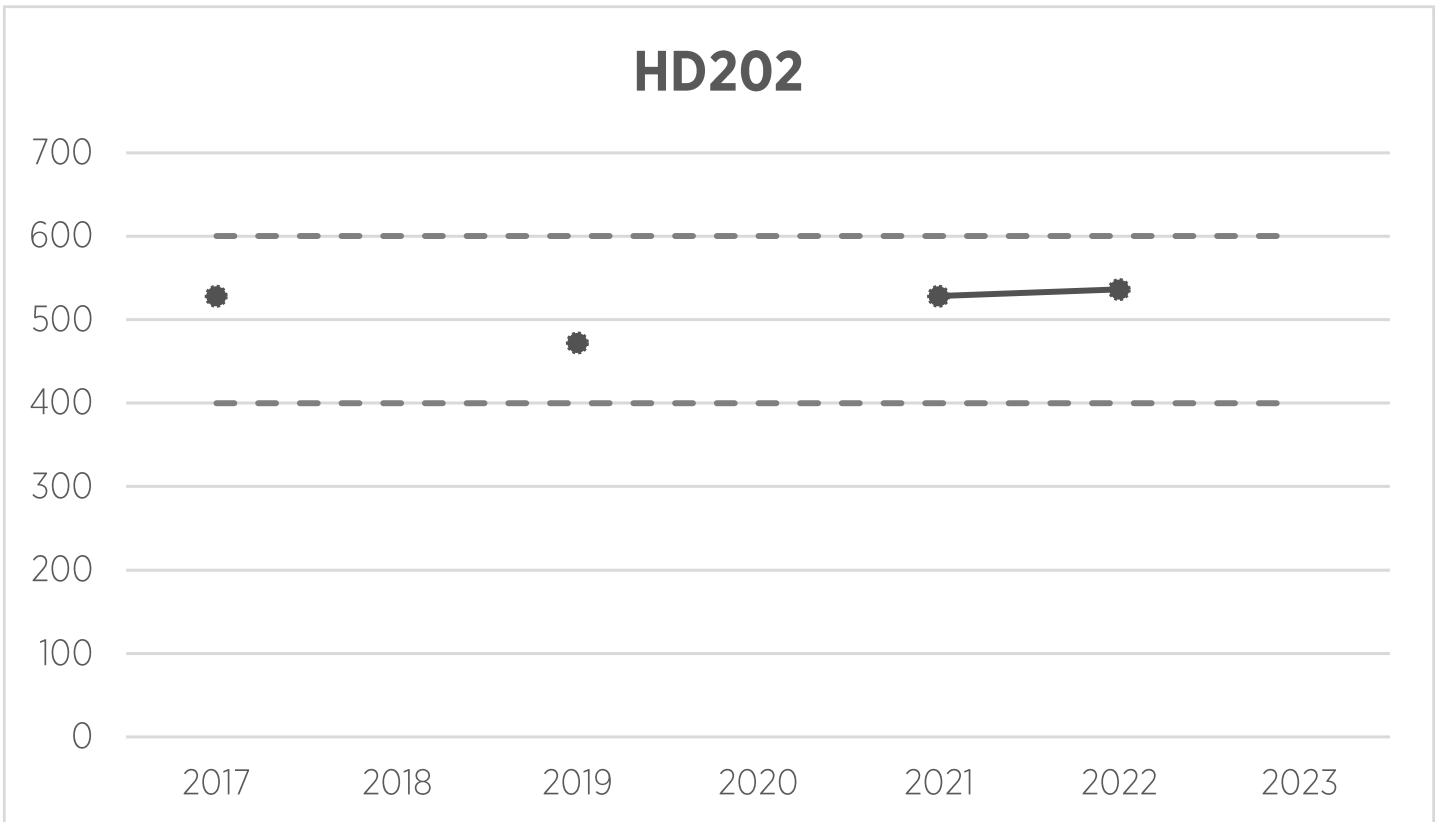
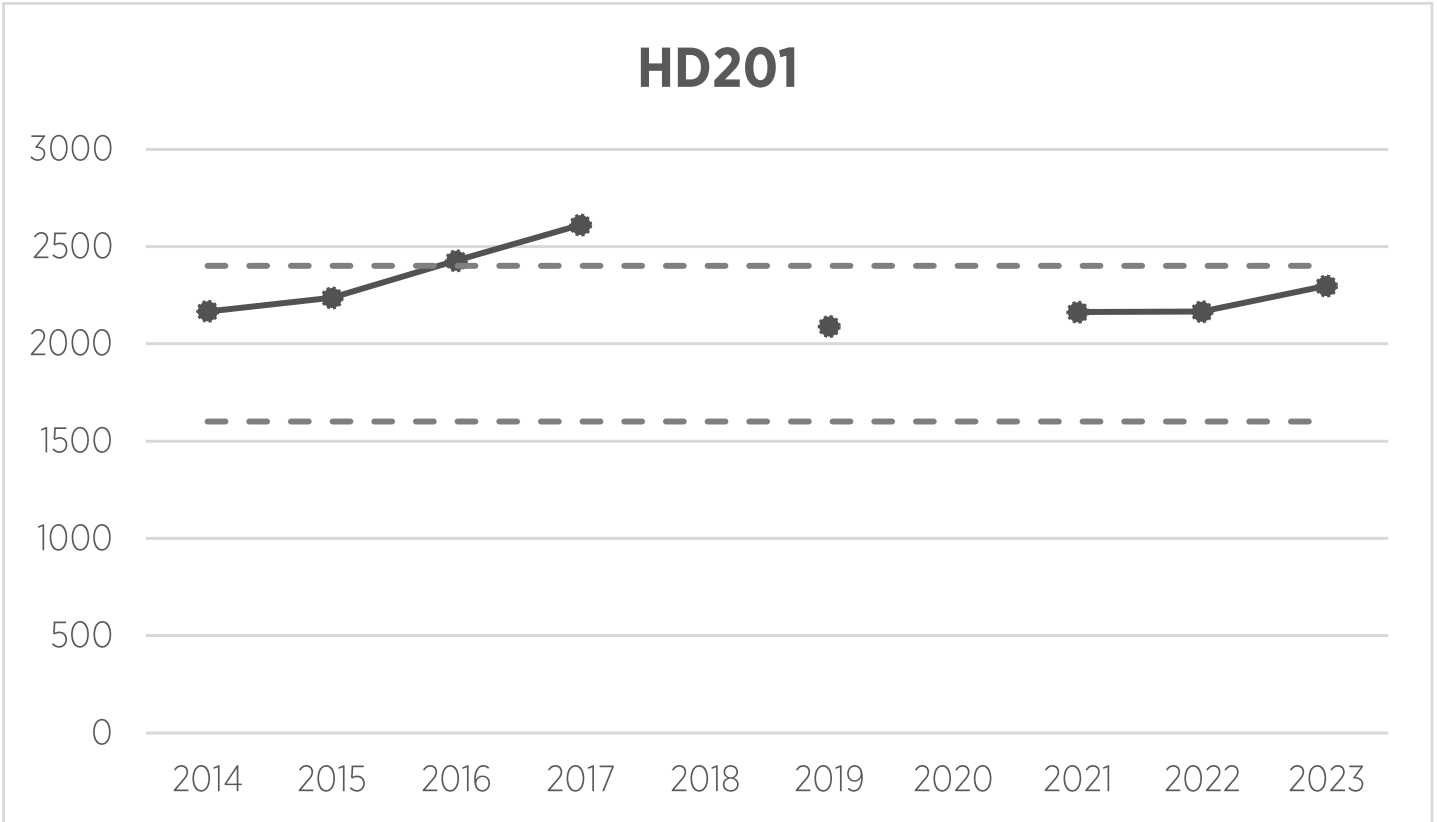
HD	Total	Calf:cow	Bull:cow	Most recent previous count	Objective	Status
200	NS	NS	NS	265 (2021)	240-360	Within
201	2297	0.27	0.19	2165 (2022)	1600-2400	Within
202	NS	NS	NS	536 (2022)	400-600	Within

NS = not surveyed this year. Objectives based on proposed 2023 Elk Management Plan.



HD200 was not surveyed this year due to the short survey season. Dashed lines represent upper and lower objective range in the proposed 2023 Elk Management Plan.

HD201 underwent significant boundary changes in 2022, including combining several HDs and taking the top portion (Carlton Creek–Lolo drainage) of HD240.



As per the 2023 Elk Management Plan, HD202 includes 3 survey units (N. Fork Fish - Cyr, Cougar - Quartz, & Cold - Trout). HD202 was not flown in 2023.

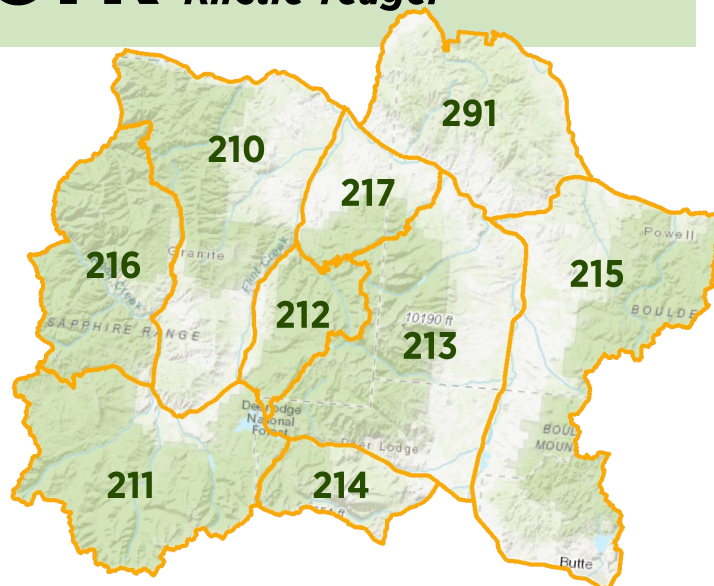
Upper Clark Fork *Kirstie Yeager*

All HDs in the Upper Clark Fork were aerially surveyed in 2023. All surveys were post-hunt with all but one occurring in the winter between January 13th and February 3rd. The survey for HD214 was the only survey conducted in the spring (April 30th). In general, the conditions for the winter surveys were good. Though the probability of finding all elk is very low, it is likely that we found most of the cows, calves, and yearlings. We may have missed the group that winters behind Philipsburg (east side). Bulls are always difficult to find as they tend to remain in the timber in smaller bachelor groups biasing bull to cow ratios low. However, winter surveys are typically pre-antler shed so those that are found are easily identifiable.

Surveys in the Philipsburg Valley were modified in 2023. Elk from multiple HDs (210, 211, 212, & 216) congregate on winter range in the southern end of the valley. At this time of year, boundaries are somewhat arbitrary in that elk may be on one side of the line one day and on the other the next. As a result, all HDs here were flown together over two days (February 2nd and 3rd) and elk numbers were combined into one population count represented in the chart on Page 9. Elk in the northern end of HD210 are relatively isolated from elk in the south; thus, these elk were surveyed independently. Historically, the northwestern corner of HD210 (lower Rock Creek) was not included in survey efforts and likewise, it was not surveyed in 2023. Increasing numbers of elk have been anecdotally reported to winter in this area, specifically, large numbers of bulls. Likewise, several elk were observed during the spring bighorn sheep count on April 8th. A 8289-acre fire occurred in 2017 in Brewster Creek. It is possible that this fire improved winter-range conditions in lower Rock Creek altering the behavior of some elk. Future surveys will be modified to include a more thorough assessment of elk populations in lower Rock Creek.

HDs 213 and 217 were surveyed during a two-day window (February 1st and 2nd). Total elk numbers in HD217 were slightly lower with observations in north HD213 being slightly higher. This is likely explained by movement between the northern end of HD213 and the eastern boundary of HD217, which has been observed to occur.

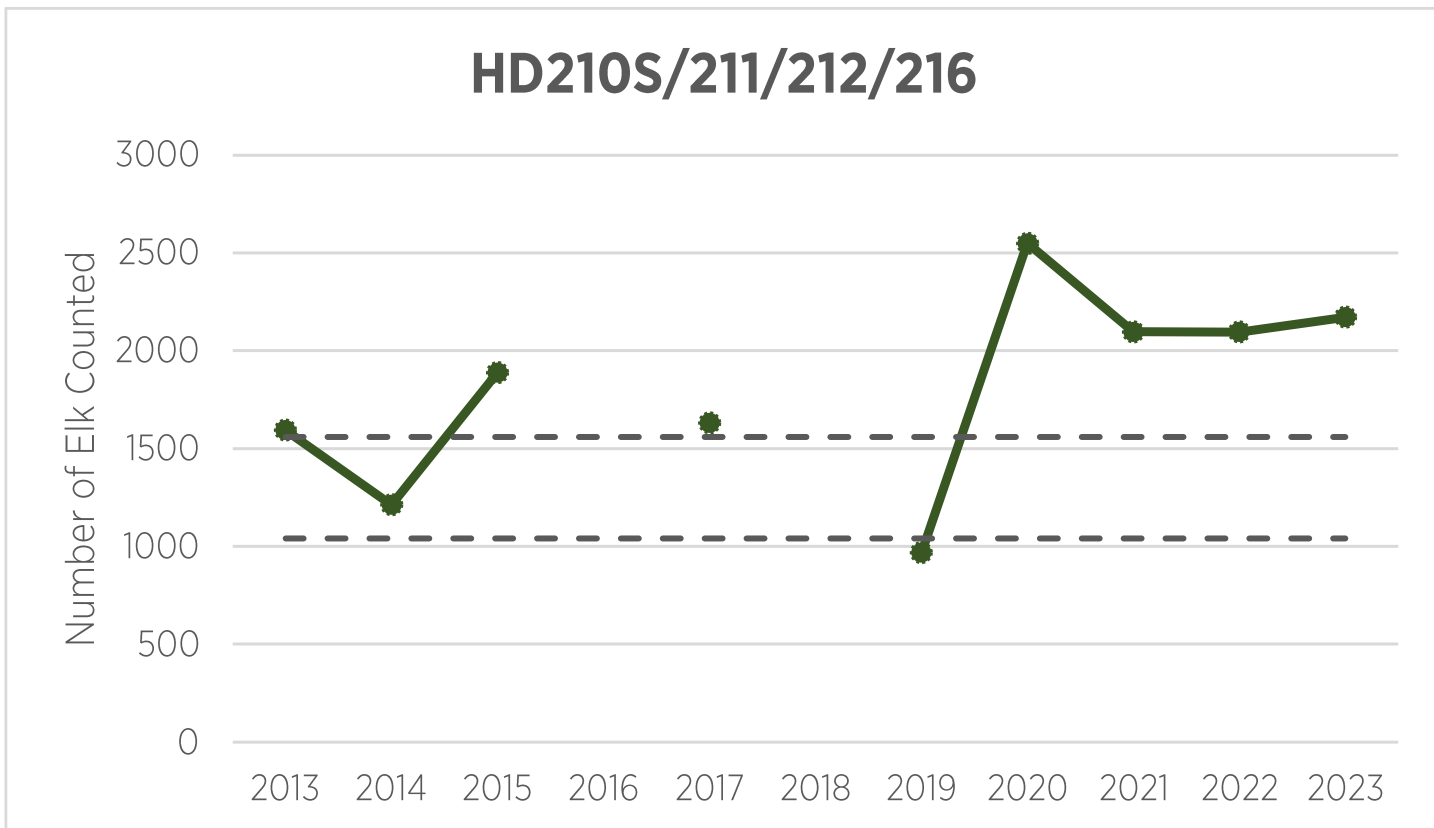
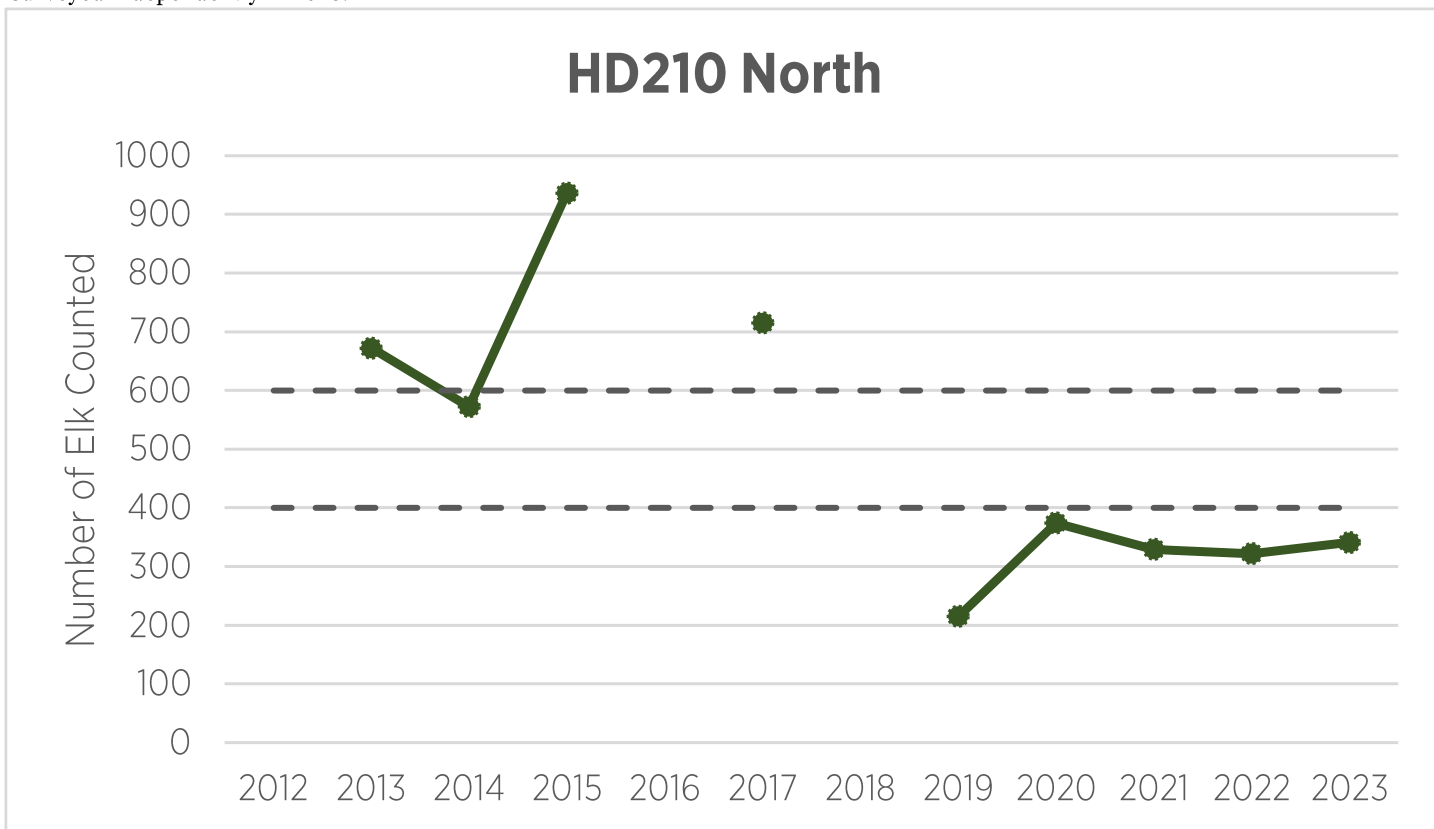
HD214 is typically surveyed in the winter but adverse weather conditions and an aircraft shortage delayed the flight until April. As a result, this survey was a 'green-up' survey and the count (133 elk) is not comparable to previous counts.



HD	Total	Calf:cow	Bull:cow	2022 count	Objective	Status
210N	341	18	2	322	500	Below
210S/211/ 212/216	2172	29	9	2030	1300	Above
213	2424	32	18	1873	1150	Above
214	NA	NA	NA	170	200	Within
215	1958	27	12	1709	1700	Within
217	562	32	21	781	600	Within
291	633	29	9	654	600	Within

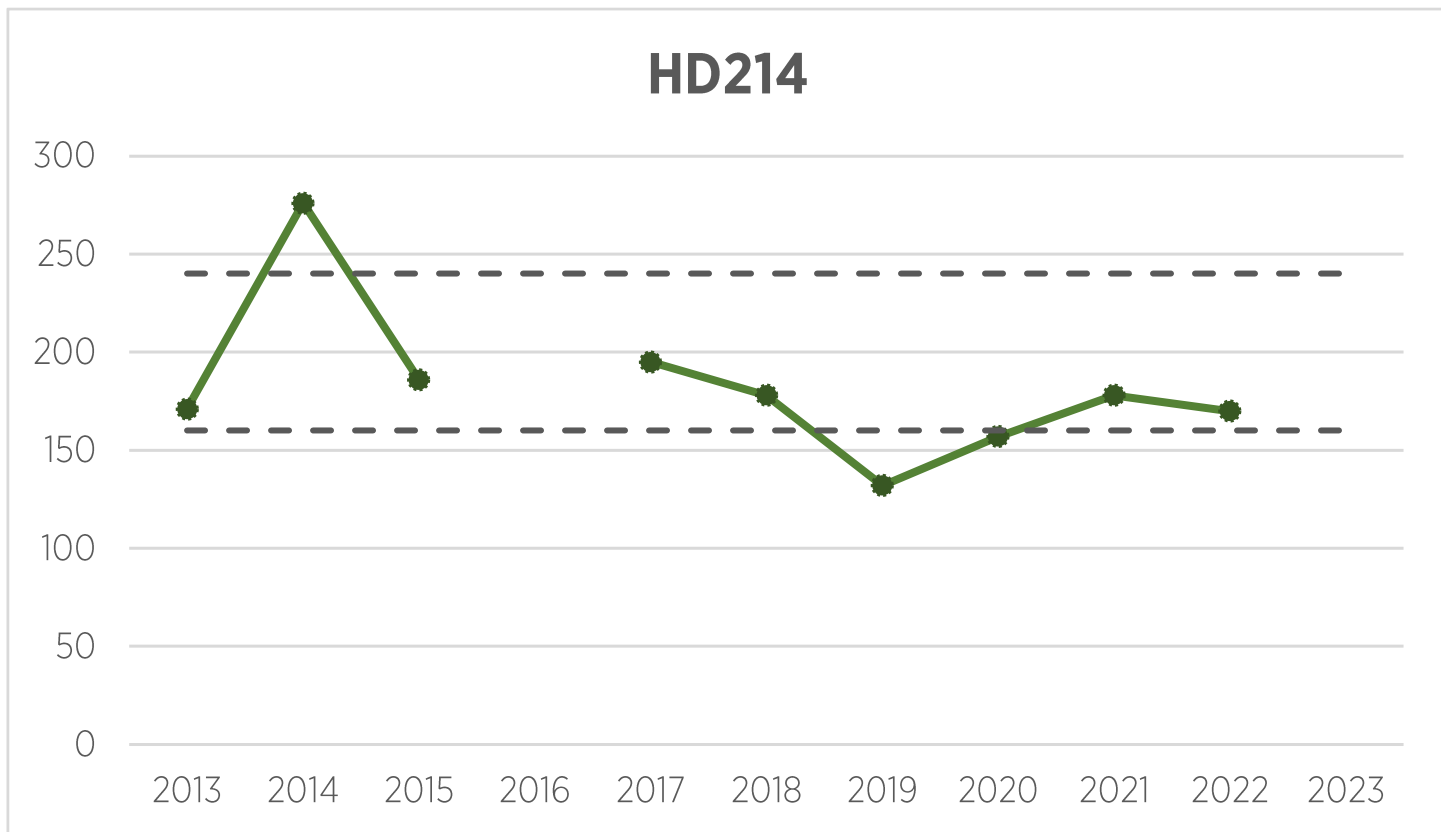
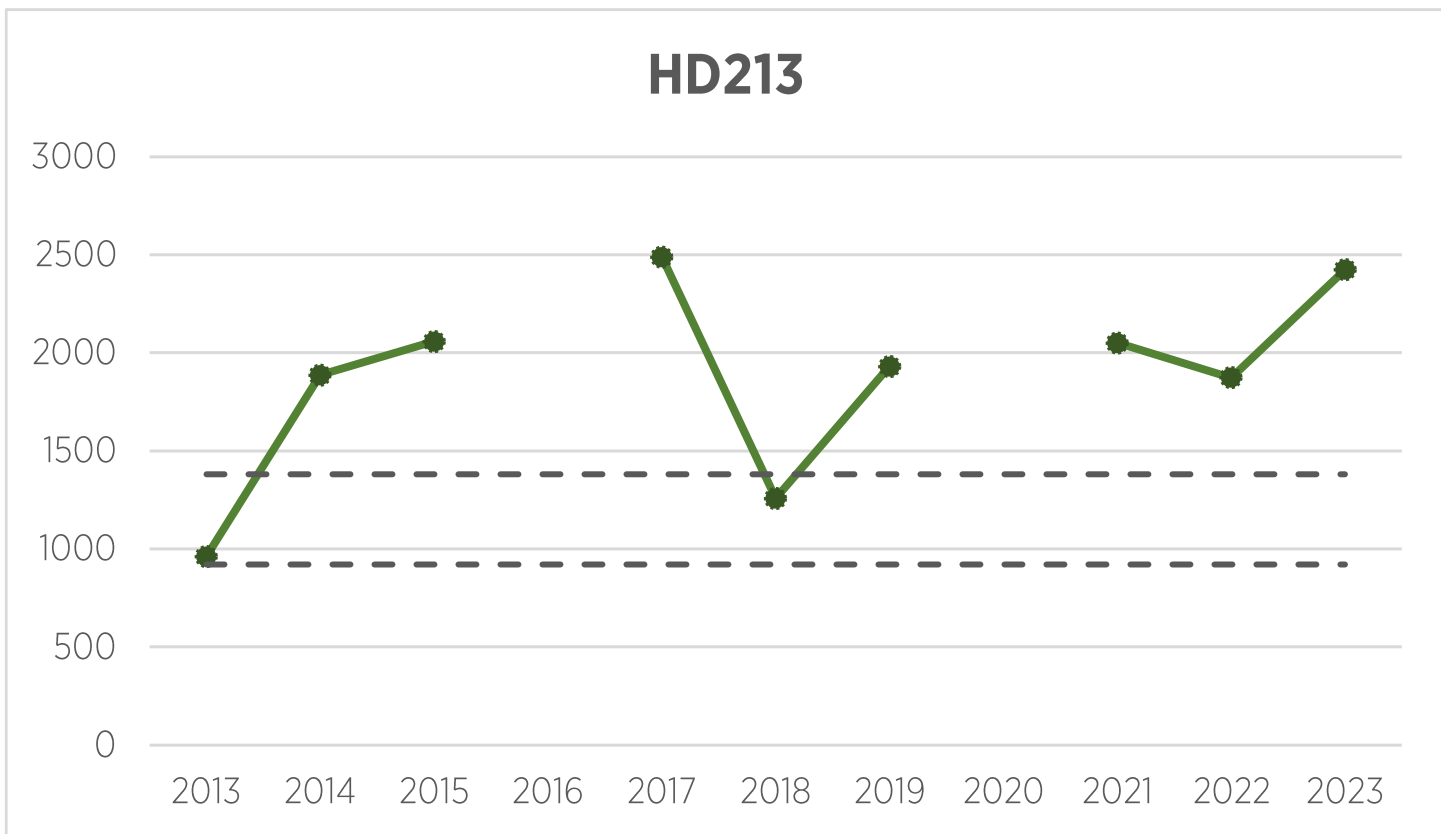
NA = 2023 survey flown in spring so counts are not comparable. Objectives based on numbers proposed for the 2023 Elk Management Plan.

Elk in the northern end of HD210 are relatively isolated from the elk that winter in the southern end.. As a result, these animals were surveyed independently in 2023.

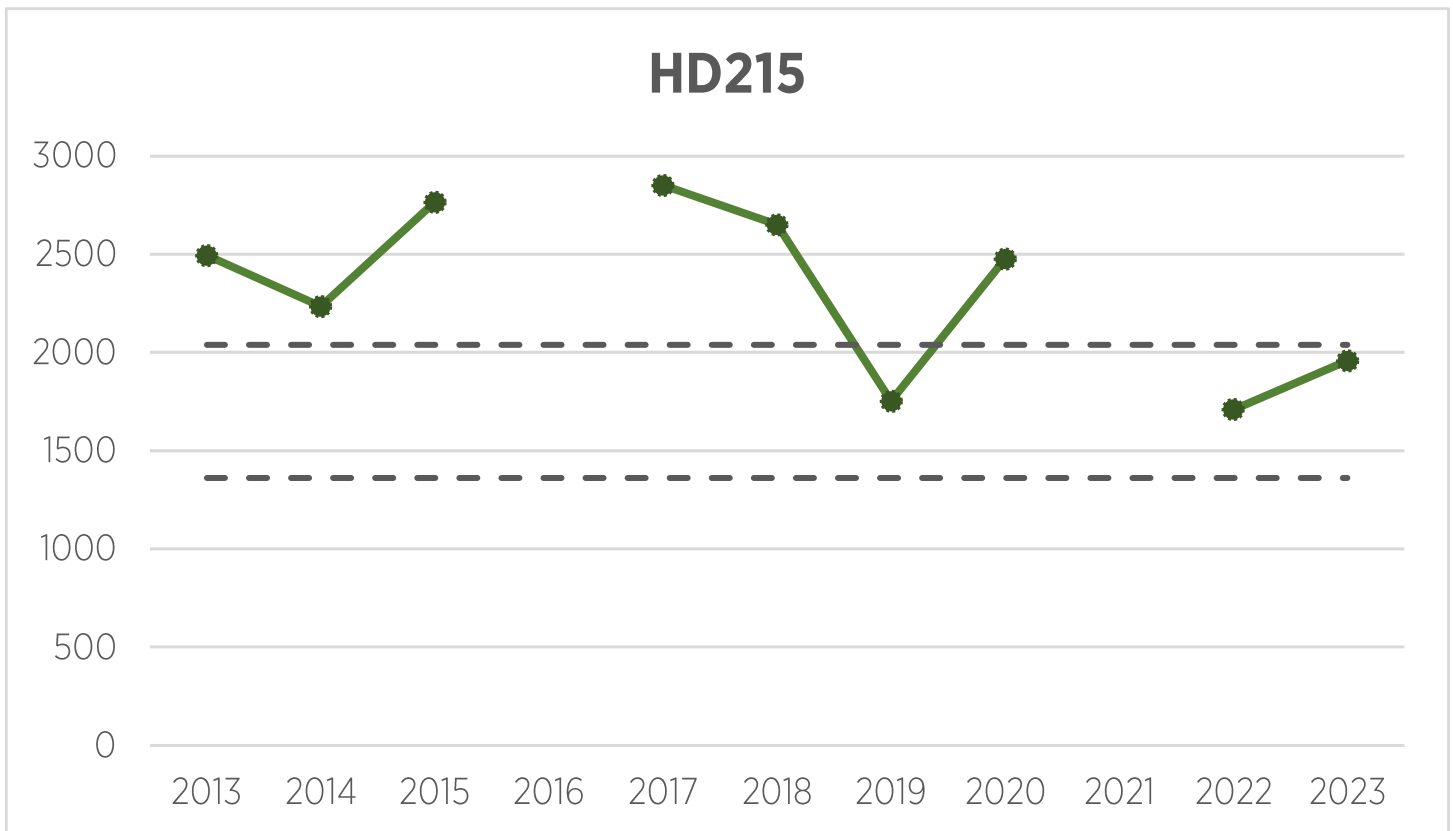


Elk from multiple HDs congregate on winter range in the southern end of the Philipsburg Valley crossing district boundaries. Therefore, all elk in this area were included in a single survey in 2023.

Elk numbers in the northern end of HD213 were slightly higher in 2023 possibly due to movement across the HD217 boundary.

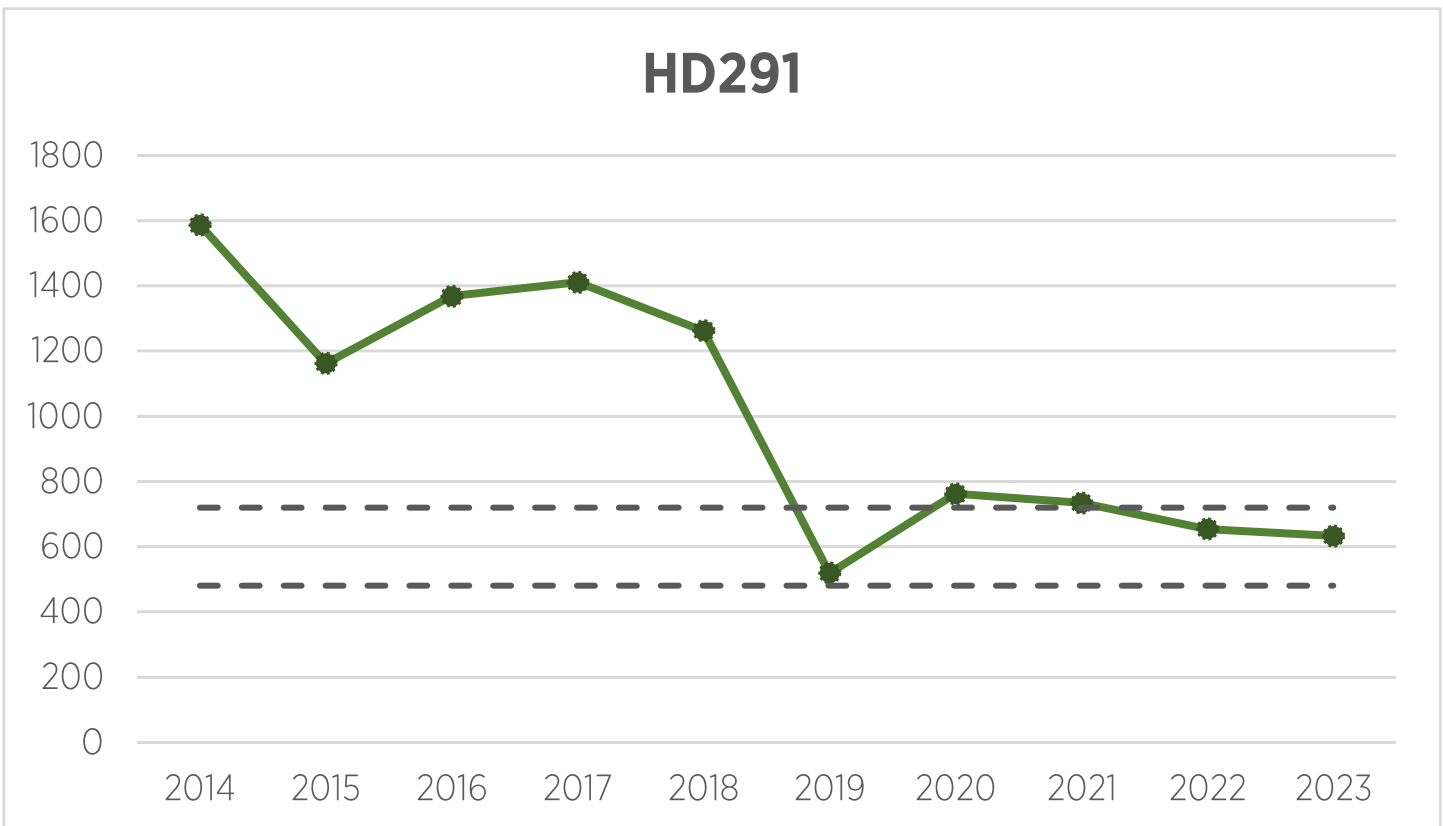
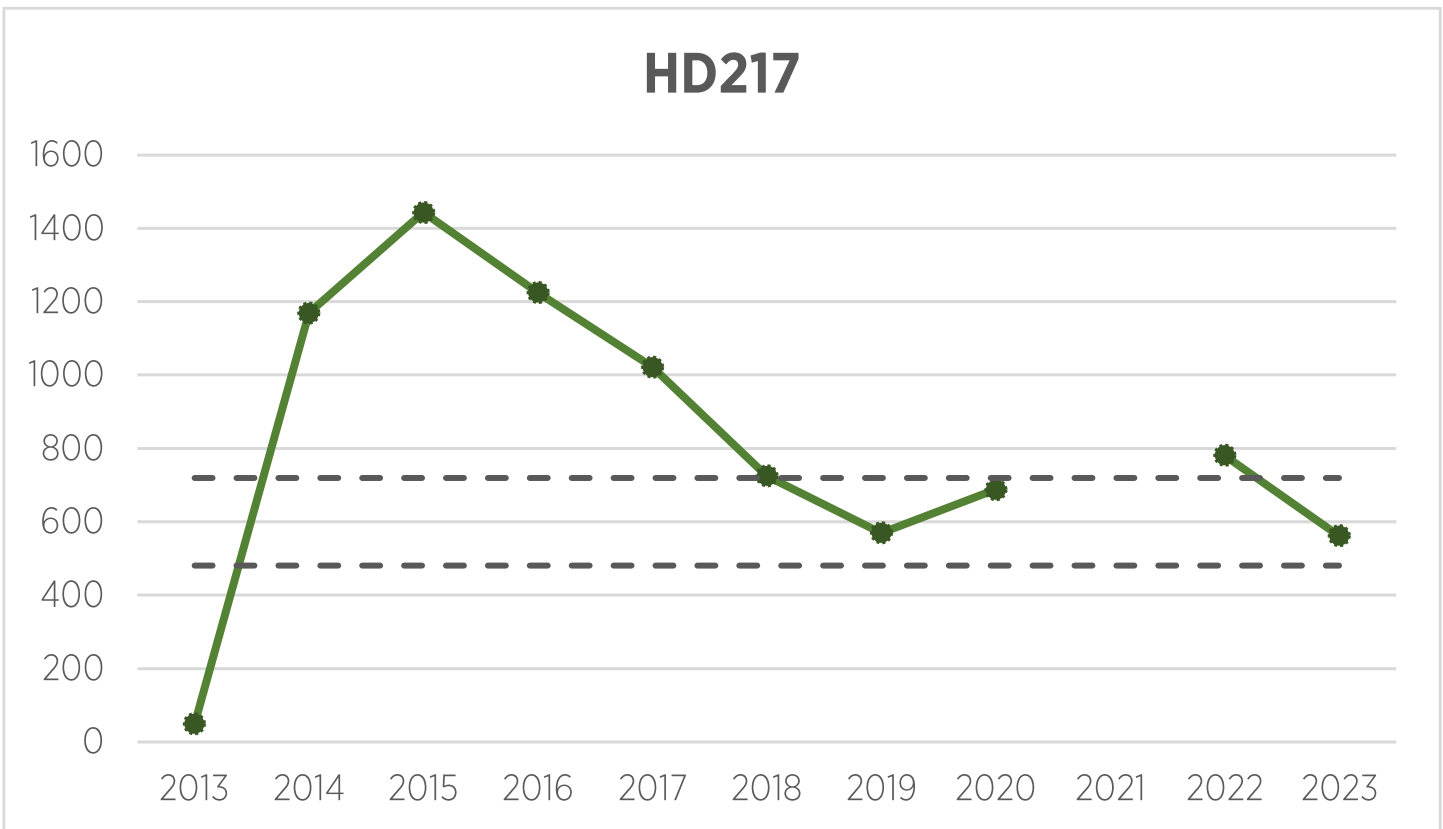


The HD214 survey was not conducted in the winter but during green-up, so it is not included in the trend graph for 2023.



The 2023, most of the elk (1,142) in HD215 were observed on Spotted Dog WMA (pictured above).

Elk numbers in HD217 were slightly lower in 2023 possibly due to movement across the HD213 boundary.



Observations in HD291 in 2023 were consistent with past survey efforts.

Bitterroot *Rebecca Mowry*

Elk counts in the Bitterroot were mixed this year. Due to our cold, wet spring, green-up occurred much later than usual, giving me 2-3 fewer weeks in which to complete my counts.

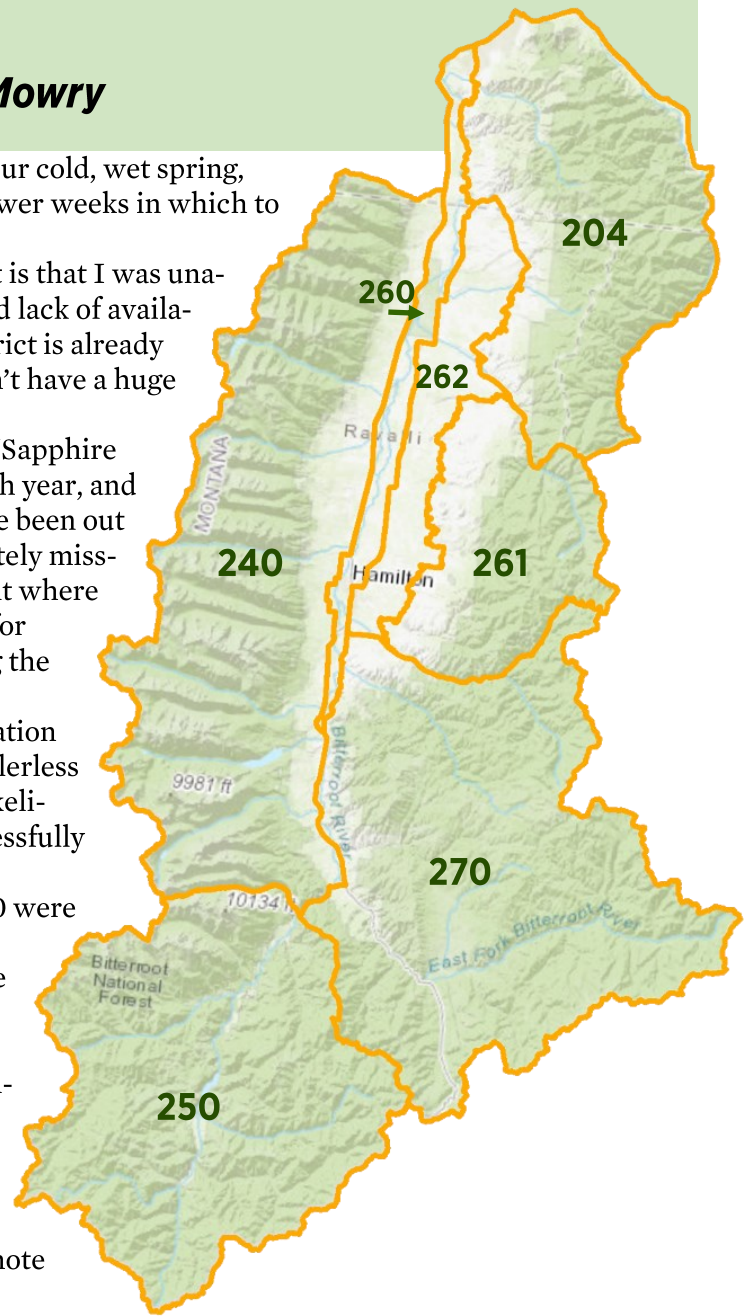
The most unfortunate thing about this year's count is that I was unable to do HD250, due to a combination of late green-up and lack of available aircraft. However, the hunting opportunity in this district is already quite conservative, so one year of missing trend data doesn't have a huge management impact.

We also missed quite a few herds in the proposed "Sapphire EMU" in HDs 204/261. This is the first area we survey each year, and green-up was especially late, meaning the elk may not have been out in the open. One herd of 200 elk, for example, was completely missing on our first flight, then we found them 2 days later right where we expected them to be. Because we were very crunched for time at this point, we couldn't spend the time re-surveying the area to locate more missing herds.

Fortunately, the harvest data (not presented in this publication but publicly available online) shows a very low level of antlerless harvest here and in neighboring HD262, supporting the likelihood that the population of elk is still there, but very successfully hid from us this year!

On the other hand, the counts for HDs 240 and 270 were excellent. We covered HD270 in only 3.5 flights (it usually takes 5-6) and found a near record number of elk. With the proposed shift in objective range for HD270, this puts us over objective there.

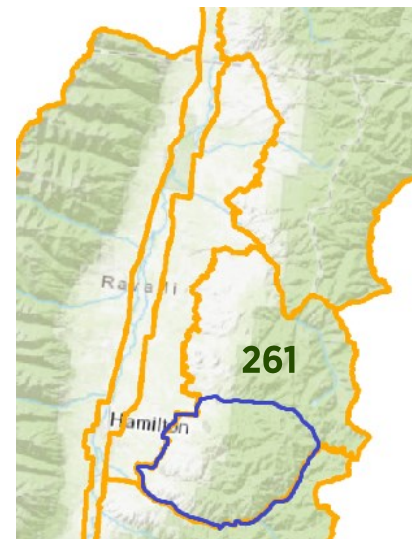
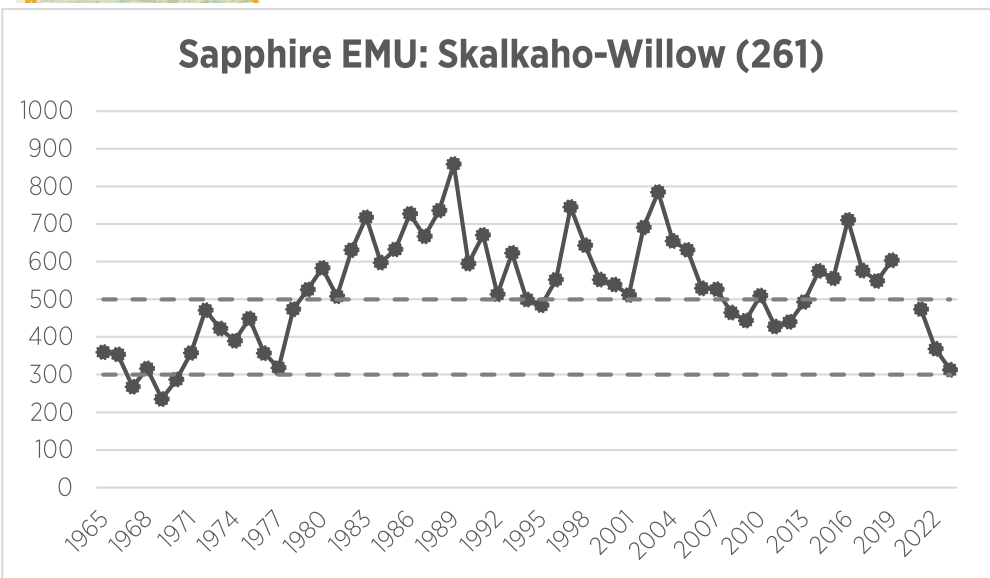
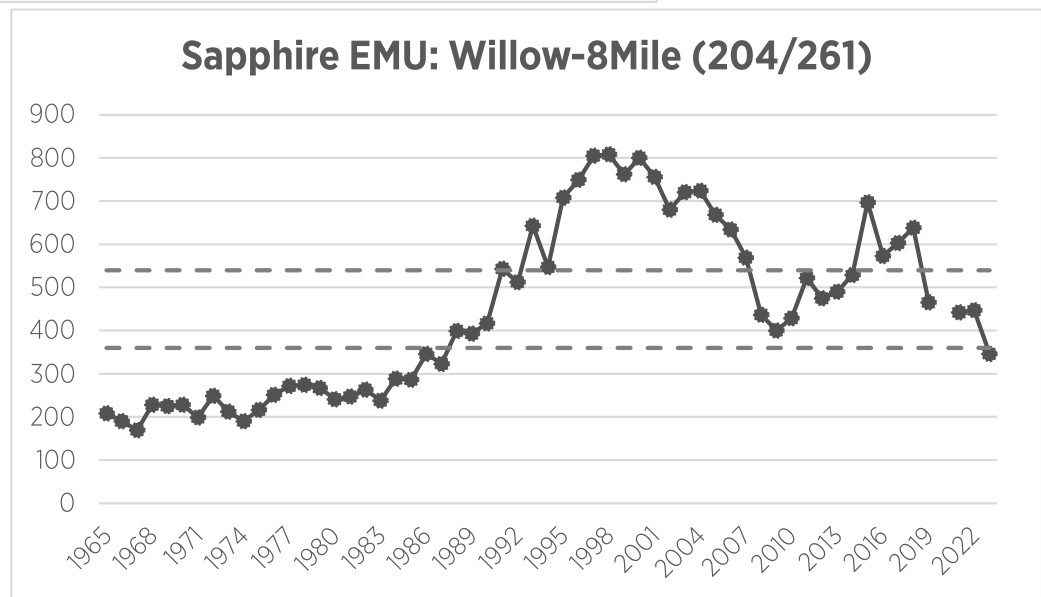
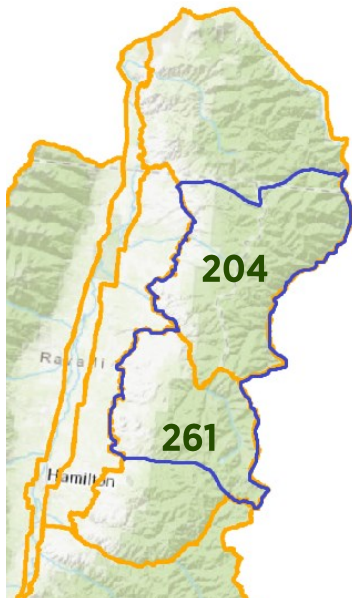
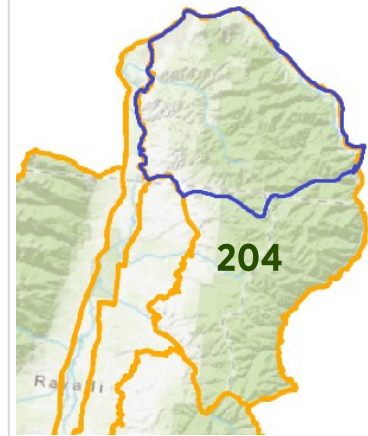
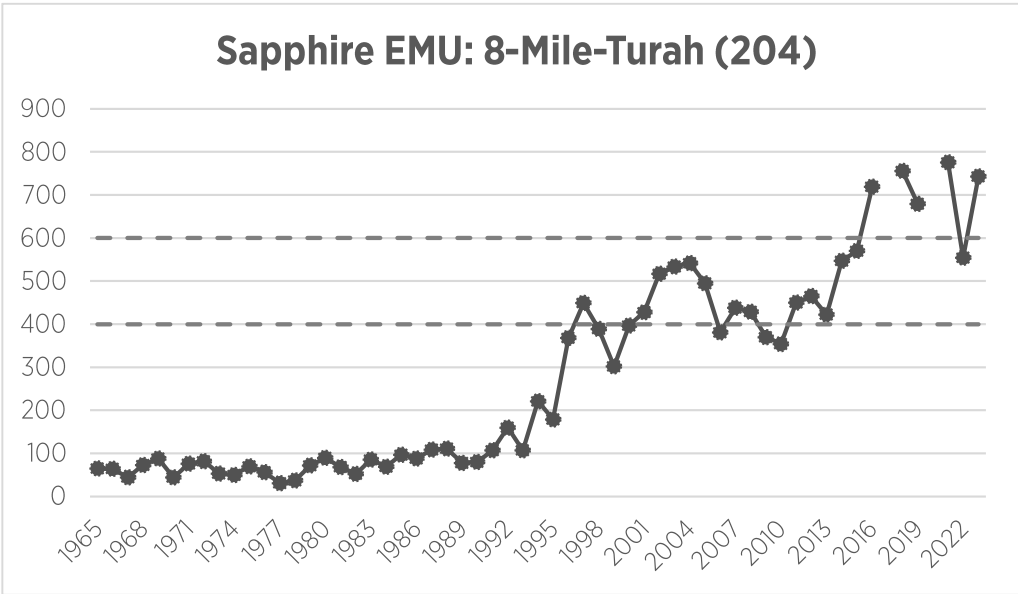
Across the board, bull:cow ratios were within management objectives for each HD. Calf:cow ratios were on the low side, ranging from 10 in HD260 to 25 in HD204. After a frigid winter that started early and lingered late, this is not surprising. Also, the HD260 count is represented by only one herd in the Stevensville area this year (see note for HD260 on page 16).



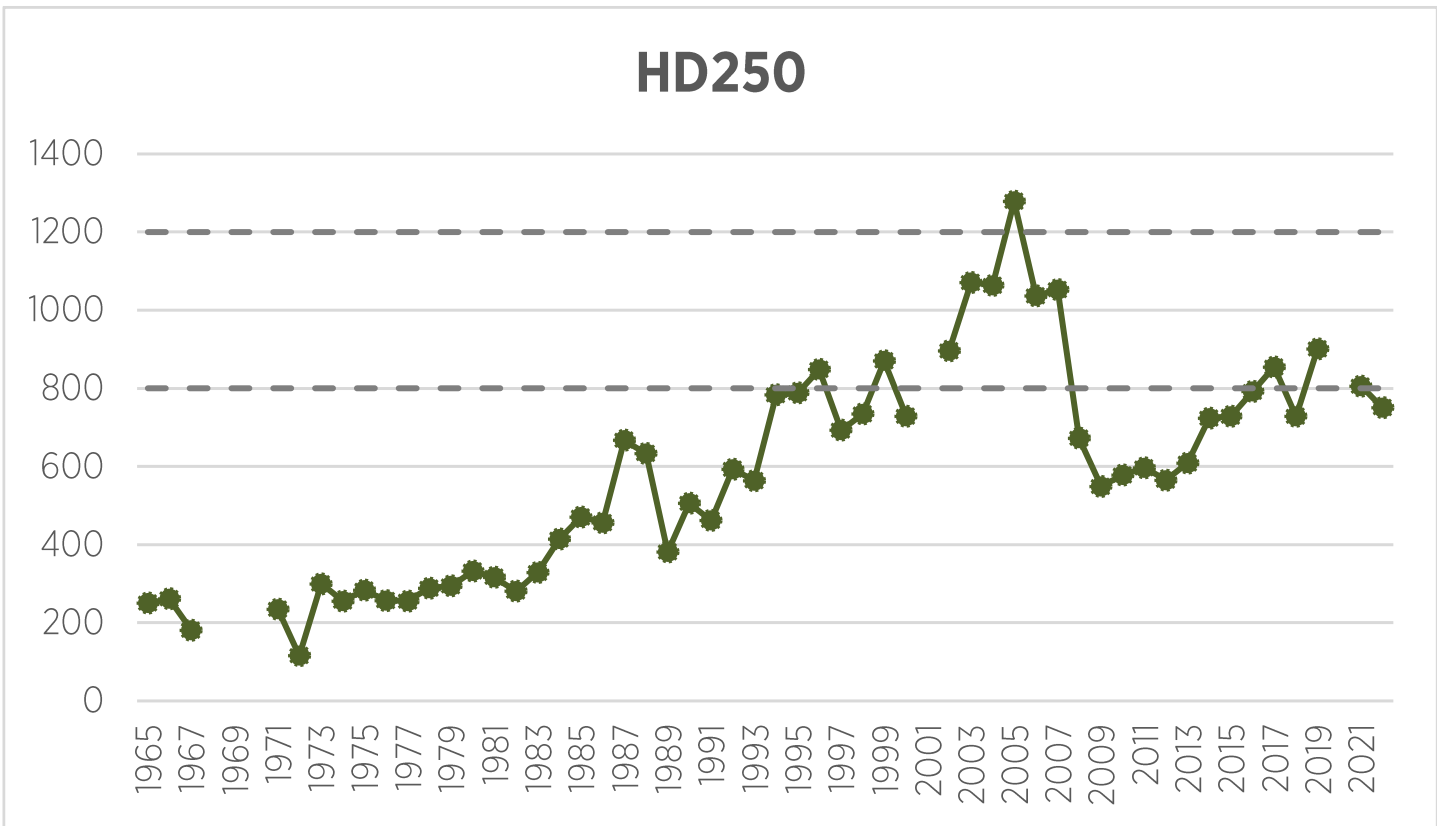
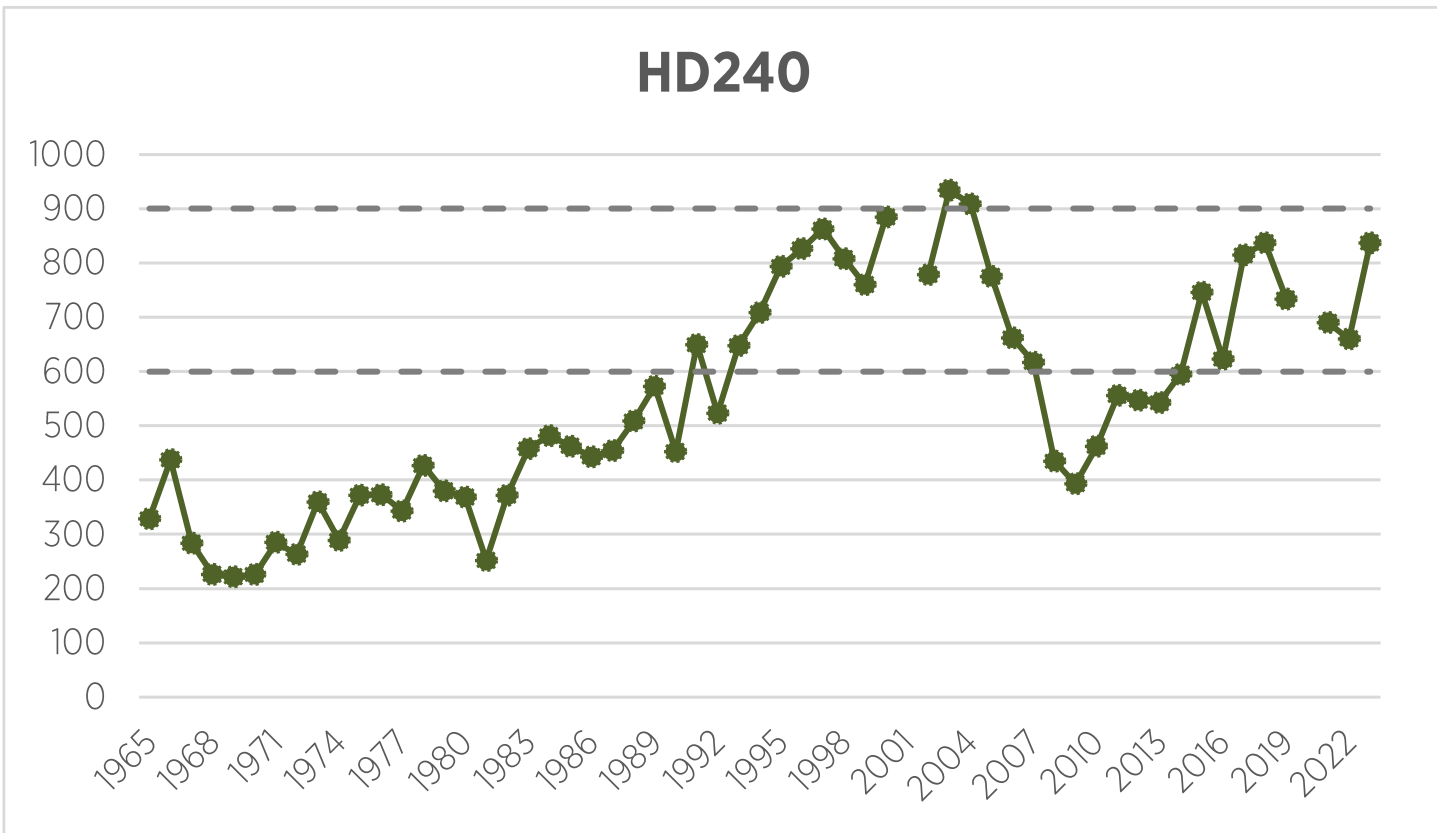
HD	Total	Calf:cow	Bull:cow	2022 count	Objective	Status
204-North	743	0.25	0.32	554	400-600	Above
204/261 Willow-8Mile	346	0.26	1.03	447	360-540	Below
261-South	313	0.20	0.22	368	300-500	Within
240	837	0.20	0.12	660	600-900	Within
250	NS	NS	NS	750	800-1200	Below
260	105	0.10	0.12	205	0-100	Above
270	4554	0.21	0.16	4386	3600-4400	Above

NS = not surveyed this year. Objectives given are for the proposed 2023 Elk Management Plan. HDs 204/261 combined into "Sapphire Elk Management Unit (EMU)" with different objectives for 204-North (Eight Mile to Turah), Eight Mile to Willow, and 261-South (Willow-Skalkaho).

Dashed lines represent upper and lower objective range proposed for the 2023 Elk Management Plan. HD262, adjacent to HDs 204/261, does not have a population objective. Elk observed in HD262 are included in counts for the adjacent HD. Y-axis represents total number of elk counted during aerial surveys.

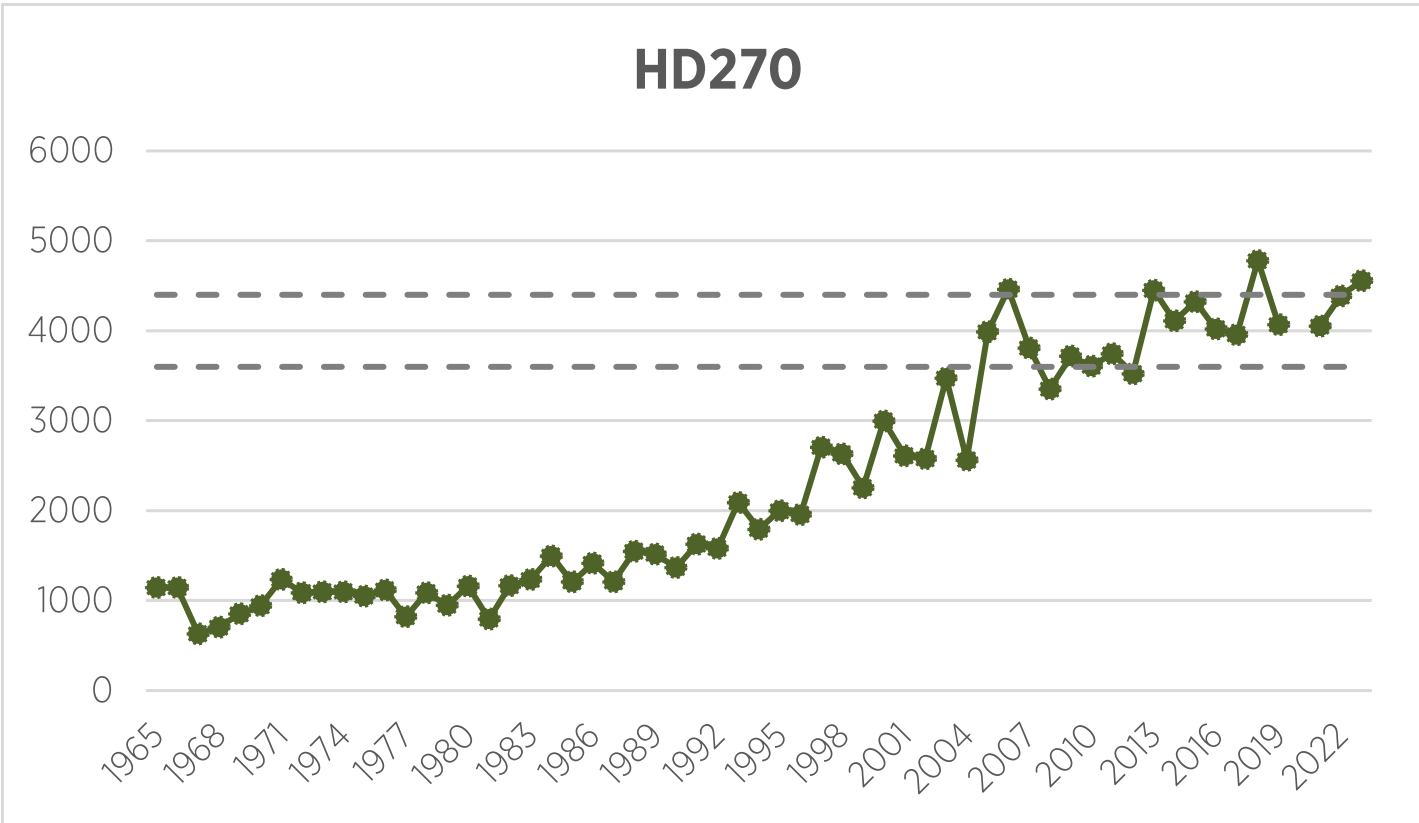
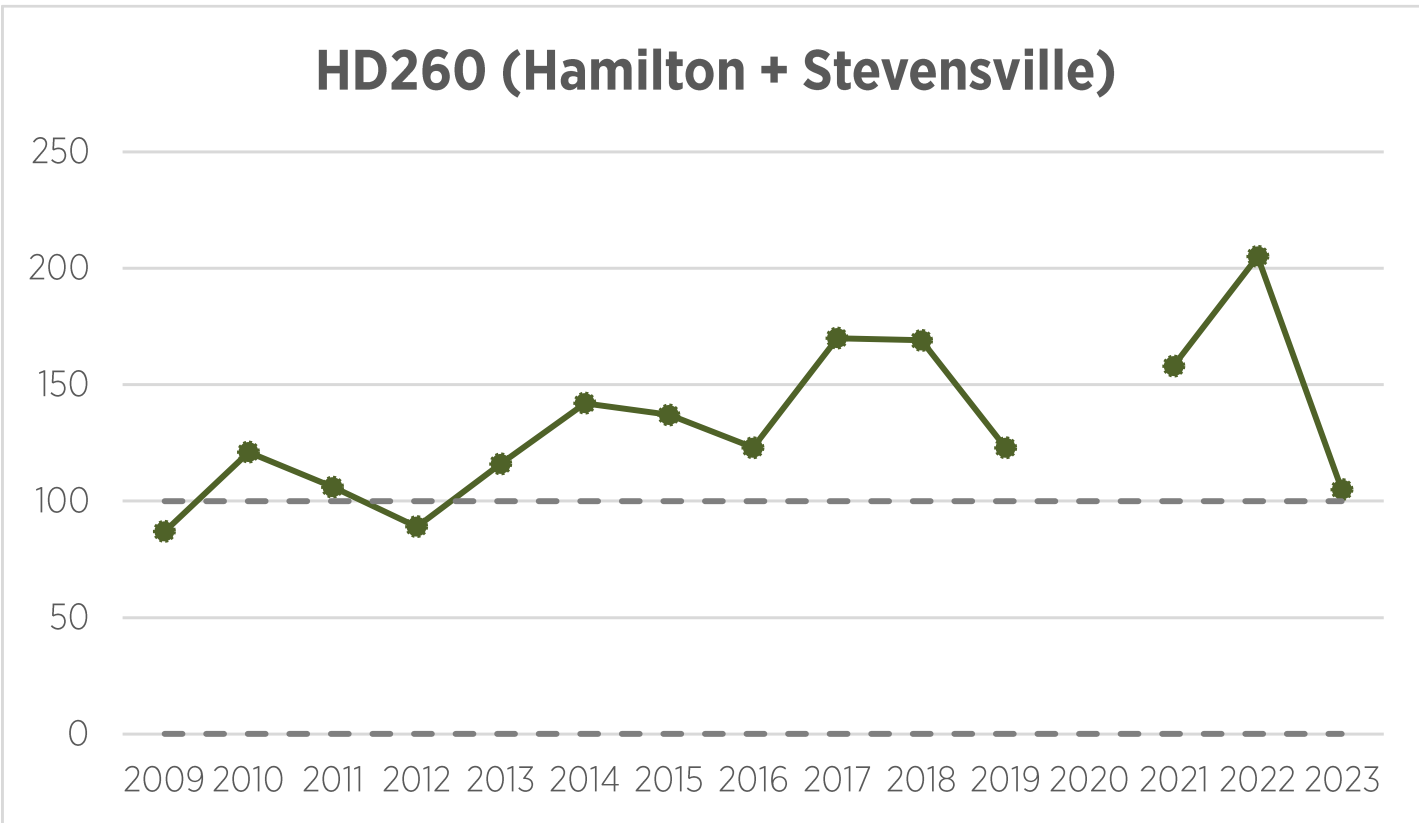


One group of elk was included in HD240's count this year, though ~100 of those elk are most likely associated with the Hamilton river herd. However, no matter which HD we include that herd in, it doesn't affect objective status for either HD. But we think the actual population in HD240 is closer to 750.



HD250 was not surveyed this year. Note objective change from 1400 elk (range 1120-1680) to 1000 elk (800-1200).

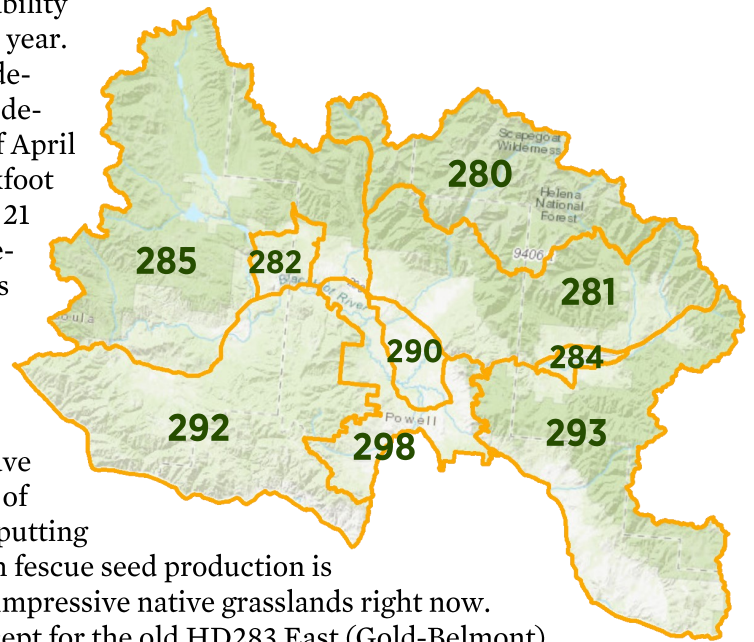
See note for HD240. We think the actual population in HD260 is closer to 200.



The previous objective for HD270 was 3800 elk (range 3040-4560). We are proposing a change to 4000 elk (with a tighter range of 3600-4400, or 10% above/below 4000). The 2023 survey places the population above this objective. Under the previous objective, we would be just 7 elk away from over-objective status. We are very interested in your thoughts on this change.

Blackfoot *Mike Ebinger*

Spring green-up conditions and aircraft availability made for challenging elk surveys in the Blackfoot this year. First, FWP was down a helicopter, placing twice the demand on the remaining aircraft. Second, it was a cold delayed start for spring green-up. The first two weeks of April is the historical “sweet spot” for conducting the Blackfoot spring flights, yet green-up conditions were between 21 and 33 days behind the 30-year average during this period (Figure 1). Even as we rolled into May, conditions were still 2 weeks behind average conditions. When things did start to green-up, they were fast, and elk were on the move and difficult to locate. Although green-up conditions were behind normal, May and June have been good for vegetative growth and we have caught up with, and exceeded, the 30-year average as of June 12. This is a positive sign for elk recovering and putting on fat after a long, cold winter in the Blackfoot. Rough fescue seed production is very high throughout the Blackfoot making for some impressive native grasslands right now.



While we were able to complete all flights except for the old HD283 East (Gold-Belmont), timing of flights was not optimal. Consequently, mature bulls that were not associated with groups of cows and calves were generally difficult to locate. Additionally, the HD 290/298 flight was mostly a bust. Despite flying the historical route, we simply could not locate elk, which may have moved to neighboring districts or wintered elsewhere this year. Although we counted enough elk on this flight to estimate recruitment, totals are not representative of long-term trend in these districts. Moving forward I would like to switch the HD 290/298 flight to a winter survey, as it better aligns with flight timing in neighboring districts (HD293 and HD291) and is more representative of game damage concerns, which were the impetus for creating this hunting district.

Overall, recruitment was below what we would like to see for units that are below objective. Bull:cow ratios were below objective (0.10) in HDs 281 and 292, but this is a function of flight observability this year and objective status using a 3-year average will be more informative for trend assessment.

HD	Total	Calf:cow	Bull:cow	2022 count	Objective	Status [§]
280*	NS	NS	NS	NS	NA	NA
281	363	0.19	0.08	463	500-700	Below
282/285	583	0.24	0.31	863	900-1100	Below
284/293	637	0.28	0.22	432	600-900	Below
290/298	297**	0.31	0.10	1009	480-720	Above
292	473	0.17	0.02**	540	740-960	Below

*HD280 is wilderness and not winter range, thus it is not surveyed. **Not indicative of trend. [§]Based on 3-year average.



2023 Accumulated Growing Degree Days (Lat: 47.024, Lon: -113.117)

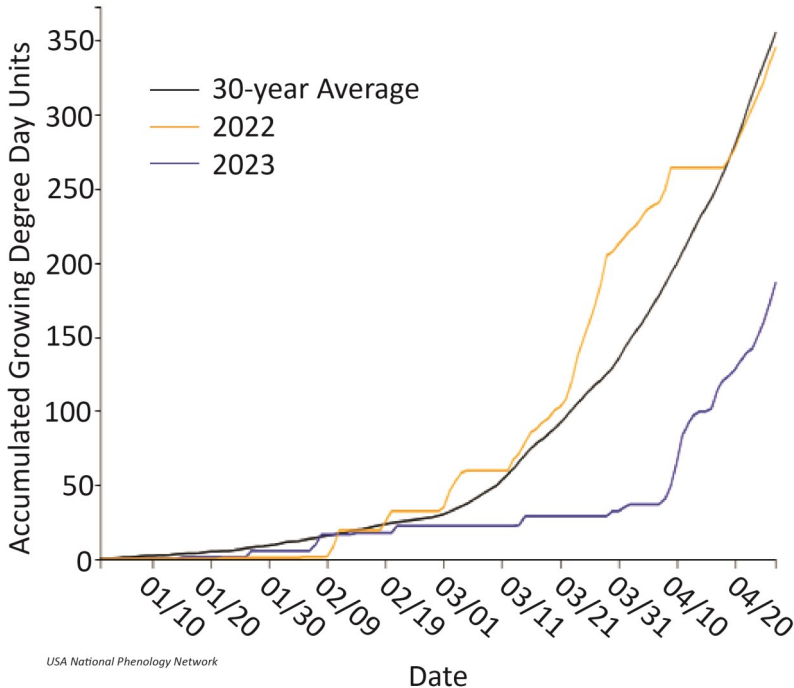
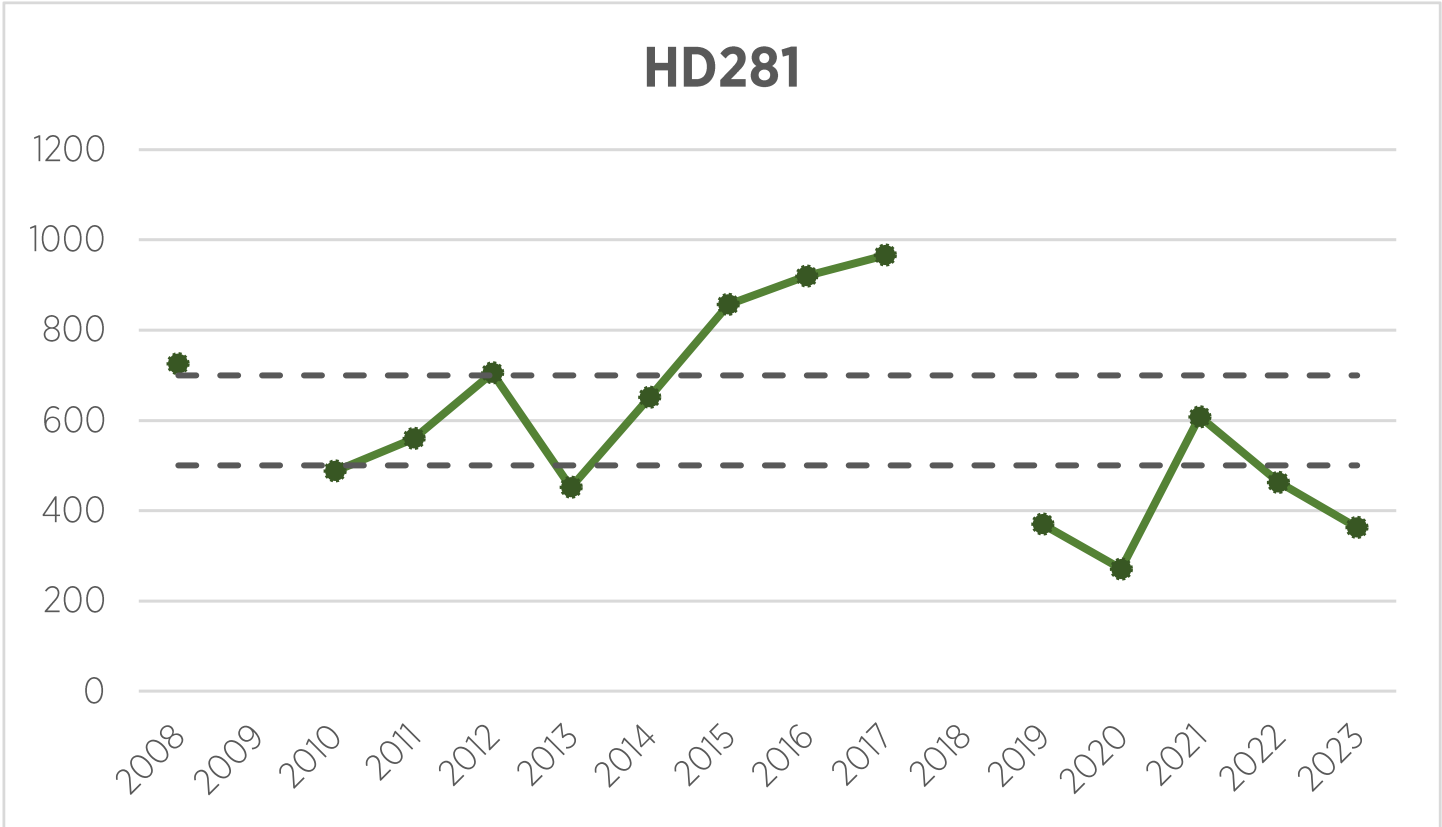
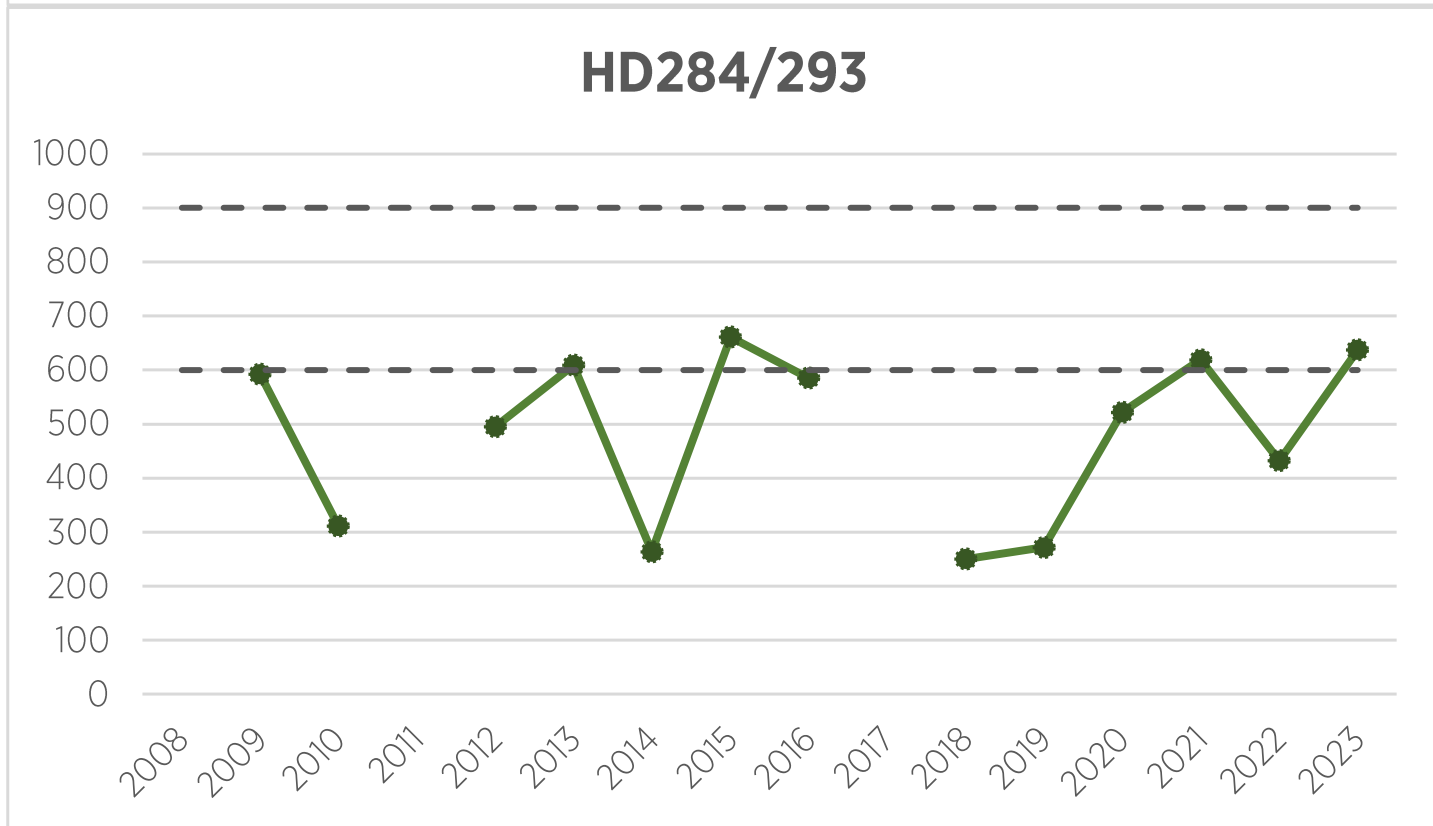
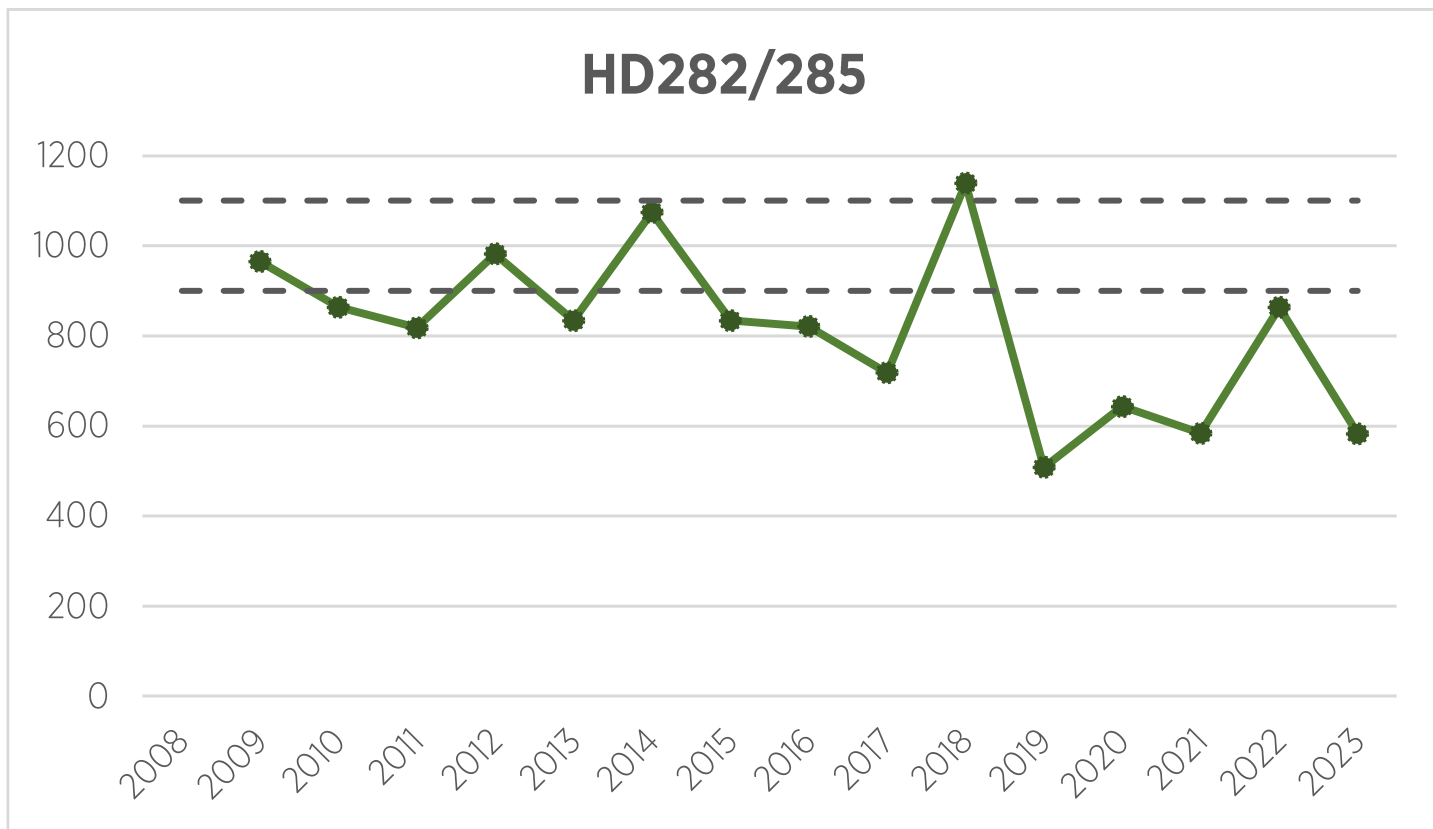


Figure 1. The blue line shows the daily accumulation of heat (also known as “Growing Degree Days”) for 2023 in the Blackfoot watershed. Black and orange lines show the 30-year average and last year’s trends for the same period.



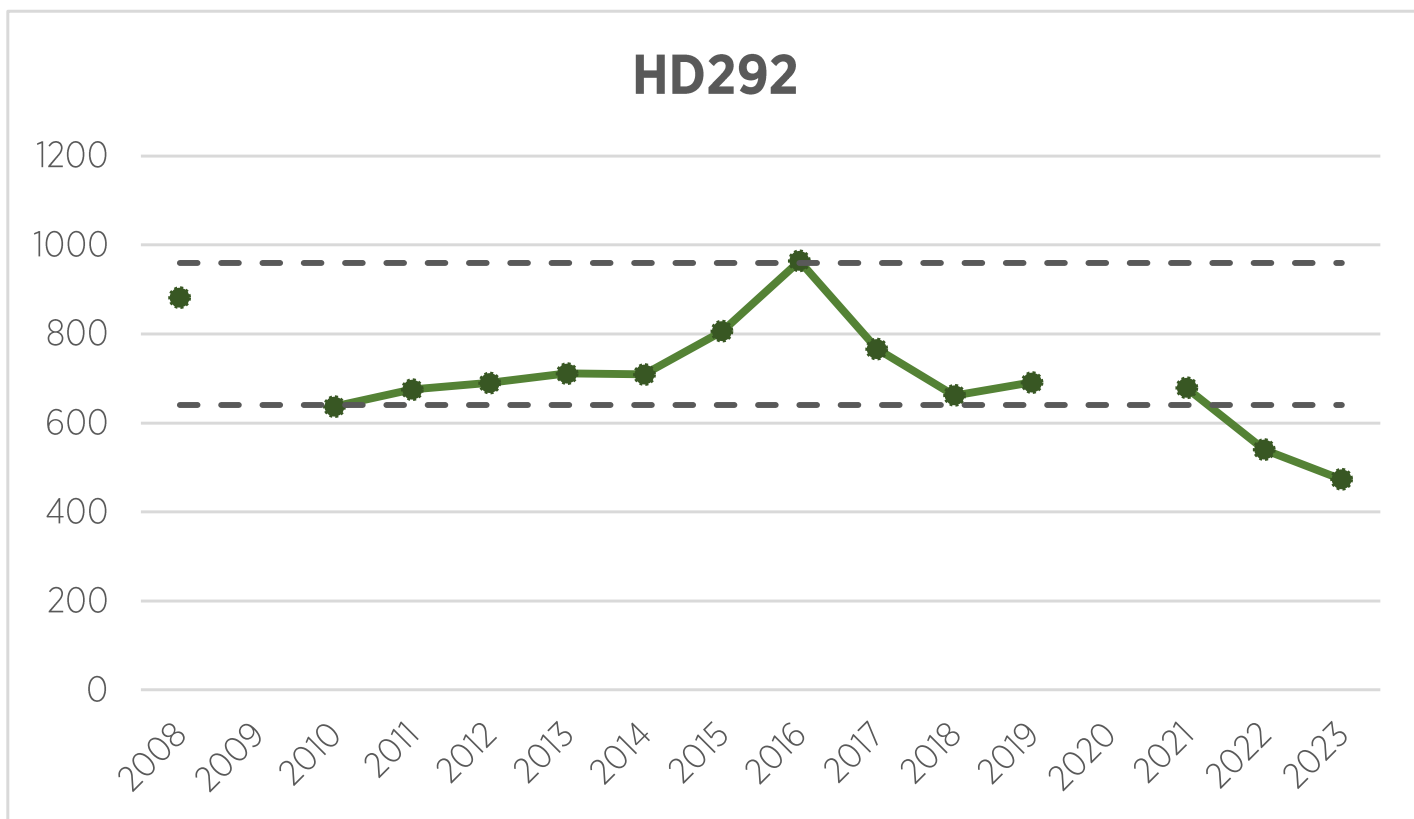
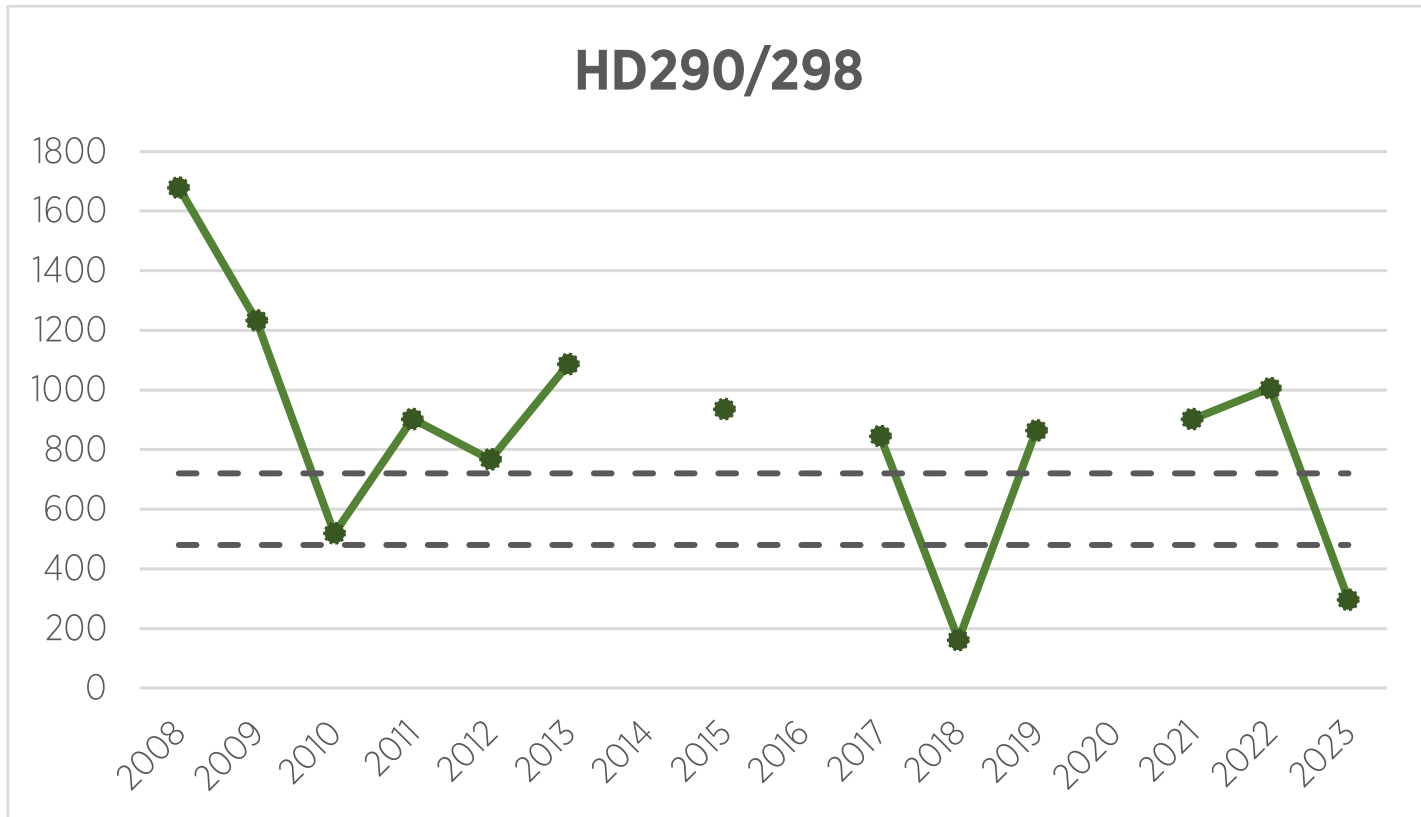
Very few elk observed in the west portion of the district (west of Kleinschmidt flats) and difficulty in finding bulls. Y-axis represents total elk counted during aerial surveys. Dashed lines indicate upper and lower objective range according to the proposed 2023 Elk Management Plan.

Higher numbers of elk on private land outside the survey area were reported over winter which may explain the drop in elk numbers from 2022 and the high bull:cow ratio observed during this flight. This may have been a function of early snowfall and the game range being open throughout the general rifle season instead of closing in early November.



Elk were timbered up in the norther section of the unit and bulls were difficult to find. This is a large district and in future years we plan to split the survey into two flights (north unit and south unit) to maximize bull observability during the early morning hours.

We definitely missed the majority elk on this flight and total count is not indicative of trend. We could not locate elk in the southern part of the district where large groups are normally found. There was a lack of tracks in the snow suggesting that elk may not have been present for some time.



We had difficulty locating elk in the Blackfoot watershed portion of HD292 and counted fewer elk than normal in this section. This may have been due to the delayed survey timing, which was almost a month later than historic flight dates.



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Montana Fish, Wildlife & Parks, through its employees and citizen commission and board, provides for the stewardship of the fish, wildlife, parks, and recreational resources of Montana, while contributing to the quality of life for present and future generations.

THE **OUTSIDE** IS IN US ALL.



How many elk? About 600! This herd was photographed just southeast of Hamilton in HD270 in spring 2017.