

Montana Fish, Wildlife & Parks Region 2 Wildlife Quarterly

July 2021



Elk in the Garnet Mountains on July 4, 2021.

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Montana Fish, Wildlife & Parks Region 2 Wildlife Quarterly

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The Region 2 Wildlife Quarterly is a product of Montana Fish, Wildlife & Parks; 3201 Spurgin Road; Missoula 59804. Its intent is to provide an outlet for a depth of technical information that normally cannot be accommodated by commercial media, yet we hope to retain a readable product for a wide audience. While we strive for accuracy and integrity, this is not a peer-refereed outlet for original scientific research, and results are preliminary. October 2015 was the inaugural issue.

State of the Elk SPECIAL

May, but we've arrived at a better arrangement lately, with time built in for biologists to regain their land legs before presenting results to the public.



Every spring, we get a call or email from *Hellgate Hunters & Anglers*, a Missoula-based, nonprofit organization "conserving Montana's wildlife, wild places, and fair-chase hunting and fishing heritage."

And with that call, FWP wildlife biologists are reminded that the job's not done until the paperwork's finished. Databases and charts from previous years are dusted off and updated with the latest elk counts, and pictures from last year are replaced with the best ones from this year.

There were times in the early years when it felt like the *Hellgate Hunters & Anglers* (HHA) were waiting on the airstrip for biologists to return from their last flights in

Nowadays, the "State of the Elk" address, originated and sponsored by HHA, is a June event, attended by HHA members and the public. This year's presentations of elk counts by FWP biologists was at 6:00 P.M. on June 22 at Western Cider in Missoula.

Being an opportunistic lot, we've learned to repurpose the graphs that biologists prepare for their State of the Elk presentations for also publishing a special issue of the Quarterly.

We invite you to inspect FWP's latest elk survey data in the pages herein.

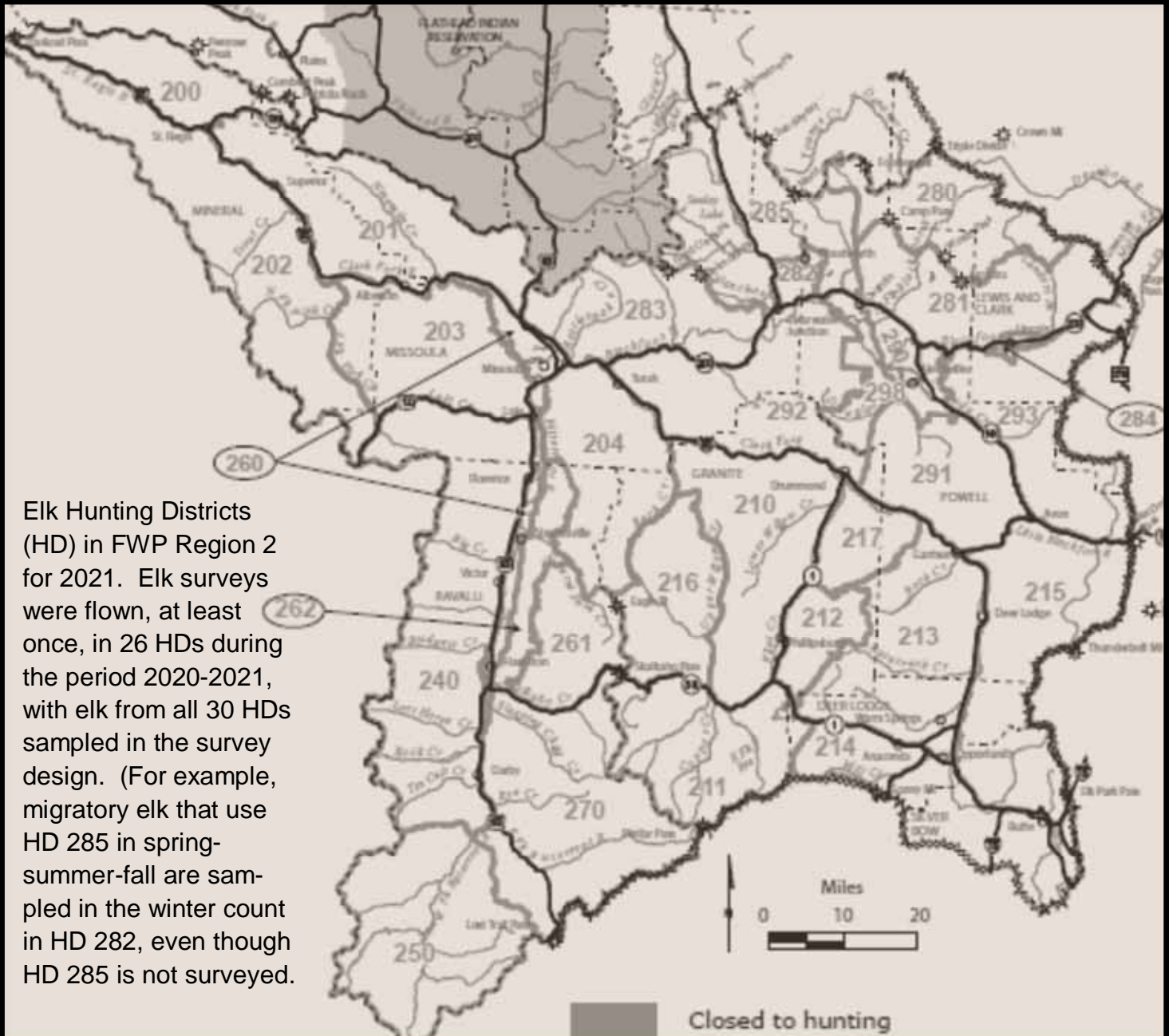
It's the next best thing to greeting the sunrise in the back of a Super Cub yourself.



Elk cresting glacial moraine in the Blackfoot Valley on April 17, 2021.

Region 2 Aerial Elk Surveys

FWP pilot Trever Throop flying surveys.



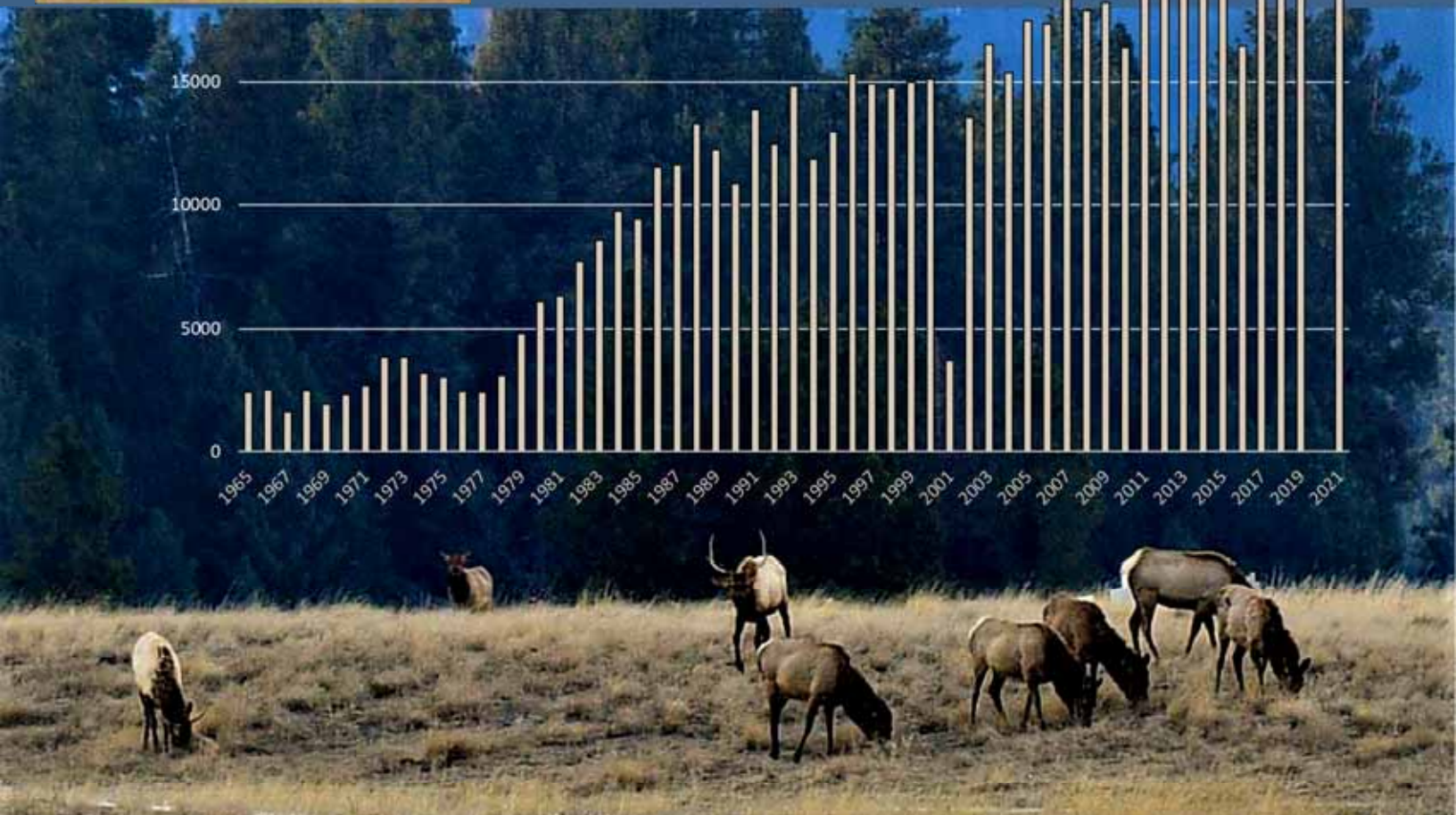
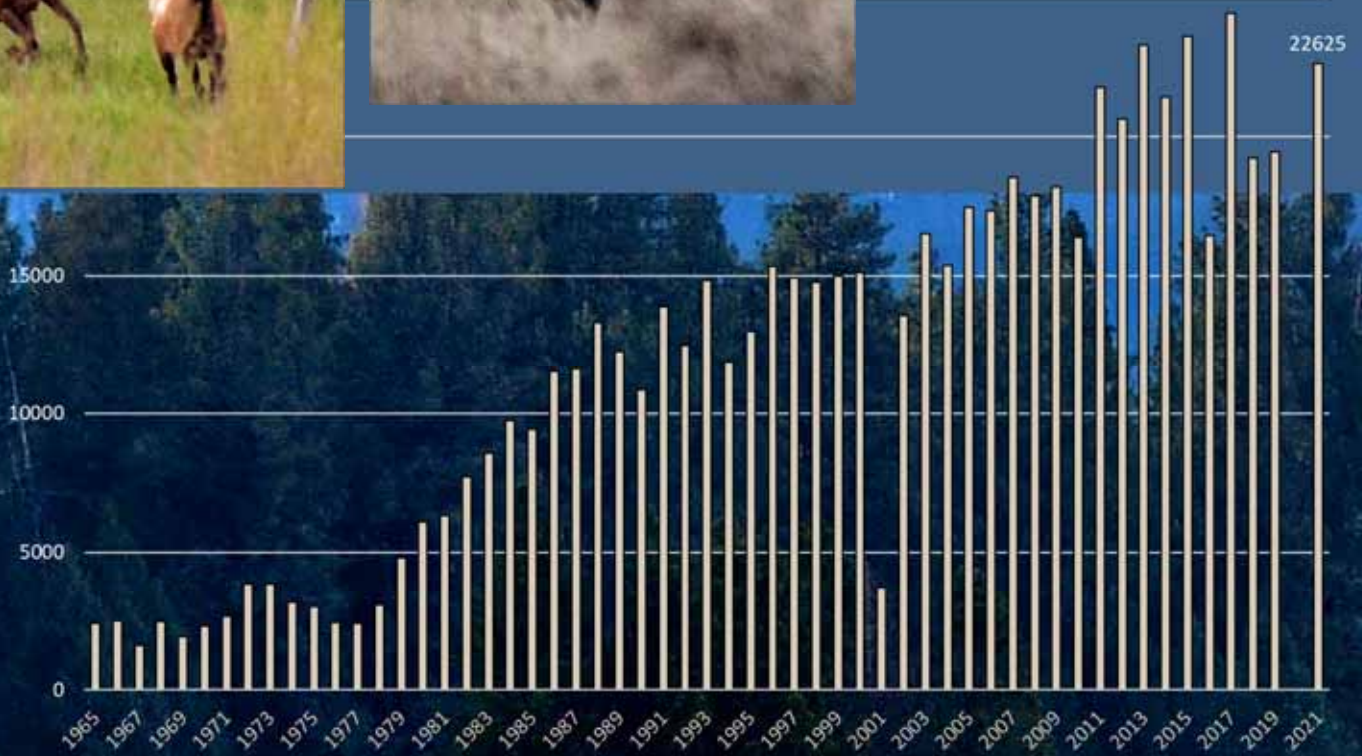
Elk cresting glacial moraine in the Blackfoot Valley on April 17, 2021.



Region 2 Aerial Elk Survey Trends



1965-2021



Biologists counted 20,952 elk in 2020-2021, up 8% from 2019. Most HDs in the Upper Clark Fork were

not surveyed in 2021, so surveys of those HDs from 2020 were carried over into the 2021 total.

Anomalies in Pigmentation

Leucism is a lack of pigmentation in birds and mammals, such as in the adult female elk (below) that pales in comparison to the rest of the herd. A genetic mutation is the cause of leucism, which differs from albinism. Albinism involves a complete loss of

melanin, whereas leucism is a partial loss of pigmentation. Look closely below and it's easy to see brown coloration around the eyes, ears, nose and belly of the leucistic elk. This elk was observed near Bearmouth on 5 January 2020 and, presumably, one year

later in the same area on 31 January 2021.

5 January 2020



The collection of photographic evidence is as often a matter of luck as it is one of intent. Our photographing of a leucistic elk in 2021 was an event that we were aware of while in the field, but the picture of a leucistic elk in 2020 was a surprise that we first discovered while searching the FWP Region 2 photo gallery for images to illustrate this *Quarterly*. You can bet that we'll be looking hard for leucistic elk in that same area in January 2022 to see if we can make it three years in a row.

31 January 2021



Is it really the same leucistic elk in both years? The coloration pattern is remarkably similar, after accounting for the different lighting between the two pictures. As mentioned before, the location is effectively the same, along with the time of year.

Leucism is inheritable if both parents carry the mutation, so it's possible that there are two or more pale elk in the herd. Or that someday there will be.

Pigmentation Matters in Elk Surveys. FWP biologists rely on differences in coloration to distinguish bulls from cows and

31 January 2021



calves during spring surveys when antlers are shed. Bulls are more buckskin-colored than cows or calves, which means that the leucistic cow could be mistaken for a bull if only a quick look from an aircraft is available. However, bulls have dark stockings, which the frosty cow does not. A spike bull is visible in the middle picture (above), for comparison, and is the only bull in the bunch.

Fly Now

Fly your annual elk surveys “now,” when these environmental conditions express themselves.



FWP pilot Trever Throop on May 27, 2016, by Nick DeCesare.

First Green-up

Be in the sky when the golden eagle (right) sees its shadow on green grass. Elk are starving for nutritious, green forage after a long winter of slim pickings, and 75% or more of the cows and last year’s calves will feed out in the open and be available for counting in the first and last hours of daylight.



Golden eagle in French Basin on May 1, 2021.

Snow in the Timber

In early spring, when there’s a reasonably good snowpack, green-up is available mostly in the open, if not only in the open. If elk are going to feed on the green-up, they are concentrated in the open where a pilot and observer can count them, and they will continue to congregate in the open until the snow melts and the grass starts to green up under the trees..



Spike bull elk along Woodworth Road on April 17, 2021.

First Ground Squirrels

The first ground squirrels are a good indicator of flight timing for elk surveys as well as for hunting by red-tailed hawks. Other indicators we’ve heard about are the first buttercups blooming and lawnmowers revving.



Red-tailed hawk with Columbian ground squirrel on April 17, 2021 in the Blackfoot.

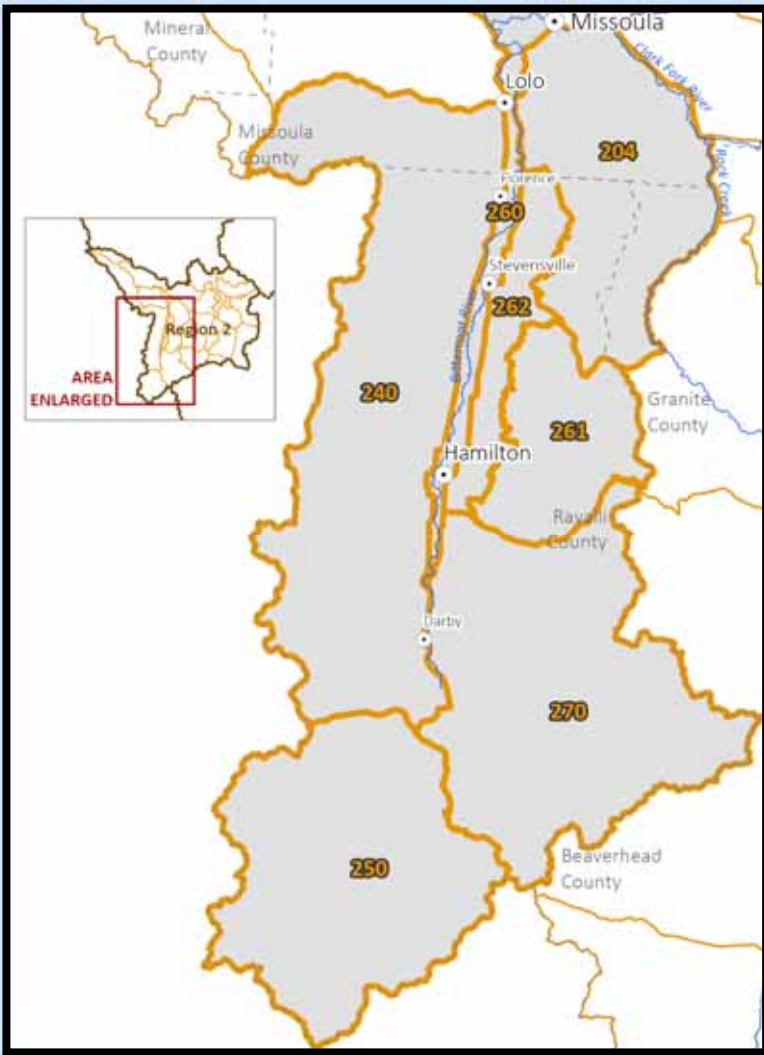
Snow and Cold

While spring green-up offers the only chance to count elk in forested elk country, elk in eastern Region 2 can be counted in winter. Especially when snow is deep and temperatures dip below zero, our eastern elk concentrate in big groups, like here in Hunting District 210 in 2021, while their cousins in western Region 2 withdraw deeper under cover.



Elk in HD 210 on February 11, 2021. Julie Golla photo.

Bitterroot Elk Surveys—Rebecca Mowry, Biologist



Bitterroot Elk Trend 1965-2021



Bitterroot Elk Surveys Hunting District 204



Elk in the North Sapphires on January 24, 2021.

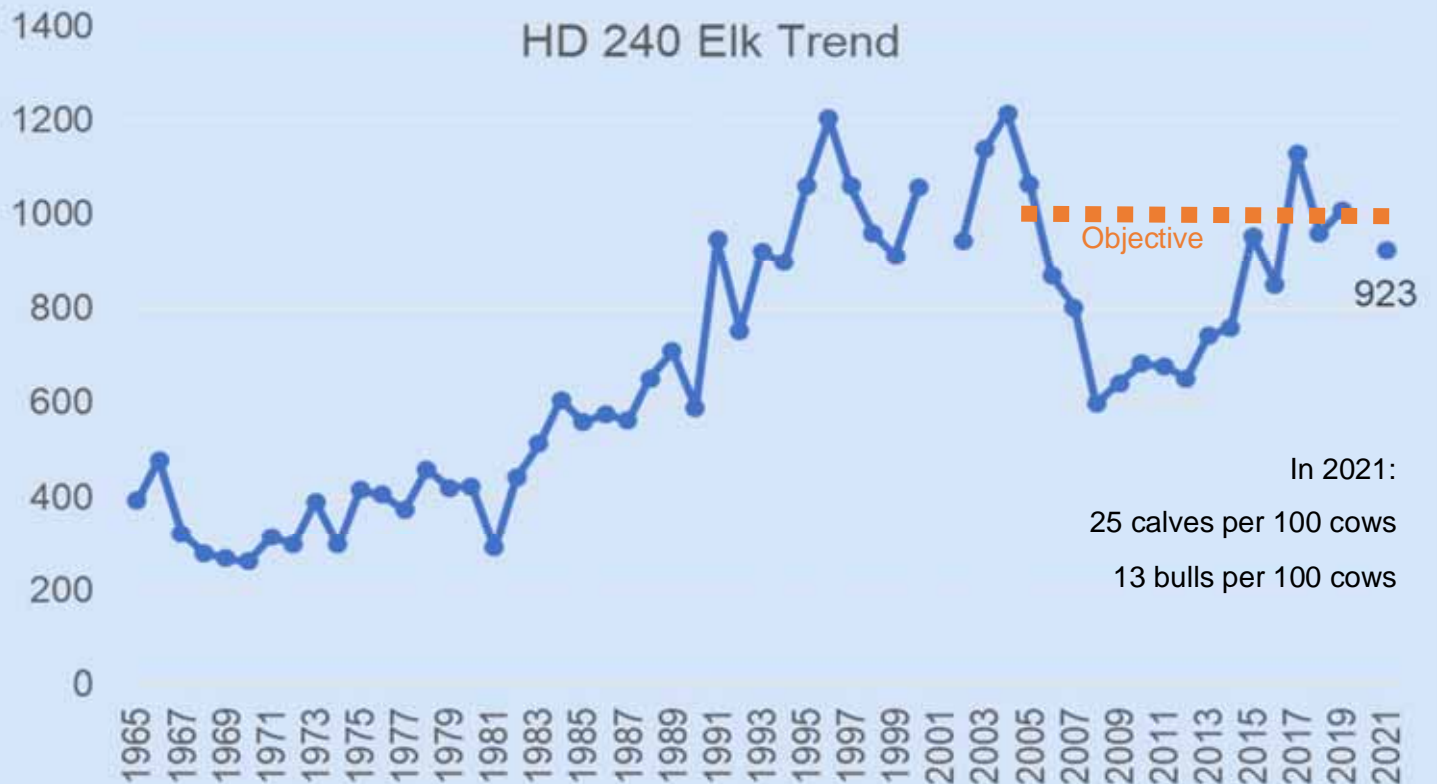
HD 204 Elk Trend



Bitterroot Elk Surveys Hunting District 240



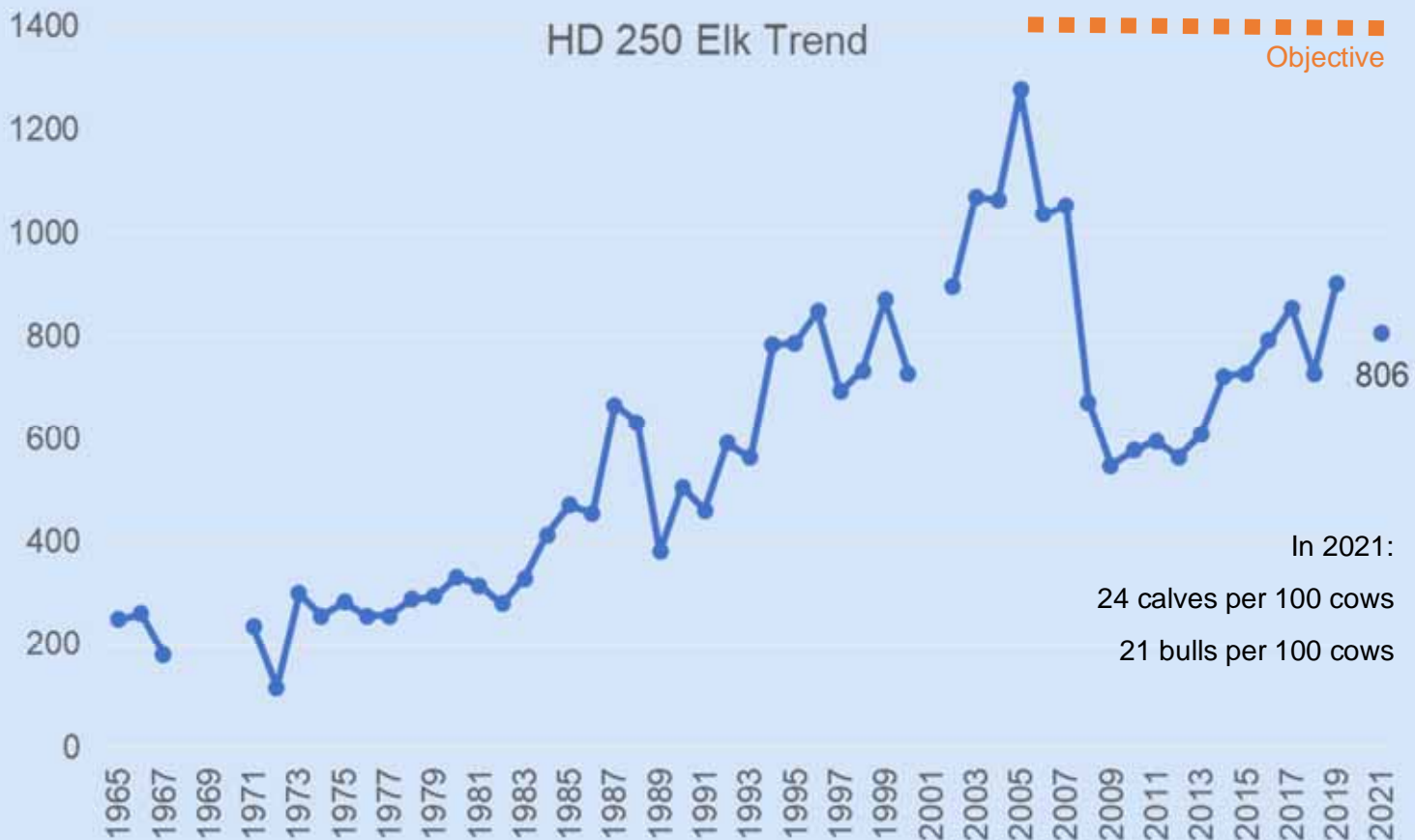
Elk along Highway 12 in HD 240 on August 5, 2017.



Bitterroot Elk Surveys Hunting District 250



Aerial survey for elk in the West Fork of the Bitterroot, by Rebecca Mowry.

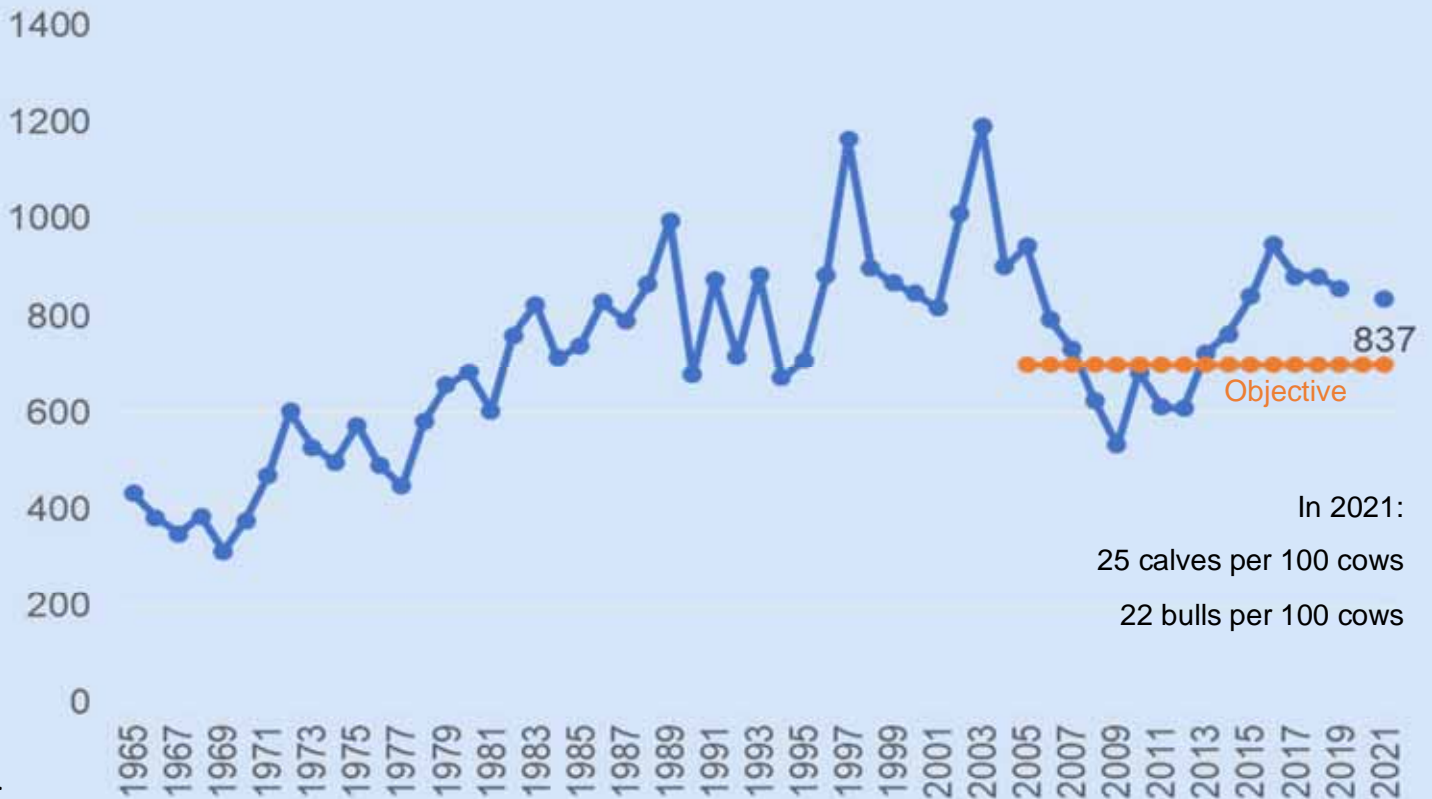


Bitterroot Elk Surveys Hunting District 261



Aerial survey of elk in HD 261 by Rebecca Mowry.

HD 261 Elk Trend

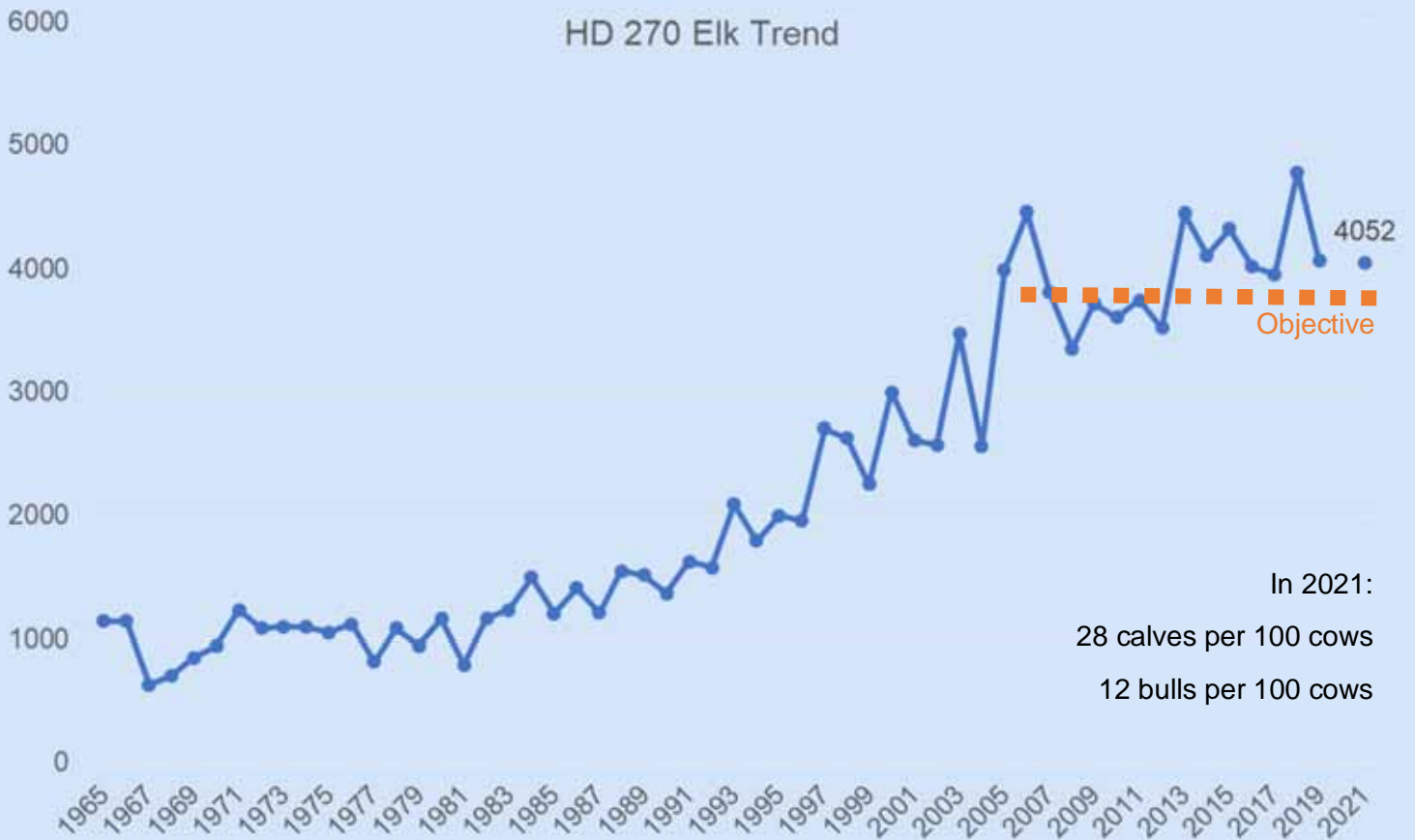


Bitterroot Elk Surveys

Hunting District 270



Elk along the East Fork of the Bitterroot on November 11, 2017.



Bitterroot Elk Surveys

Calf:cow Ratios



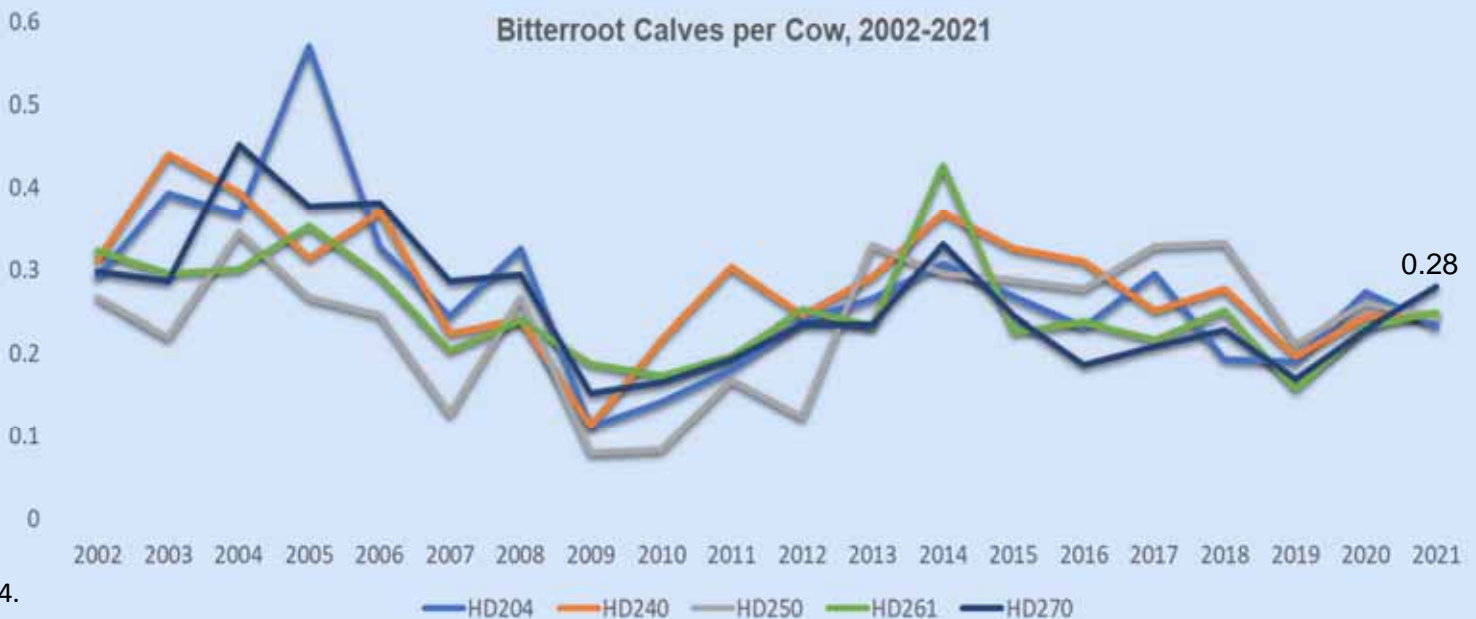
Elk in a cattle pasture in French Basin on April 18, 2020.

You'll sometimes find cattle in the vicinity of elk calves (above), but they're not the kinds of "cows" we're talking about in calf: cow ratios.

An average calf: cow ratio for elk in Region 2 is 0.25, which is about what we see in the Bitterroot this year. The calf: cow ratio is often expressed as "calves per hundred cows," just to make it a whole number rather

than a value less than 1. So, that would make the ratio 25 calves per hundred cows, instead of a fraction.

Calf recruitment in all Bitterroot hunting districts seems to trend similarly: high in the early 2000s, alarmingly low in 2009, increasing to 2014, and fairly stable at an intermediate level since then.

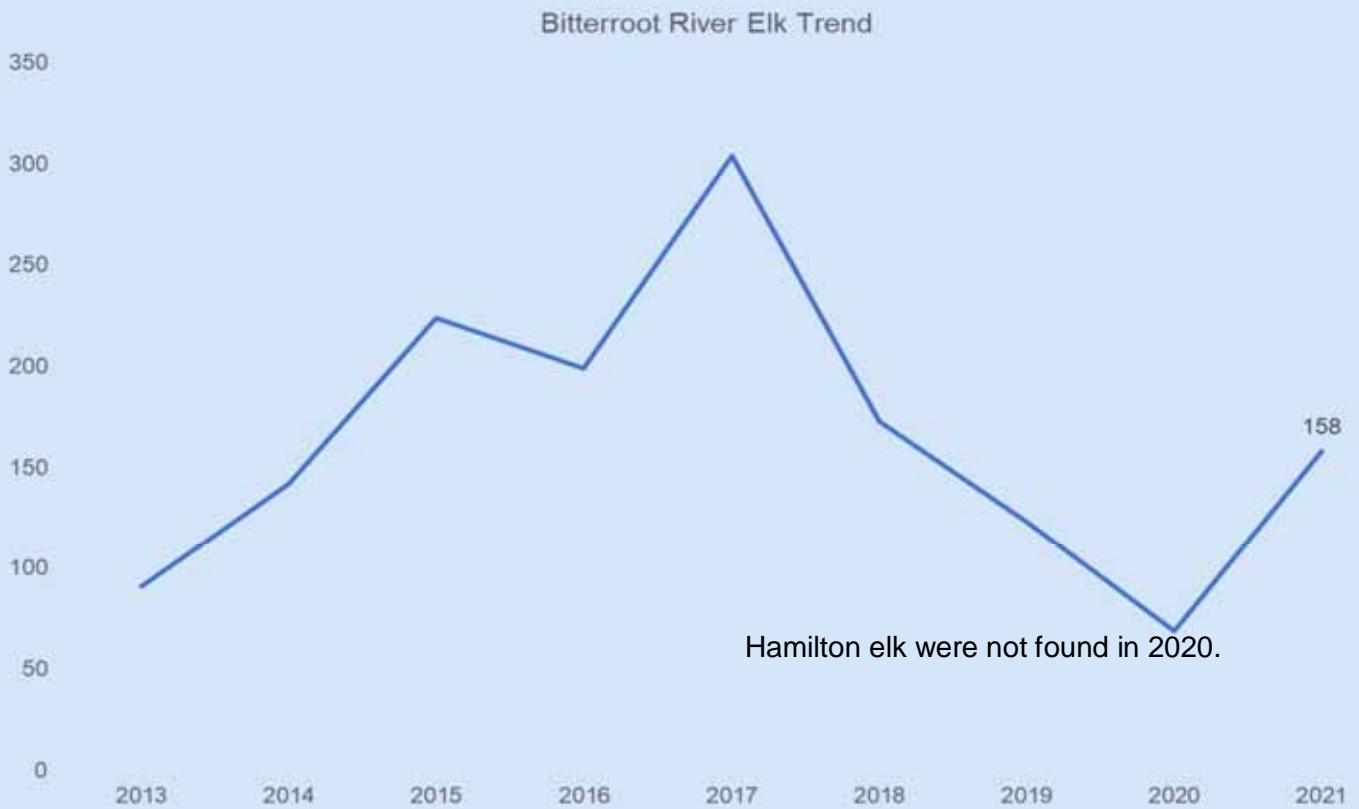


Bitterroot Elk Surveys

Riverbottom Elk



Elk along the Bitterroot River, by Rebecca Mowry.





Blackfoot Area Hunting Districts Elk Survey Report 2021



Aerial survey for elk in the Blackfoot area, by Scott Eggeman.

Prepared by

Scott Eggeman

Blackfoot Area Wildlife Biologist

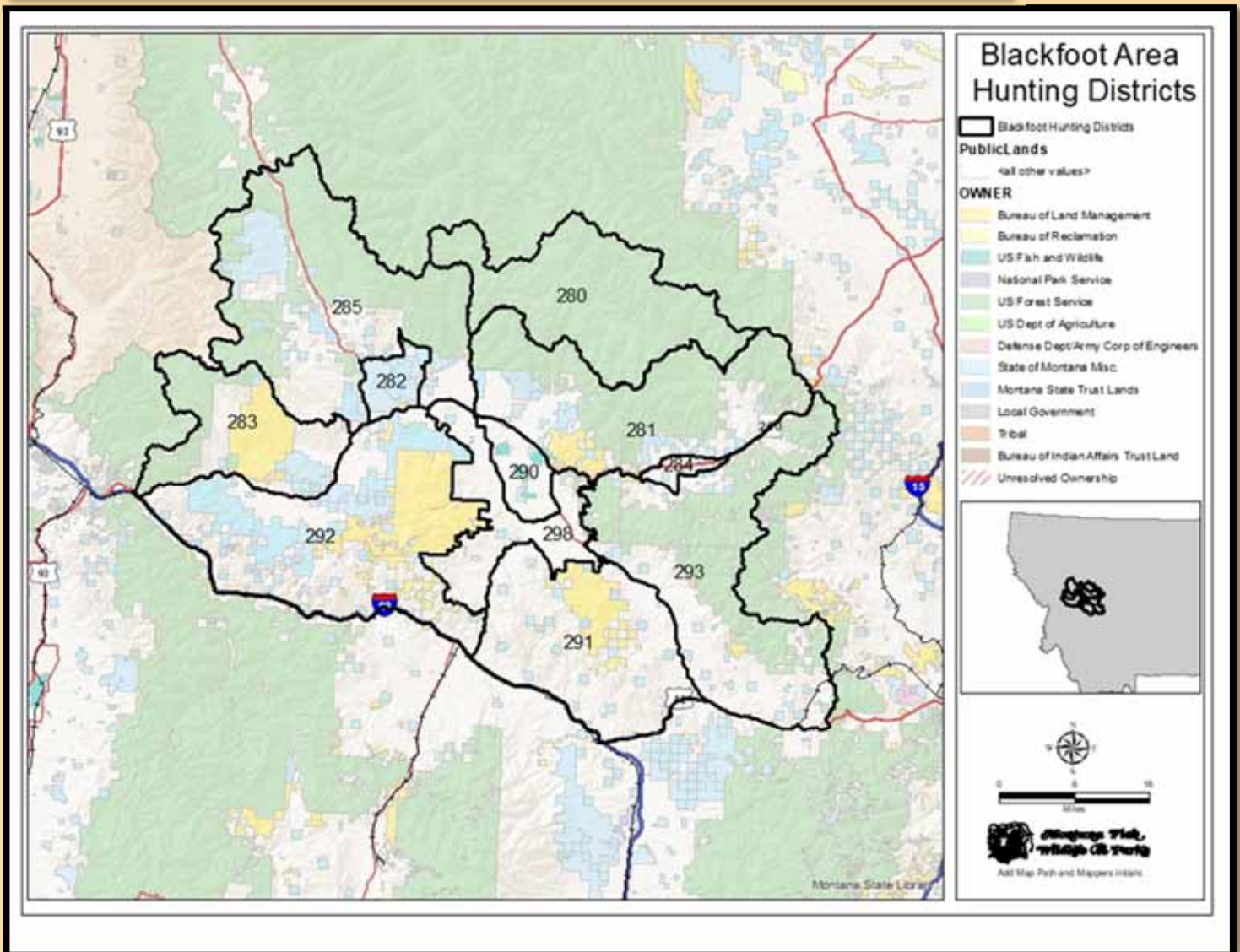
Blackfoot Elk Surveys



Blackfoot Hunting Districts

Below: FWP's Blackfoot Area covers 11 Hunting Districts and approximately 1.95 million acres of land.

Left: Elk along Highway 200, in HD 292, on June 5, 2021.



Blackfoot Elk Surveys

Hunting District 281 — Upper Blackfoot

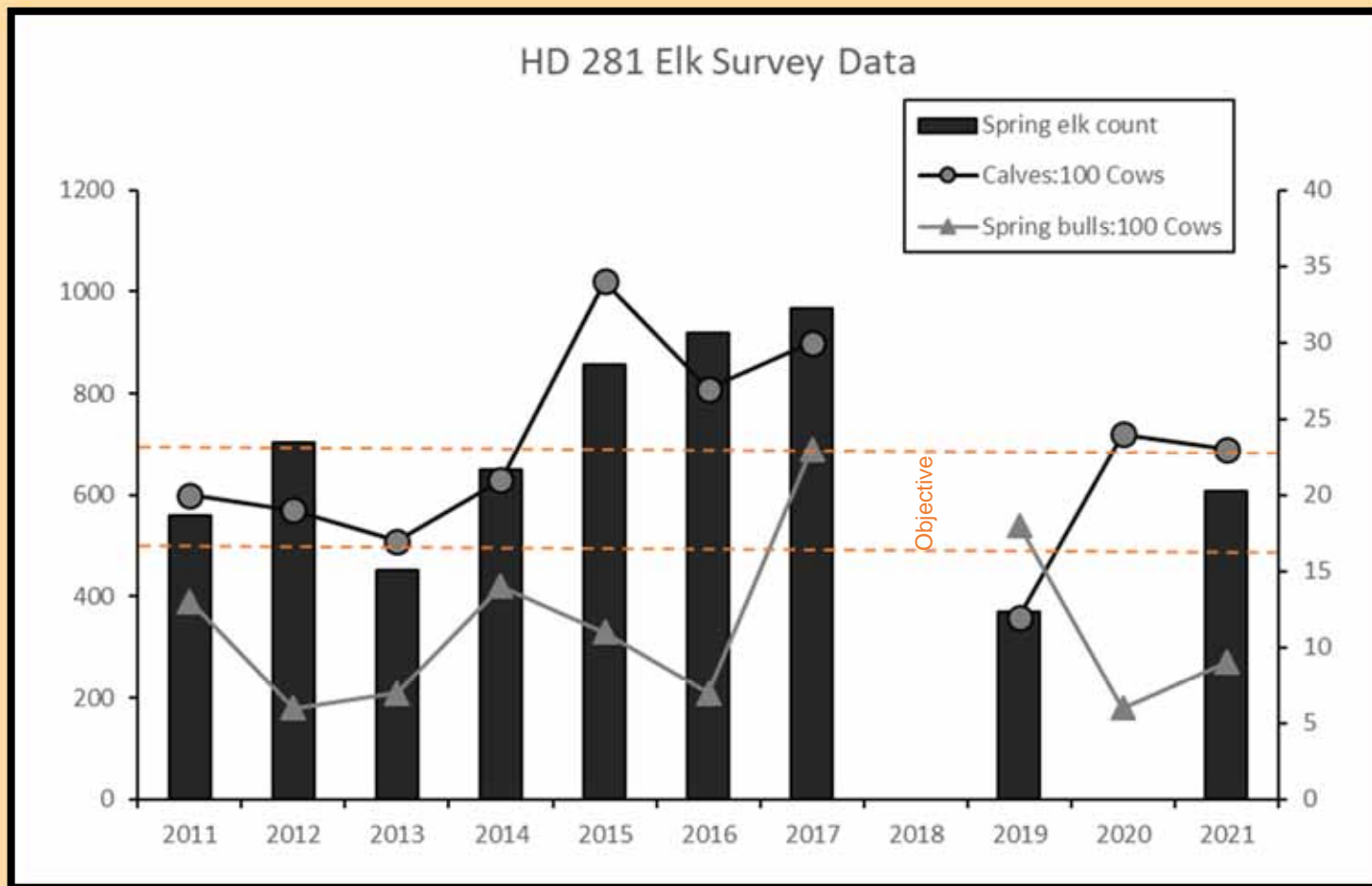


Figure 1. Elk survey results including total elk counted, calves per hundred cows and bulls per hundred cows.

Hunting District (HD) 281 lies within the Bob Marshall Elk Management Unit (EMU), situated in the upper Blackfoot Watershed, north of MT Hwy 200, from Monture Creek Road to Roger's Pass along the Continental Divide. Elk harvest regulations are currently in a conservative season structure (per the 2005 Montana Elk Management Plan) with 25 antlerless elk permits and brow-tined bull opportunity with a general elk license. Archery season opportunity is either sex. No shoulder seasons exist in the district.

HD 281 receives few, if any, game damage complaints, largely due to very little private land, with much of that land enrolled in the Block Management Program (BMP). Bull harvest in the district has been steady, but higher than most districts in the Blackfoot Area.

Management objectives: The elk population objec-

tive is set at 600 for HD 281 within a range of 500-700 elk observed during annual spring surveys.

Management challenges: HD 281 would be best classified as spring transitional range and summer range with minimal, marginal, winter range habitat due to relatively high annual snowfall amounts. Because of this, timing of surveys needs to occur during spring green-up, but prior to elk migrating through HD 281 from neighboring districts. Best timing is early to optimal green-up. Survey results also depend heavily on the severity of winter, with mild winters yielding higher counts than more severe winters.

Recommendation: Elk population objectives should account for variation due to winter severity and the presence of elk from neighboring districts, especially immigration from HD 422 and HD 290.

Blackfoot Elk Surveys

Hunting District 282 – Blackfoot Clearwater WMA & HD 285 -- Monture

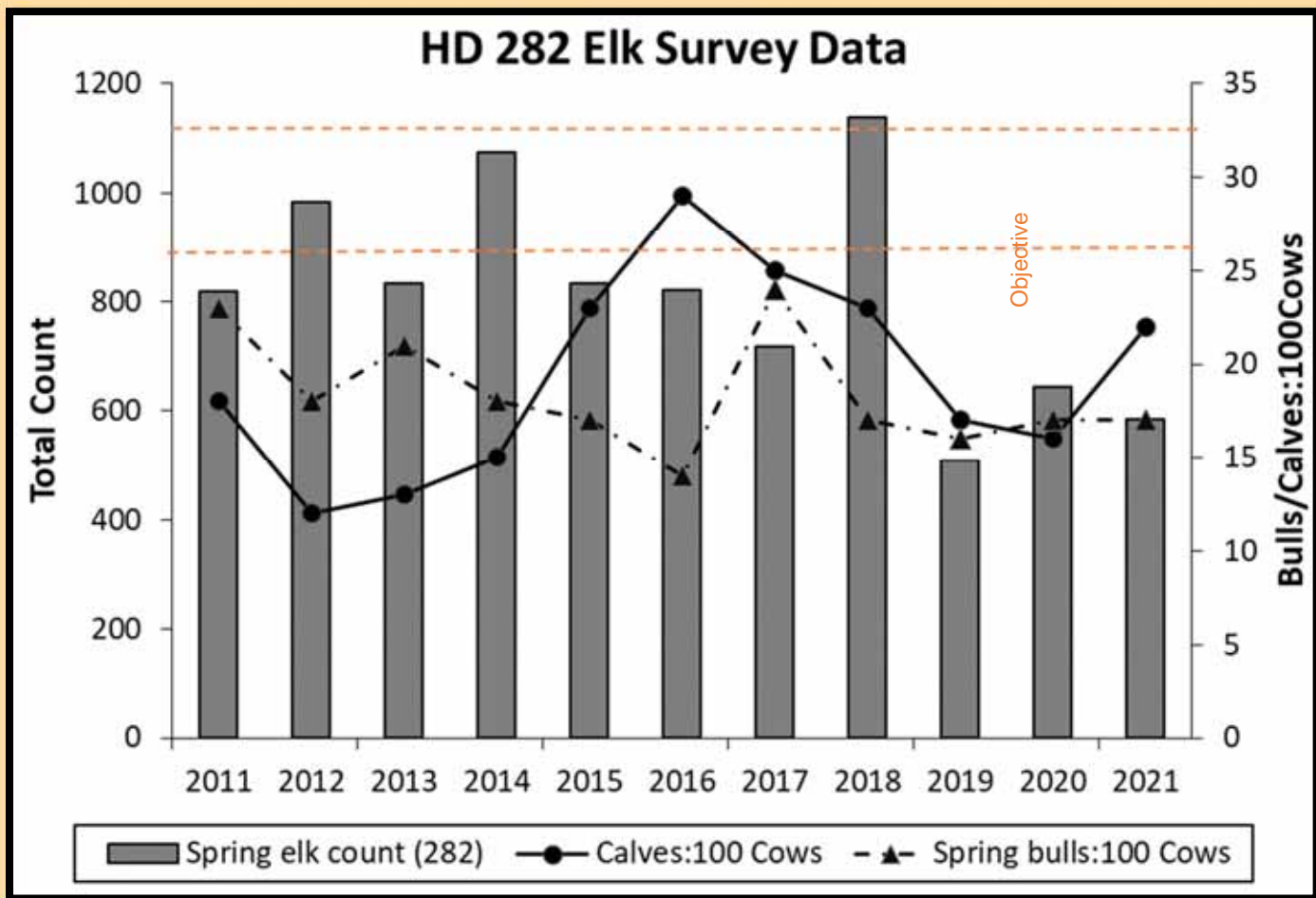


Figure 2. Graph of minimum elk counted within HD 282 during winter surveys. Red lines represent the population objective range. Surveys for HD 282 are representative of elk numbers for HD 285.

Hunting Districts 282 and 285 are within the Bob Marshall Elk Management Unit north of MT Highway 200, east of Game Ridge and west of Monture Creek road. Annual elk surveys conducted for HD 282 are also representative of HD 285 and are generally conducted in early winter, following the conclusion of the general big game hunting season, or more commonly, during late winter (March or early April). Elk generally congregate on HD 282 (Blackfoot-Clearwater WMA) and are easily visible during early winter before heavy snowfall when the elk move into the timber to feed on vegetation sheltered from snow under the tree canopy (including conifer needles and lichens). In low snowfall years or after the snow melts off the grasslands during late winter and early spring, elk will congregate in the open grasslands and feed on bunchgrasses prior to green-up.

Hunting Districts 282 and 285 are predominantly public land with one large private ranch along the

eastern portion with limited public access managed through the BMP. Antlerless hunting opportunity is limited to private land with a conservative number of antlerless B-licenses in HD 285 and HD 282. Brow-tined bull hunting opportunity exists during the general hunting season and either-sex opportunity exists during the archery season.

Management objectives: The elk population objective is set at 1,000 for HD 282 with a range of 900-1,100 elk observed during annual surveys.

Management challenges: HD 282 would be best classified as crucial winter range. Hunting districts in the northern portion of the Blackfoot watershed (north of MT Hwy 200) experience moderate to severe winters and have high predator densities.

Recommendation: Maintain conservative antlerless opportunity.

Blackfoot Elk Surveys



Above: Elk along the Clark Fork River, near Bearmouth, on June 20, 2020. HDs 291 and 292 overlap the Clark Fork along their southern boundaries, but are managed from the Blackfoot. Below: Elk along Highway 200 on March 27, 2021.



Blackfoot Elk Surveys

Hunting District 283 – Lower Blackfoot (East Portion)

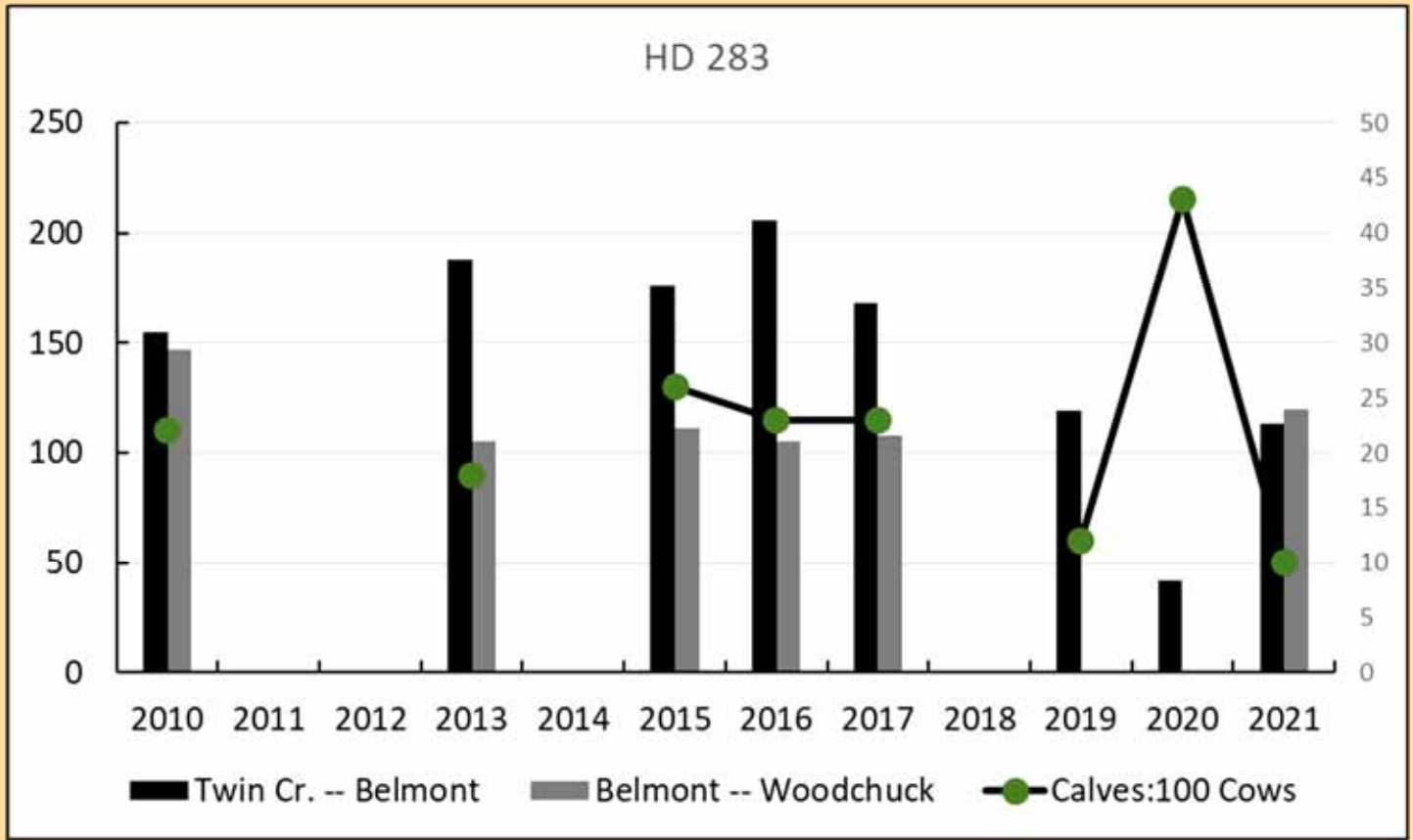


Figure 3. Elk survey results for “HD 283-East” from 2010 to 2021. Survey results are divided by survey unit. There is no defined objective for the east portion of HD 283 that lies within the Blackfoot watershed.

Hunting District 283 lies north of Highway 200 and is shared between the Missoula and Blackfoot Area biologists, divided along the Clark Fork and Blackfoot watershed boundary. The district terminates at Game Ridge along the eastern boundary. The land-cover can best be described as mostly timbered, gentle to moderately steep terrain. Prior to 2014, most of the land was owned by Plum Creek Timber Company until they sold it to The Nature Conservancy. Since then, large portions of the land have been sold to the Bureau of Land Management (BLM) and the Lolo National Forest. Public access exists across most of the unit and despite the closure of many miles of old logging roads, HD 283 still remains one of the most heavily roaded districts in the Blackfoot.

Harvest regulations for antlerless elk in HD 283 have been conservative in the Blackfoot portion due to the liberal access and concern for overharvest of antlerless elk. Brow-tined bull opportunity exists on the general elk license during the archery and general hunting seasons with no antlerless B-licenses or permits issued.

Management objectives: The population objective for HD 283 is 400-600 observed elk. The number of observed elk in the portion of HD 283 that lies within the Blackfoot watershed is usually 200-300. Elk recruitment has been in the low teens in two of the past three years for reasons unknown.

Management challenges: The main concern in this district is road access (too much) and low calf recruitment. There are 2-3 known wolf packs within the district and generally high mountain lion densities across the Blackfoot watershed. It is unknown what effect local mountain lion harvest regulations within the Missoula Special Management Area have on lion density.

Recommendation: Keep antlerless harvest conservative and consider investigating the effect of predators on elk recruitment, with a potential focus on the special lion management unit and how that affects lion density and elk calf survival.

Blackfoot Elk Surveys

Hunting District 291 – East Garnet Range

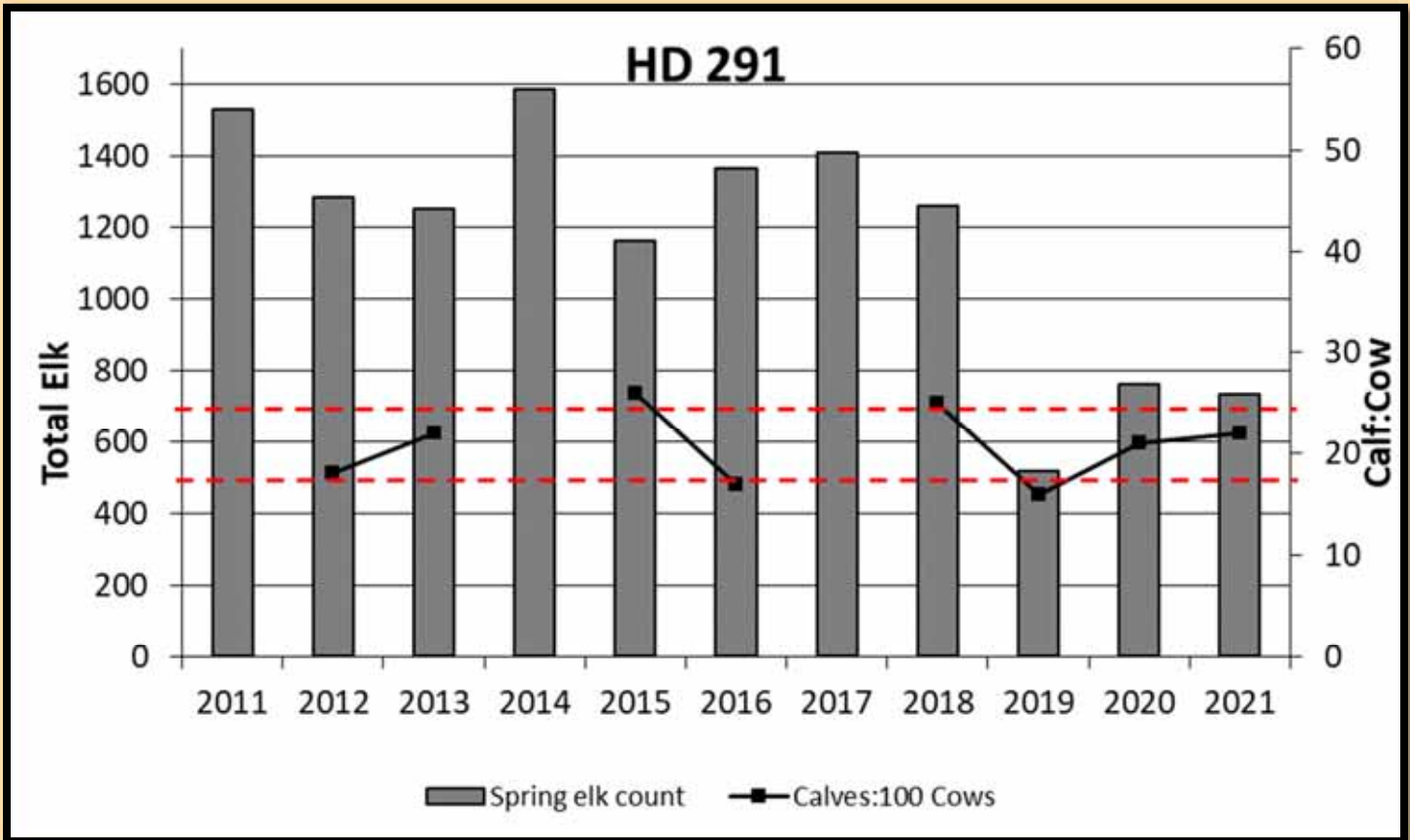


Figure 4. Elk survey results including total elk counted and calf: cow ratios in HD 291.

Hunting District 291 is situated north of Interstate 90, between Garrison Junction and Drummond and extends north towards Avon and Helmville. The district is mainly private and agricultural with intermixed DNRC and an area of Bureau of Land Management (BLM) in the north-central portion. There are several BMP cooperators throughout the district that provide broken but generous public hunting opportunity on private land.

Harvest regulations have generally been liberal for antlerless elk due to over-objective elk numbers. Between 2016 and 2019 early and late shoulder seasons were in place on private land in an effort to reduce elk numbers closer to the stated objectives.

Management Objectives: Population objectives for HD 291 are set at 600 with a range of 500 – 700 elk. Over the past three seasons our surveys have produced numbers at or slightly above the stated objective following several years of elk numbers nearly double the stated objective. Currently the antlerless regulation includes 150 private land B-licenses valid

during the early shoulder season and general season. There are also 50 antlerless elk permits available across the entire district.

Management Challenges: Access to some private land that is currently inaccessible to public hunters remains a management challenge.

Recommendation: Continue working with landowners to increase access to inaccessible private land.

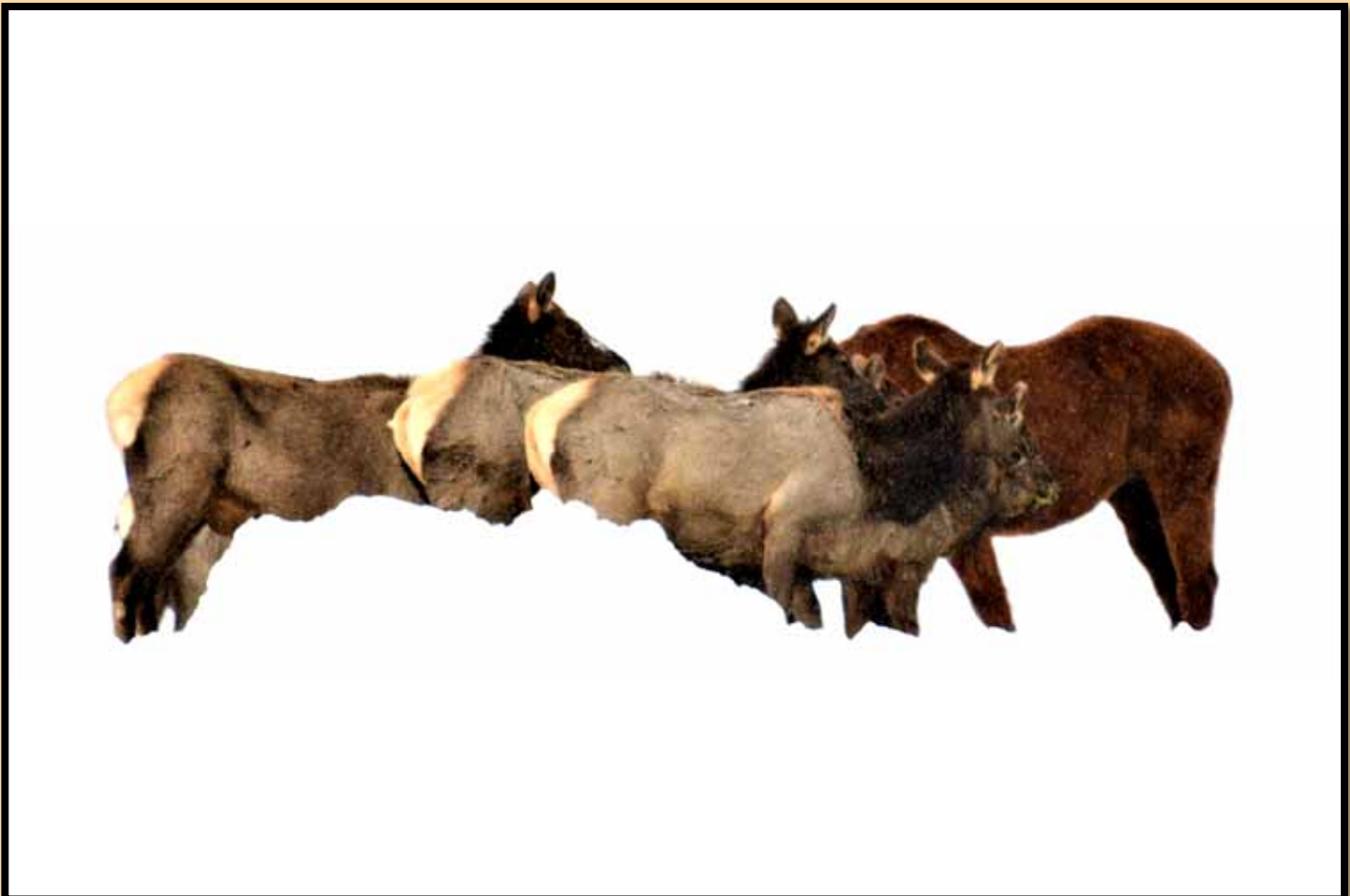


Elk and antelope in HD 291 on December 16, 2017.

Blackfoot Elk Surveys



Above: Elk lined out on private land in HD 292 on June 5, 2021. Below: Elk and a horse in HD 292 on February 14, 2021.



Blackfoot Elk Surveys

Hunting District 292 – West Garnet Range

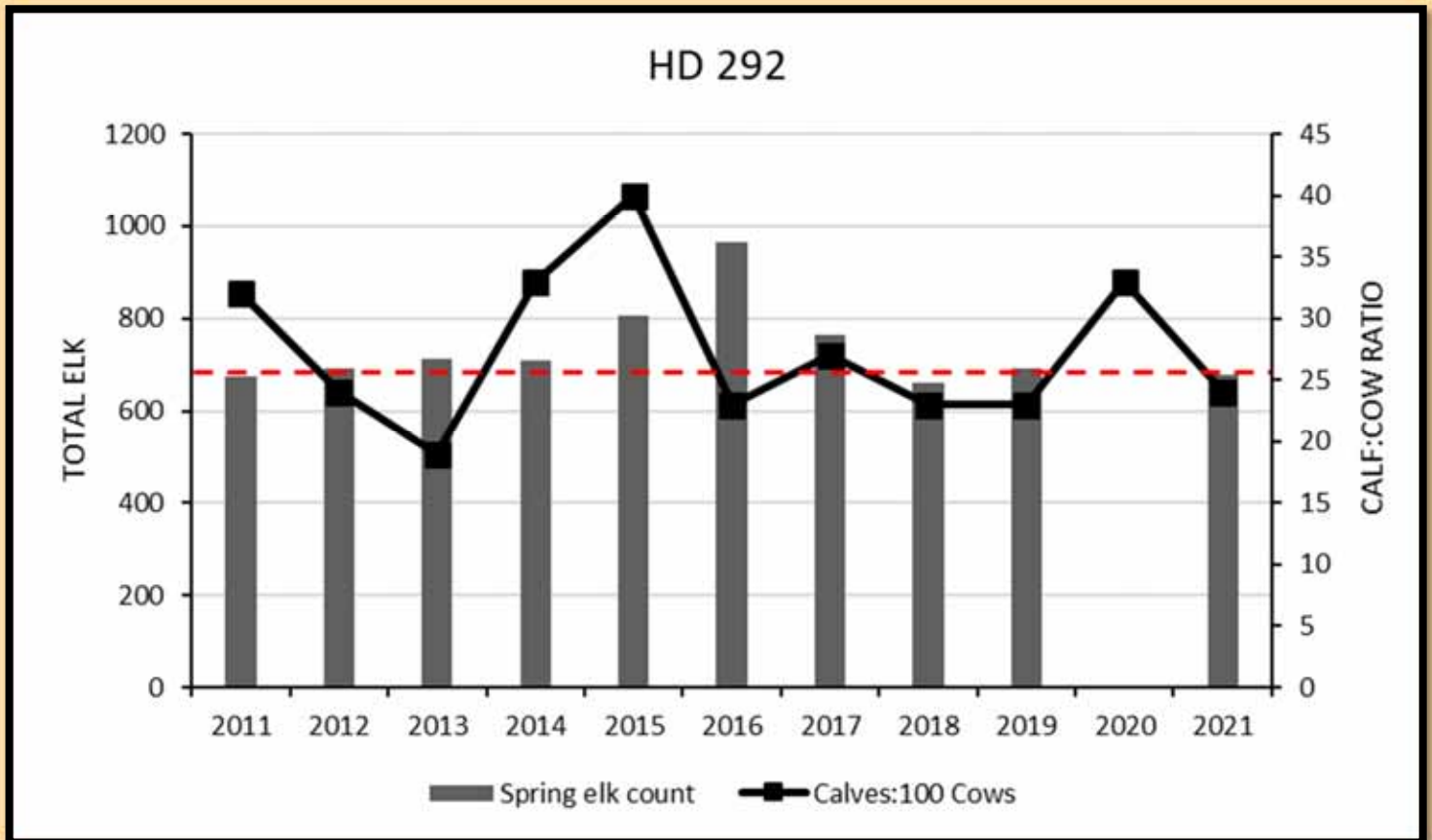


Figure 5. Elk survey results for HD 292 since 2011 to 2021. Recent surveys in the Potomac valley have been of a cursory nature or skipped entirely, thus resulting in below-objective counts for the district.

Hunting District 292 straddles the Blackfoot and Clark Fork watershed divide, north of Interstate 90 and south of MT Hwy 200 between Bonner and Drummond, with Hunting District 298 bordering to the north and east. Landownership is mostly public BLM and DNRC, with most of the private land concentrated in the Potomac and Greenough valleys, and along the I-90 corridor. The Nature Conservancy owns a large portion of the private land near the Bonner Mountain area and this land is accessible to public hunting opportunity.

Antlerless elk hunting opportunity has been mostly concentrated on private land in the Potomac and Greenough areas with limited B-licenses valid during the early shoulder season and general season. Early shoulder season opportunity exists with the main goal of reducing chronic game damage in the late summer and early fall.

Management Objectives: Population objectives for HD 292 are set at 800 with a range of 700 – 900 elk. Over the past three seasons our spring surveys have been at or below the lower range of population objective (Figure 5), with the caveat that the Potomac Val-

ley has been skipped or given a cursory (“high-grade”) survey on occasion due to time constraints or poor conditions and dense forest canopy.

Management Challenges: This district has relatively few challenges to managing elk at or near objective, but has had a history of game damage that appears to be less of a problem with the implementation of an early shoulder season on private land within the Blackfoot Watershed.

Recommendation: Continue to use the private-land early shoulder season to reduce game damage on agricultural land in the late summer and fall. Adjust the number of antlerless B-licenses in a balance with game damage and population objectives.



Calf elk in HD 292 on February 5, 2020.

Blackfoot Elk Surveys

Hunting District 293 – South Lincoln/Nevada Lake

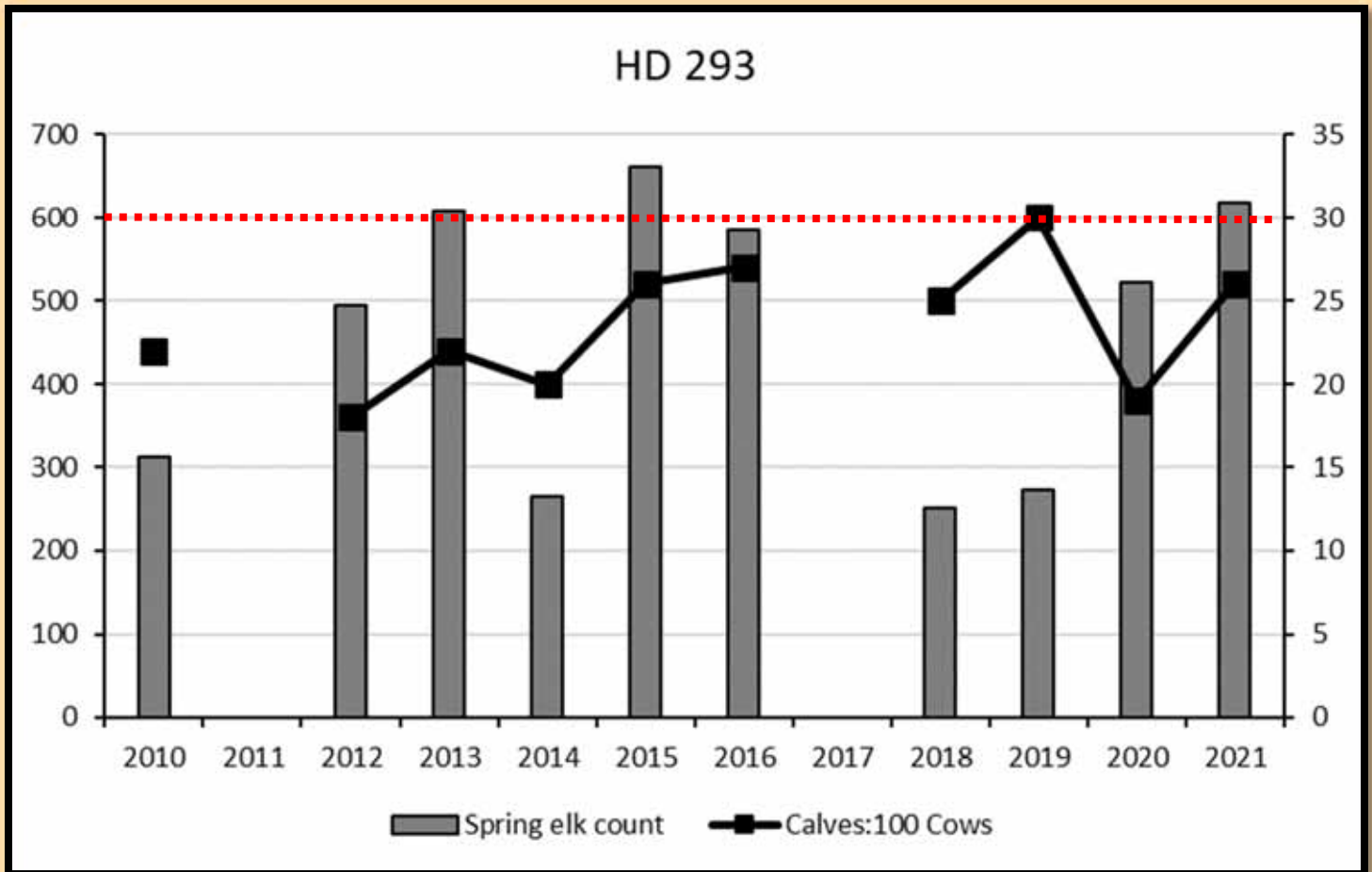


Figure 6. Observed elk from winter surveys in HD 293 since 2010 to present. The red dashed line represents the lower threshold (600 elk) of the population management objective, with the midpoint set at 750 elk. Note that the number of elk observed has only been within the objective three of the eleven seasons. Surveys were not conducted during the 2011 and 2017 seasons. Low counts correspond with more severe winter conditions, whereas mild winter conditions yielded higher counts.

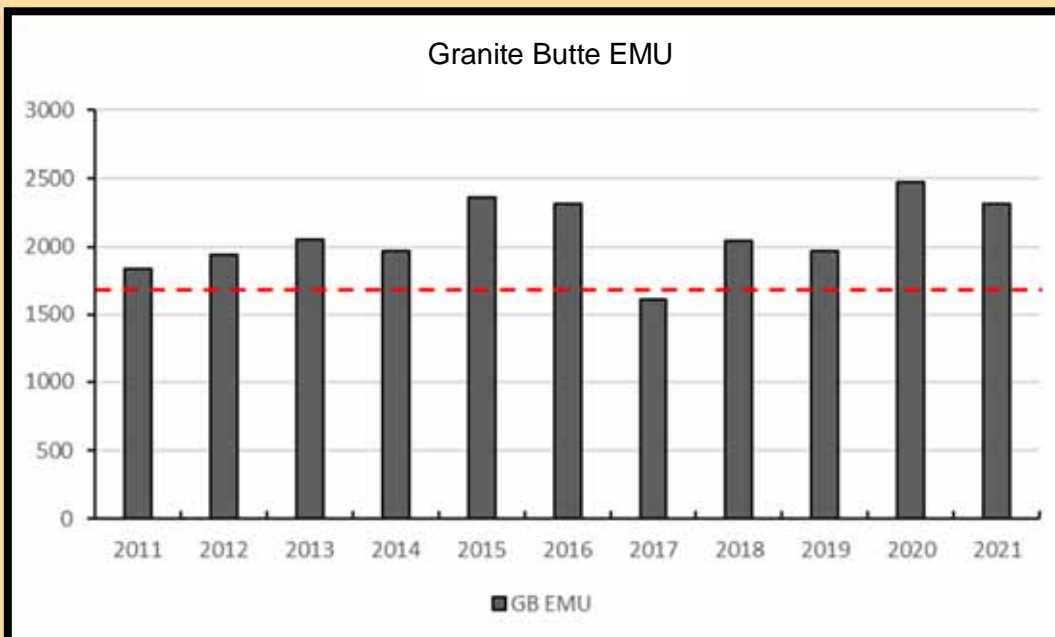


Figure 7. Combined observed elk for all three hunting districts that make up the Granite-Butte EMU. Red dashed lines represent the elk population management objective range.

HD 293 is part of the Granite-Butte Elk Management Unit (EMU), shared with Hunting Districts 339 and 343. The population objective for all three districts is 2,150 elk (range 1,720 – 2,580), and each district objective is: HD 293 = 750 elk (range 600-900) elk, HD 339 = 700 elk, and HD 343 = 700 elk. The current, 2005 Elk Management Plan recommends that surveys be conducted during winter.

Blackfoot Elk Surveys

Hunting District 293 – South Lincoln/Nevada Lake (continued)

Hunting District 293 is situated on the west side of the Continental Divide with Rogers Pass and Macdonald Pass along the eastern boundary and MT Hwy 200 as the north boundary and Hwy 141 to the south. Hunting District 298 borders the western boundary along the Helmville face. The Helena-Lewis and Clark National Forest manages most of the land in this district. Larger private and less forested ranches border the southern boundary, and the Lincoln community is located along the northern boundary with smaller, private landownership. This district is predominantly elk summer range with less desirable pockets of mostly agricultural land that serve as generally marginal winter range.

HD 293 is generally forested summer range in the northern two-thirds of the district with more open ranch and agricultural land to the south. For this reason, harvest regulations in the southern third of the district are more similar to those south of Hwy 141 in HD 291 with more liberal antlerless elk harvest. In the northern two-thirds, the forested land-cover is very similar to HD 281, with less game damage and very little agricultural land.

Management Objectives: This district is part of the Granite Butte EMU shared with Hunting Districts 339 and 343. The population objective for all three districts is 2,150 elk (range 1,720 – 2,580), and each district objective is: HD 293 = 750 elk (range

600-900), HD 339 = 700 elk, and HD 343 = 700 elk. The current, 2005 Elk Management Plan recommends surveys be conducted during winter. Based on previously documented collared elk movements and supported by survey results, elk in this EMU generally winter on the east side of the Continental Divide, especially during more severe winter conditions. In HD 293, elk numbers decreased as winter severity increased ($F_{1,8} = 5.19$, $p = 0.057$); there is a similar effect in HD 343 ($F_{1,17} = 4.08$, $p=0.06$) but an increase in the number of elk counted in HD 339 with increased winter severity ($F_{1,18} = 6.06$, $p=0.02$). Because HD 293 is predominantly summer range and the surveys are conducted during winter, surveys have mostly produced survey results below or barely within the lowest range of the objective (see Figure 6).

Management Challenges: The biggest management challenge with this district is how the management plan divides the population objectives among the three districts. Another concern is whether the district should be divided, north and south, with the portion currently described as “HD 293 South” added to HD 291 and the remaining northern portion added to HD 281.

Recommendation: Continue to use the private-land early shoulder season to reduce game damage on agricultural land in the late summer and fall in the portion of HD 293 South. Adjust the number of antlerless B-licenses in a balance with game damage and population management objectives.

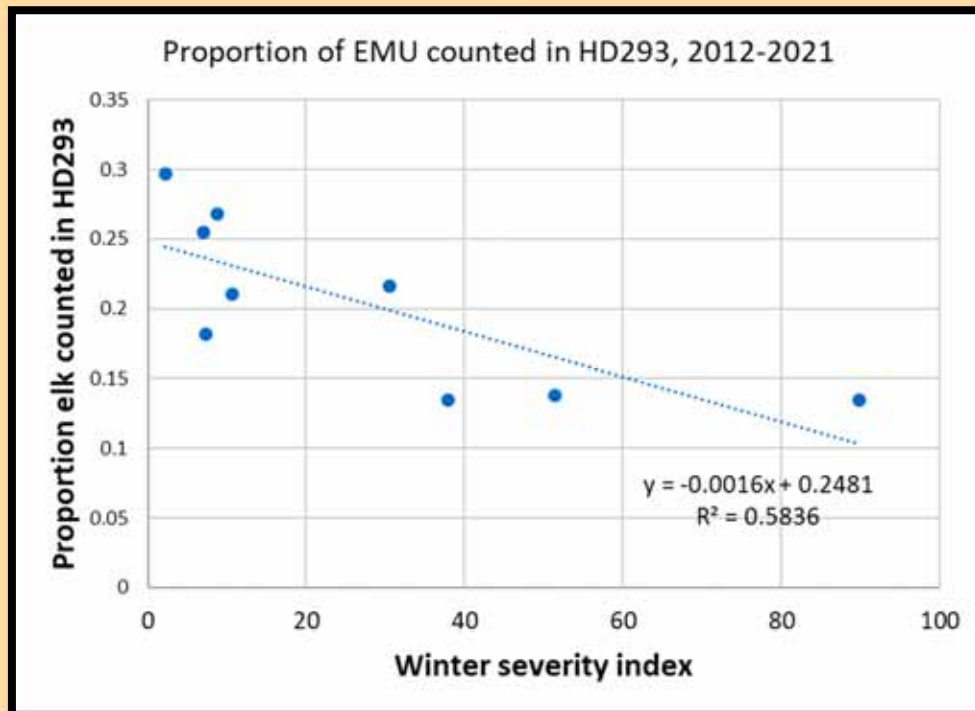


Figure 8. The proportion of the Granite Butte elk counted in HD 293 as a function of a Winter Severity Index (WSI). Higher WSI values represent more severe winter conditions. Fewer elk are counted in HD 293 as WSI increases.

Blackfoot Elk Surveys



Above: Hundreds of elk along the skyline of the Blackfoot-Clearwater Wildlife Management Area at the end of a mild winter on March 20, 2021. Below: Elk in nearly the same spot on March 27, 2021.



Blackfoot Elk Surveys

Hunting District 290 & 298 – Ovando/Helmville

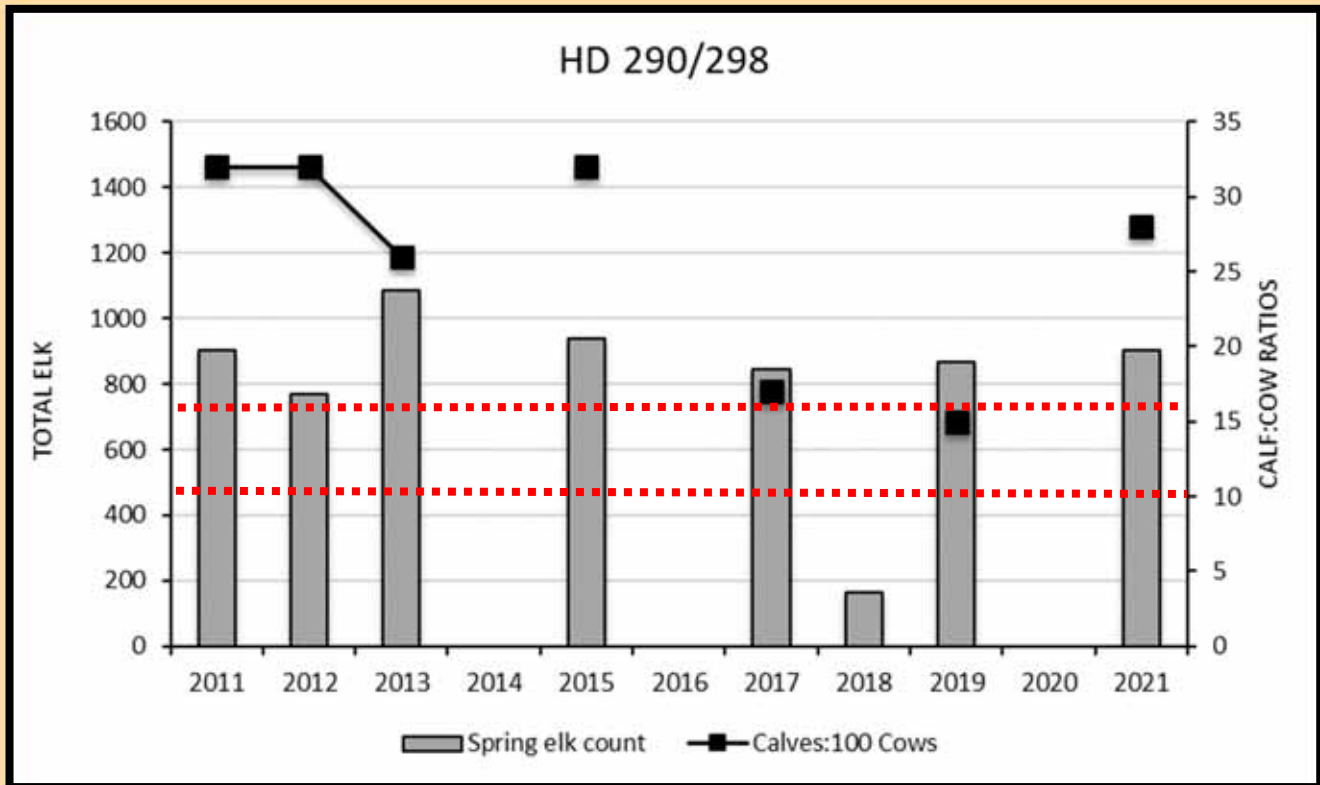


Figure 9. Number of elk observed and corresponding calves per 100 cows during spring surveys in HDs 290 and 298. Red lines represent the population objective range. Note that this survey was con-

Hunting Districts 290 and 298 are lumped together for survey purposes because they share a boundary and are mostly made up of private land in the Ovando and Helmville valley. Prior to the development of HD 298 the area suffered from chronic game damage by elk, so in 2008 the mostly private portions of HD 291, 292, and 293 within the Ovando and Helmville valleys were carved out to create what is now HD 298. Surveys are best conducted in the spring during early to optimal green-up but prior to elk immigrating in from HD 291. Hunting access is generally good except for a couple of large ranches that offer some limited pay-to-hunt opportunities. HD 290 has historically been an archery-only district but because of chronic game damage issues and over-objective elk numbers, that has changed with regards to antlerless elk opportunity. Currently, antlerless elk can be harvested during an early and late shoulder season and during the general hunting season with a rifle. This opportunity is available on private land only and with the issuance of a B-license or general elk license during the general season.

This hunting district may be one of the best examples of how to implement shoulder seasons to improve

appropriate number of elk. In general, the landowners in this district have been happy with shoulder seasons as a tool and would like to see them continued.

Management Objectives: The population management objective for these units combined is 600 with a range of 450 – 750. However, given the forage productivity of the area and the lack of key access on two large ranches, this number is likely low, and the objective could be increased to 750 elk. Shoulder seasons have been successful at reducing game damage and increasing tolerance of elk from private land owners and should be maintained with the ability to adjust antlerless opportunity (licenses) based on survey results.

Management Challenges: Improving access to hunt elk would allow more flexibility to manage elk to the current objective; however, that does not seem realistic in the near future. Perhaps the best solution is to increase the population objective.

Recommendation: Continue using shoulder seasons and antlerless B-licenses to manage game damage and the elk population. Entertain adjusting the population objective upwards to 750 or 800 elk.

Blackfoot Elk Surveys



Above: Radio-collared elk (pictured at Clearwater Junction in 2021) have played a big role in elk management in the Blackfoot watershed since the 1970s, when elk were captured and radioed in the Chamberlain Creek area of Hunting District 292 as part of the Montana Elk Logging Study. The latest in a long succession of management efforts involving radioed elk

in the Blackfoot is approaching a close on the landscape containing the Rice Ridge Fire of 2017, where biologists are monitoring and evaluating elk response to the burn to guide future forest management. Below: Trust us that radioed elk are pictured in 2021 along Woodward Road, across from the Blackfoot-Clearwater Wildlife Management Area.



Lower Clark Fork Elk Surveys—Liz Bradley, Biologist



Above: The Lower Clark Fork includes HDs 200, 201, 202, 203 and the west portions of HDs 260 and 283.
Below: Elk winter range in HD 201, along I-90, west of Superior.



Lower Clark Fork Elk Surveys



Above: Supermoon rising while classifying elk from the ground in the Lower Clark Fork in April 2020, by Liz Bradley. Below: Elk near Frenchtown, standing to be classified, also in April 2020, by Liz Bradley.



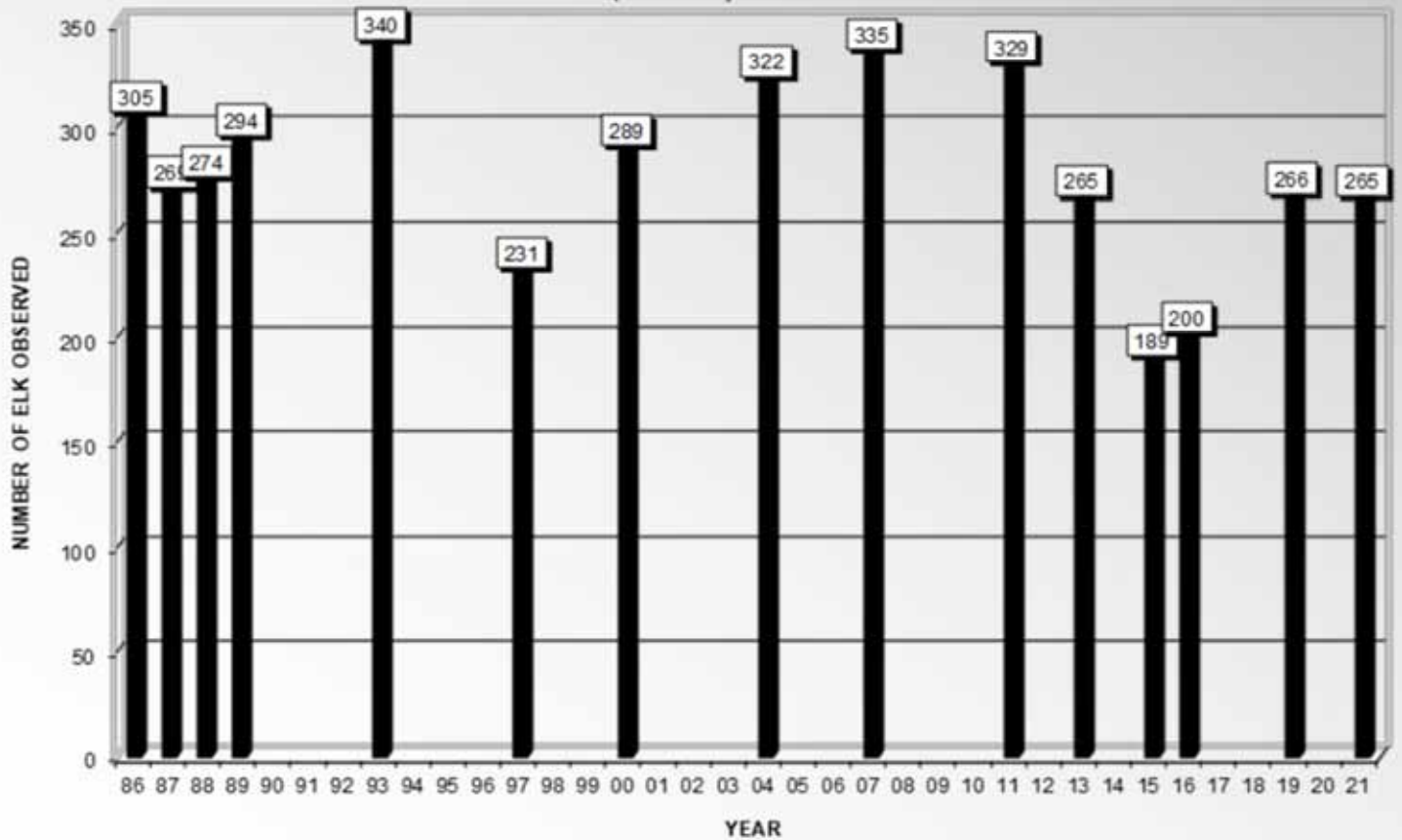
Lower Clark Fork Elk Surveys Hunting District 200



Elk in Burdette Creek, HD 203, in 2021. Photo by Liz Bradley.

Elk Observed in HD 200 During Spring Aerial Surveys 1986 - 2021

Population Objective: 300

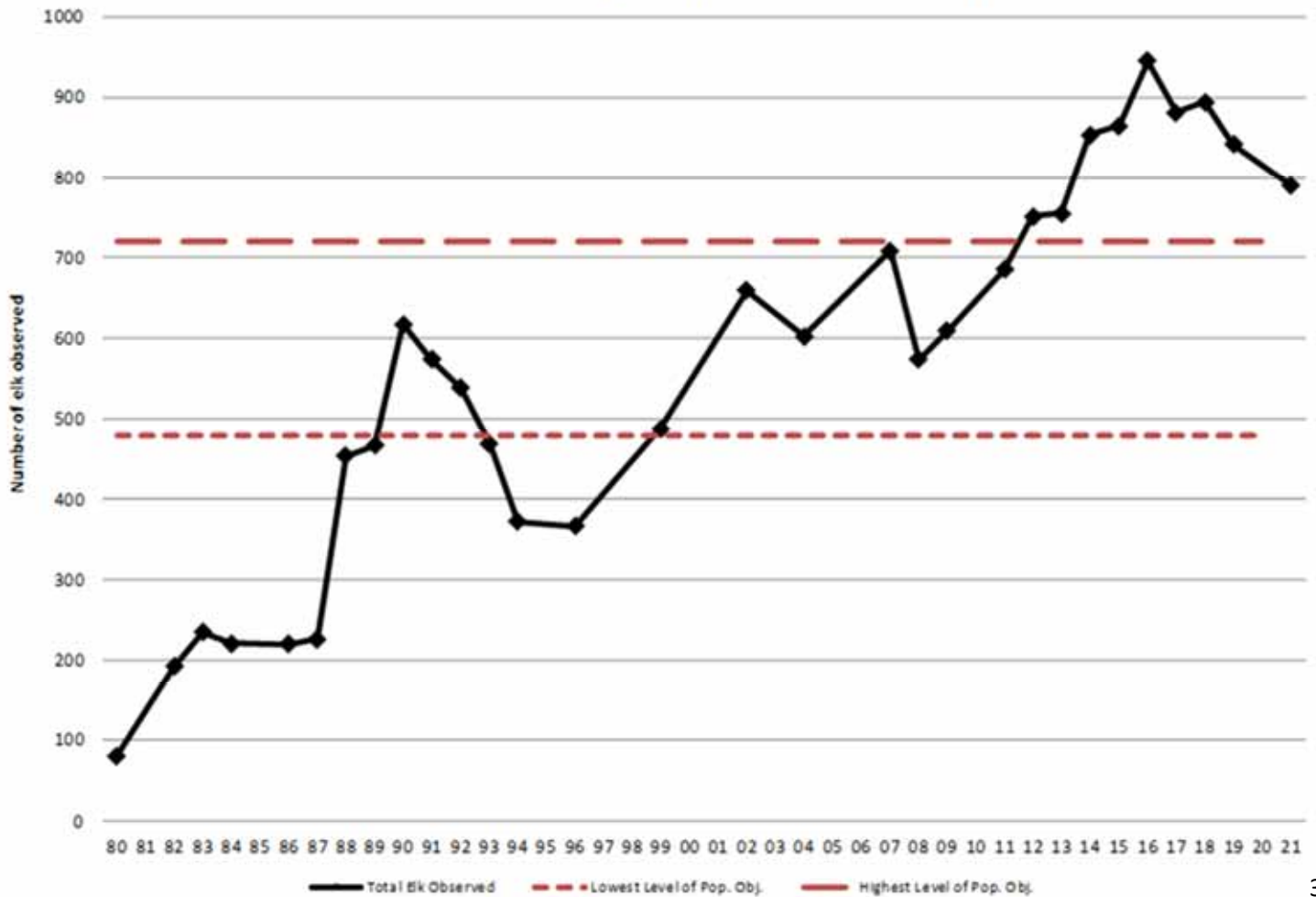


Lower Clark Fork Elk Surveys Hunting District 201



Elk along I-90, in HD 201, on January 8, 2021.

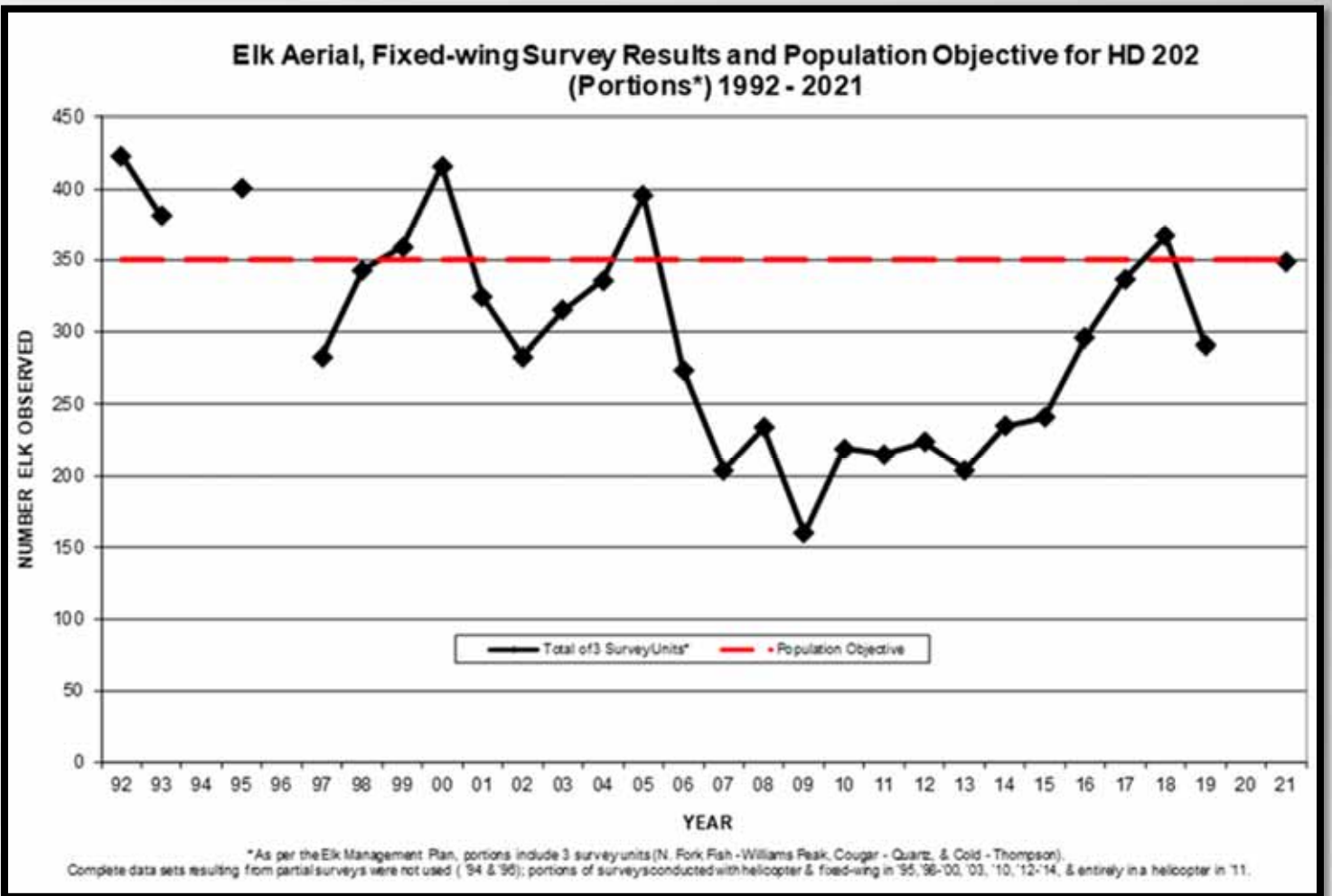
HD 201, elk observed during spring fixed-wing surveys, 1980-2021



Lower Clark Fork Elk Surveys Hunting District 202



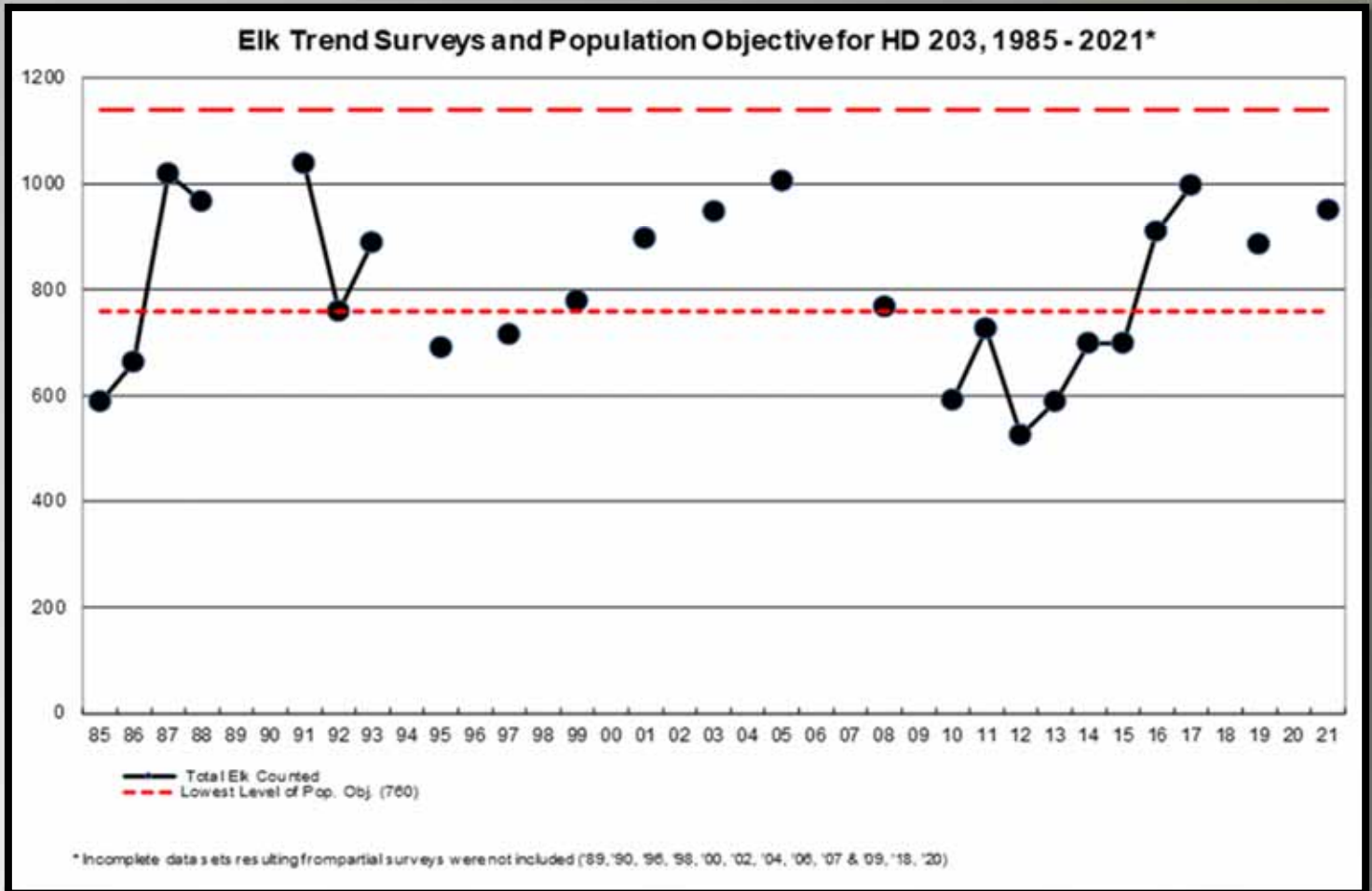
Above: Aerial survey of elk in Fish Creek in 2015, by Liz Bradley.



Lower Clark Fork Elk Surveys Hunting District 203



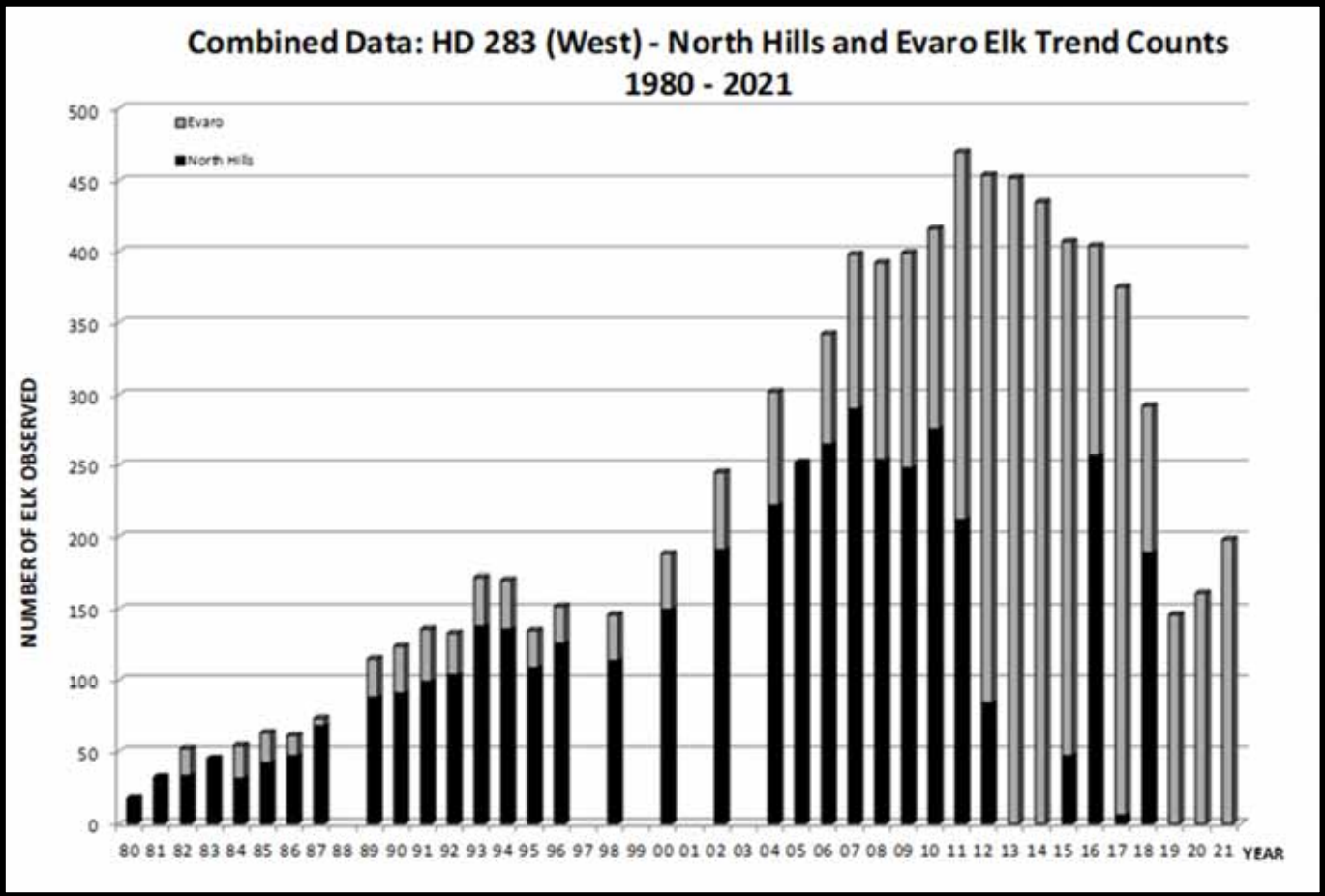
Above: Elk feeding on crops and clambering over irrigation pipe near Frenchtown on October 30, 2016..



Lower Clark Fork Elk Surveys Hunting District 283 (West Portion)



Above: Elk winter range on the North Hills on February 24, 2021.

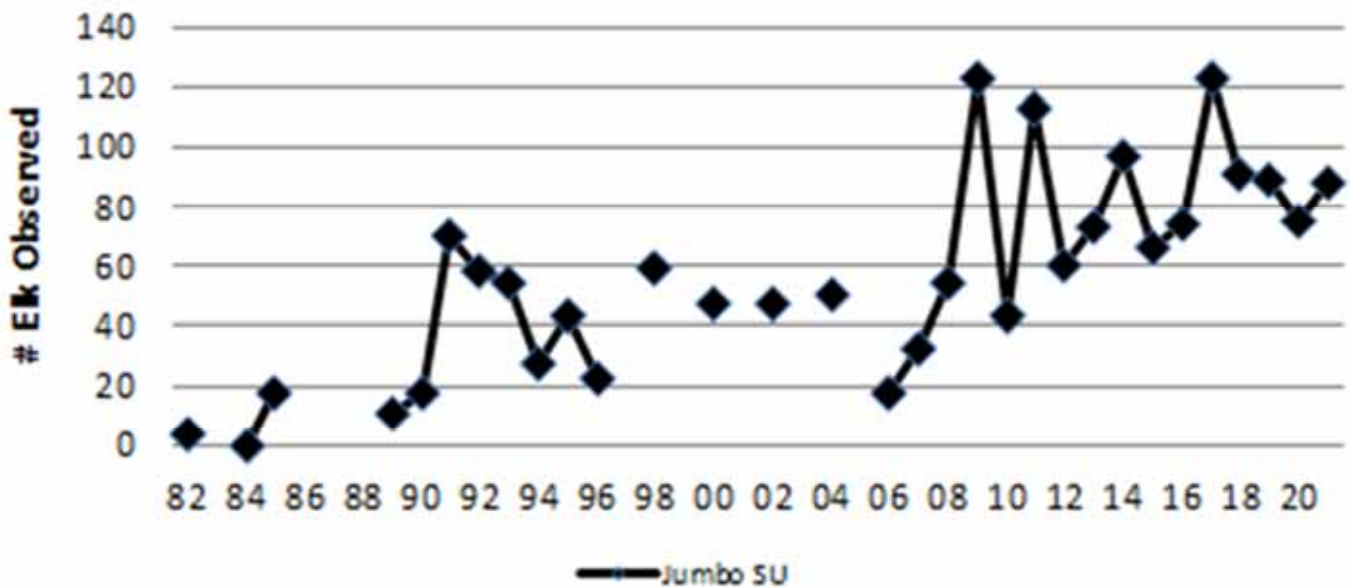


Lower Clark Fork Elk Surveys Mount Jumbo



Above: Elk winter range on Mount Jumbo on February 24, 2021.

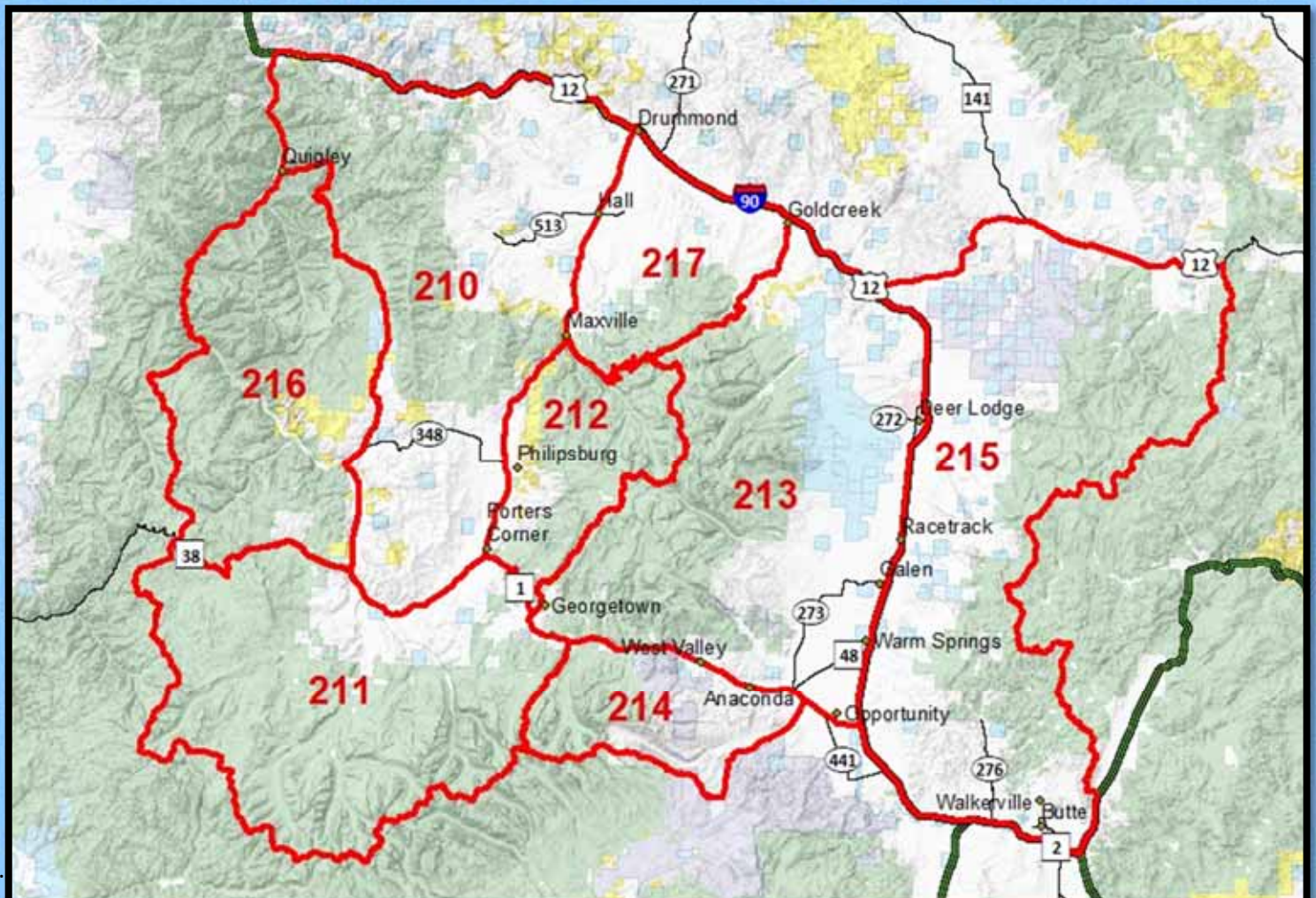
Jumbo Elk Observed, Fixed-wing, 1982-2021



Upper Clark Fork Elk Surveys—Julie Golla, Biologist



Above: Elk survey in the Upper Clark Fork, by Julie Golla. Below: Upper Clark Fork Hunting Districts.



Upper Clark Fork Elk Surveys



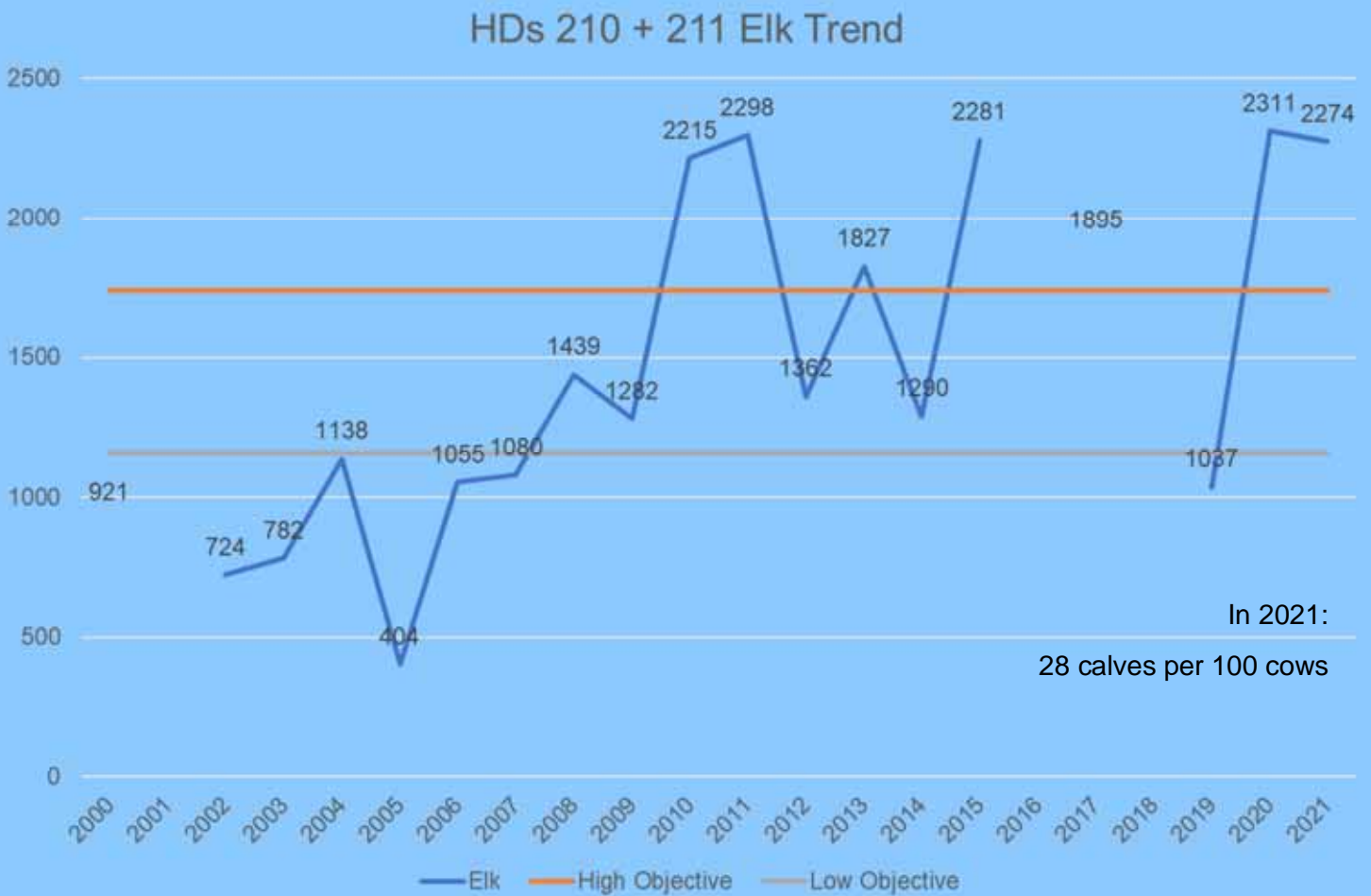
Above: Elk survey in the Upper Clark Fork, by Julie Golla. Below: Mature bull in HD 217 on September 10, 2019.



Upper Clark Fork Elk Surveys Hunting Districts 210 & 211



Above: Bare slopes on privately-owned, elk winter range on April 22, 2020. Below: Many of the same elk use both HDs 210 and 211, so elk counts are combined.

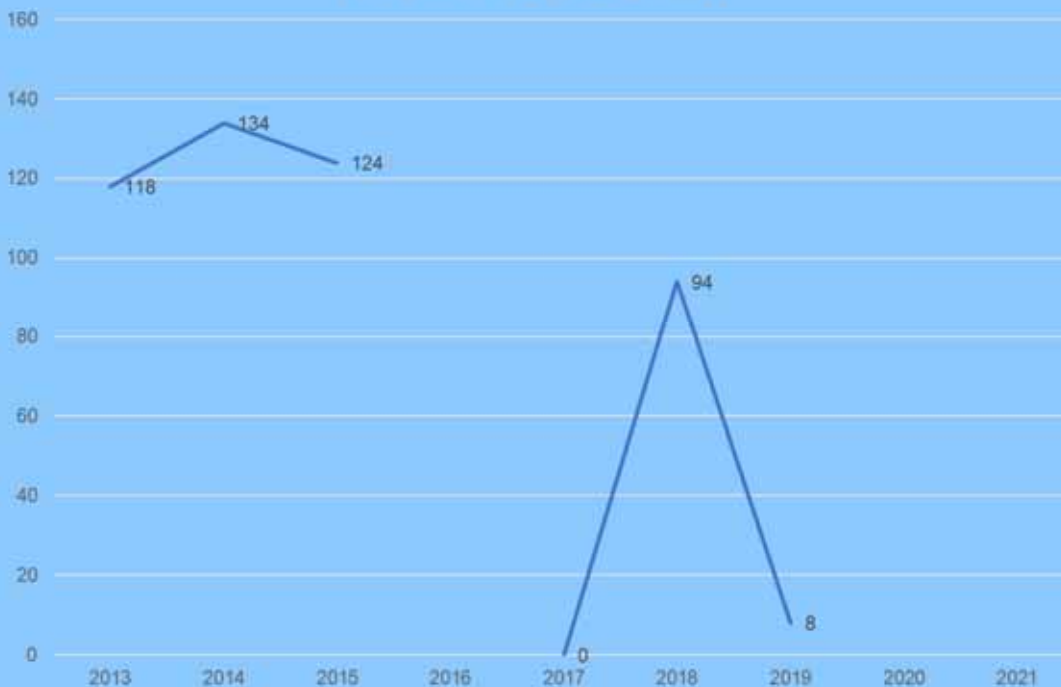


Upper Clark Fork Elk Surveys Hunting District 212



Above: Moon over new HD 212, which now spans the area from Maxville to Georgetown Lake on the east side of Highway 1. Photo taken on November 29, 2020.

Redrawn HD 212 Elk Trend



In 2020, the size of HD 212 was greatly reduced as a result of redrawing the HD 213 boundary to include the Deer Lodge valley portion of old HD 212.

The graph at left shows elk counts in only that portion of old HD 212 that corresponds with new HD 212. New HD 212 runs from Maxville to Georgetown Lake to the watershed divide atop the Flint Creek Range.

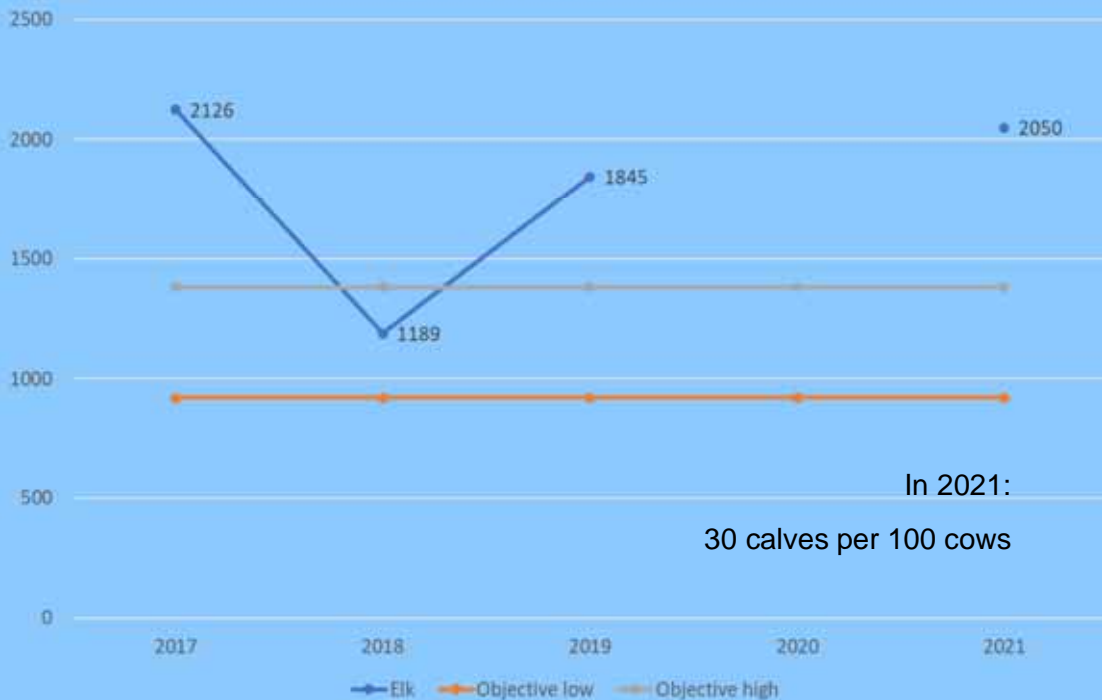
New HD 212 was not surveyed for elk in 2020 or 2021.

Upper Clark Fork Elk Surveys Hunting District 213



Above: This photo was taken near Garrison on February 21, 2019, in what is now HD 213. The boundary with HD 217 is now at Gold Creek

Redrawn-HD 213 Elk Trend



In 2021:

30 calves per 100 cows

In 2020, the size of HD 213 was greatly expanded to include the Deer Lodge valley portion of old HD 212.

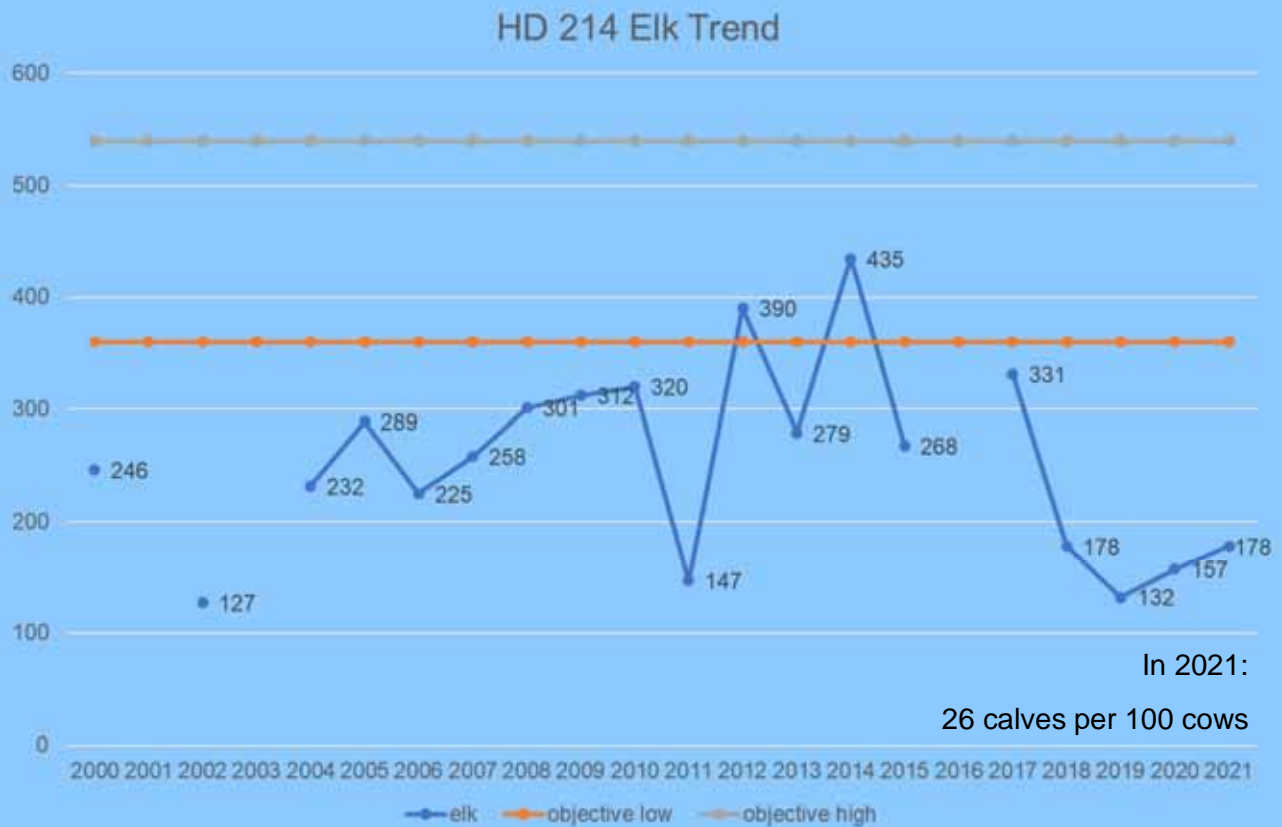
The graph at left shows elk counts in that portion of old HD 212 and old HD 213, which now comprise new HD 213. New HD 213 runs from Gold Creek to Anaconda (Highway 1) to the watershed divide atop the Flint Creek Range.

New HD 213 was not surveyed for elk in 2020, but was flown in 2021.

Upper Clark Fork Elk Surveys Hunting District 214



Above: Storm Lake on July 5, 2018. The trail along the western shore of Storm Lake (at right in this picture) is the boundary between HDs 214 and 211. So, the lake waters are within HD 214. Below: Data NOT corrected for the boundary change.



Upper Clark Fork Elk Surveys Hunting District 215



Above: Elk moving upslope after feeding on stored hay along Highway 12 on February 13, 2018. Cold and snow drive elk to haystacks, and the converse is also true sometimes. Elk stayed out of stacks for the most part in the mild winter of 2021. Photo by Randy Arnold.

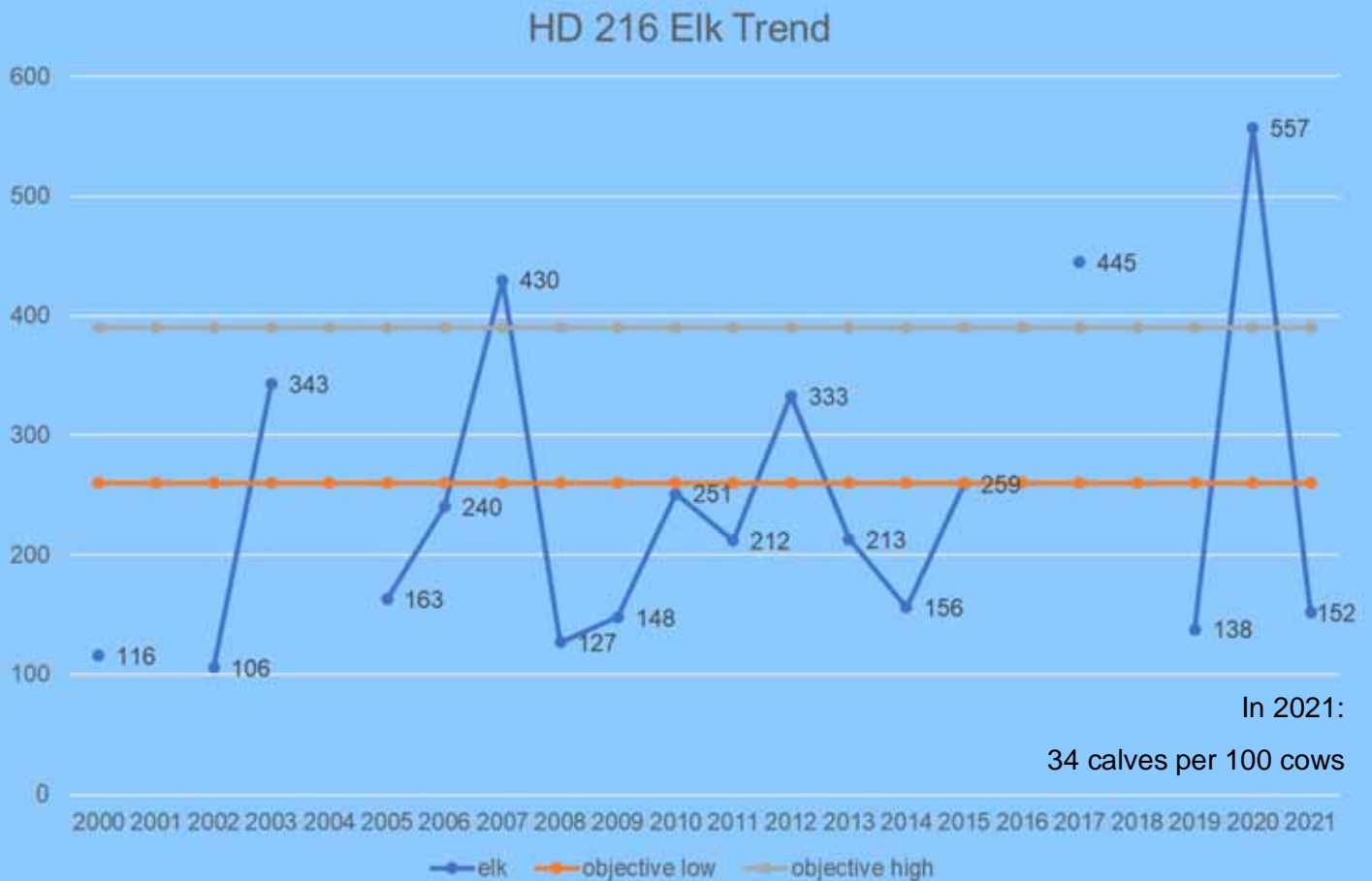
HD 215 Elk Trend



Upper Clark Fork Elk Surveys Hunting District 216



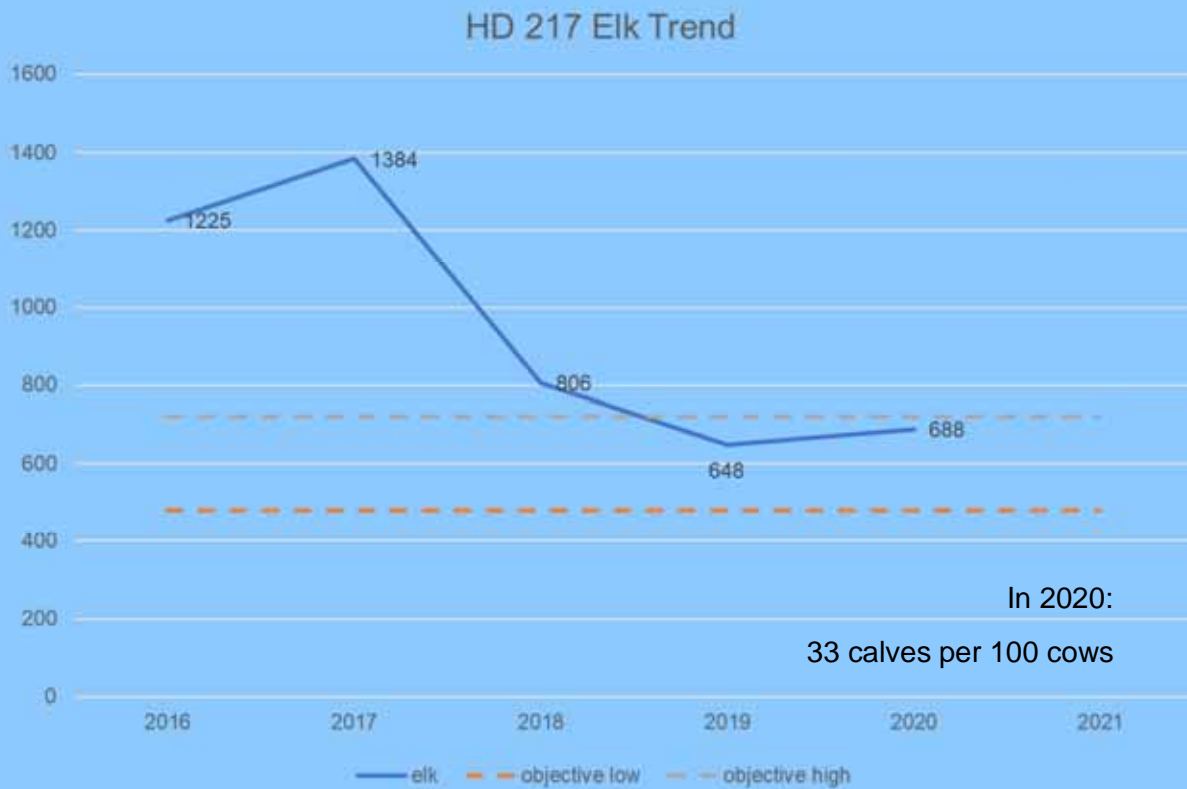
Above: Elk surveyed on March 10, 2017, in HD 216. Photo by Julie Golla. Below: Wide variation in annual elk distribution across hunting district boundaries accounts for the wide annual variation in elk counts attributed to HD 216.



Upper Clark Fork Elk Surveys Hunting District 217



Above: Elk on private land in HD 217 on September 26, 2020.





Hunting opportunity for antlered bull elk is allocated with the issuance of limited permits through the statewide drawing in three, relatively small, hunting districts: 217, 250 and 282. A permit is also required to hunt antlered bulls in HD 270, but in that district, unlimited numbers of permits (one per hunter) are available through the drawing. Above: HD 217 on 17 September 2019. Below: HD 250 on 14 September 2019.

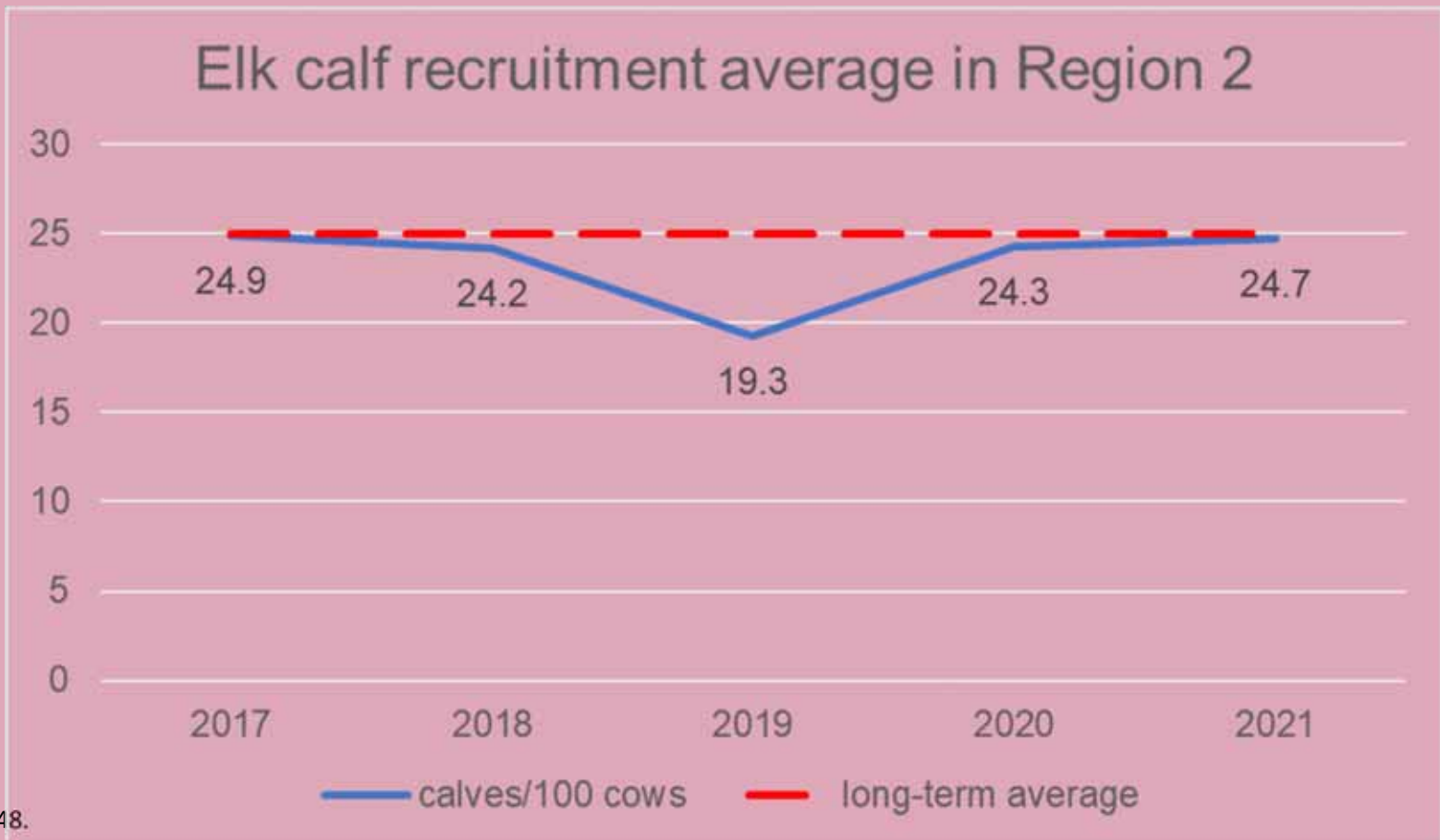


Elk Calf Recruitment Update

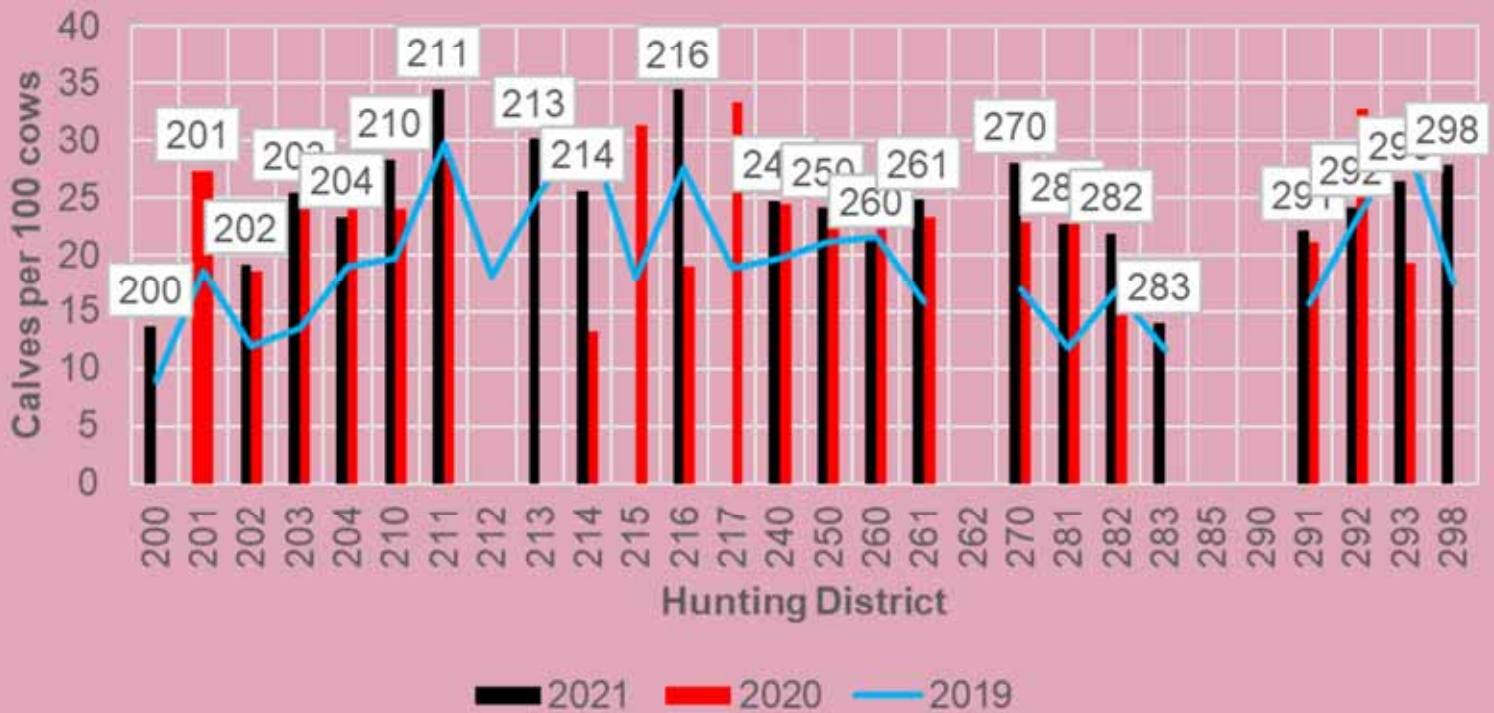


Elk calf recruitment, expressed as the ratio of calves per hundred cows, held steady across Region 2 in 2021, near the long-term average of 25 calves per hundred cows. As you can see in the graph below, calf survival and recruitment took a pronounced dip in 2019, in con-

junction with that hard winter, but have bounced back to pre-2019 levels in the years since then. Spring, summer and winter weather, plus predation, all play complex roles in determining elk recruitment. Above: elk and white-tailed deer in HD 292 on 5 June 2021.



Calf Recruitment by HD in 2019, 2020, 2021



Elk calf recruitment typically holds fairly steady at the regional scale, while varying quite a bit from year to year at the hunting district scale. In the graph above, elk calf recruitment for each hunting district in 2020 and 2021 is shown by the red and black bars. The blue line provides a comparison with recruitment after the hard winter in much of Region 2 in 2019. In most, but not all districts, calf recruitment was higher in

2020 and 2021 than in 2019, but considerable variation occurred between and within some districts. Remember that when discussing calf: cow ratios, we're talking about calves that are 8-11 months old, rather than calves like the ones pictured below, which were only a few days old when photographed on 5 June 2021 in the Blackfoot.



Find all the Quarterlies at [Region 2 | Montana FWP \(mt.gov\)](https://www.mt.gov/Region2)



Garnet Mountains, July 4, 2021