Montana Fish, Wildlife & Parks
Region 2 Wildlife Quarterly

June 2016

Special Edition
Latest Elk Survey Results

Technical Bulletin

More data/Science based

Bull elk being counted and classified in the Bitterroot. Rebecca Mowry photo.

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June 2016

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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.

Regional Summary—1965-2016

by the Region 2 Wildlife Staff

REGION-WIDE ELK TREND

Elk counts in FWP Region 2 totalled a record 24,615 in 2015, and were similar again in 2016 for the hunting districts that were surveyed (Figure 1). Most of the Upper Clark Fork districts were not surveyed in 2016. Region 2 comprises 30 elk hunting districts (HDs), covering 10,549 square miles (Figure 2).

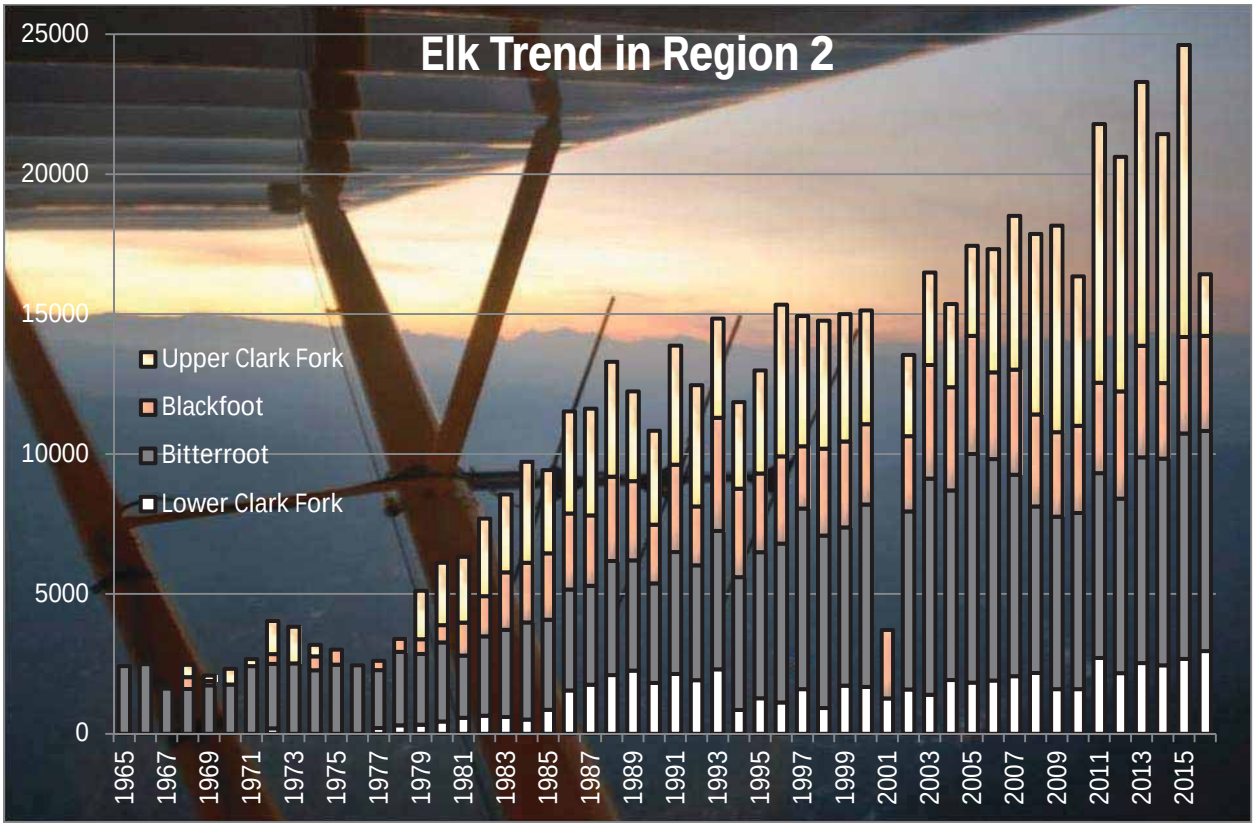
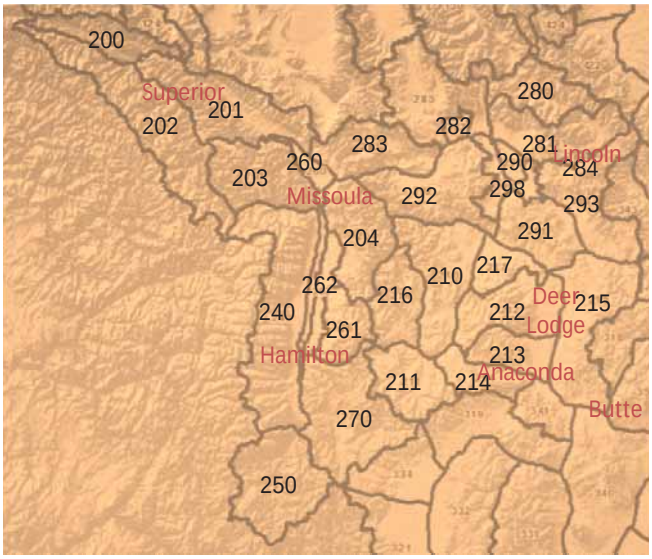


Figure 1. Elk trend counts in the Lower Clark Fork, Bitterroot, Blackfoot and Upper Clark Fork watersheds of Region 2, from 1965 to 2016.



The data in Figure 1 are collected to reveal the trend in elk numbers. Greater effort and expense would be required to collect data that would generate reliable estimates of the true population size, and are not required to conserve and manage elk. With those limitations acknowledged, FWP infers from its counts that the average elk density in Region 2 lies between 2.3 and 3.0 elk per mile^2.

Figure 2. Elk hunting districts in Region 2, reflecting changes in hunting district (HD) boundaries that were enacted in 2016, including new HD 217, and adjustments to HDs 204, 212, 261 and 262.

METHODS

Elk trend surveys, as they are called, are conducted in the same way every year. Elk habitat in Region 2 is divided into elk survey units. FWP biologists and pilots are responsible for the survey units in their areas, and to the extent possible, the same biologist and pilot conduct the same surveys in the same aircraft--typically a Piper Super Cub--year after year. Surveys are flown in the first or last hour-or-two of daylight when most elk are most observable. In the open habitats of Region 2, such as the Deer Lodge Valley, elk trend surveys are conducted in mid-winter (January-March), when elk are congregated, sometimes in groups of several hundred individuals, in predictable places. On the forested winter ranges, such as Mineral County, elk trend surveys are conducted in early spring (late March to early May), when elk move out of the timber to feed on emerging green growth in low-elevation fields and rangelands where the snow melts first. Generally, each of the four wildlife biologists who conduct elk trend surveys in Region 2 are occupied for a month-or-more while trying to cover all of their survey units, flying every day when the weather allows them to float safely at low altitudes in the mountains. The timing window is narrow and some surveys are not completed in years when wind, rain or fog prevent flights before the elk disperse from their winter ranges.

The region-wide elk trend (Figure 1) broadly depicts the trajectory of elk restoration, from decimation in the early twentieth century to hundred-year highs at the present time, but the regional totals are misleading for purposes much finer than that. Surveys were not conducted in much of the region in the 1960s, for example, and individual survey units were variably added or not completed in any given year since. Trends pertaining to individual survey units or groups of units are the most reliable and most indicative of elk population dynamics for conservation and management purposes.

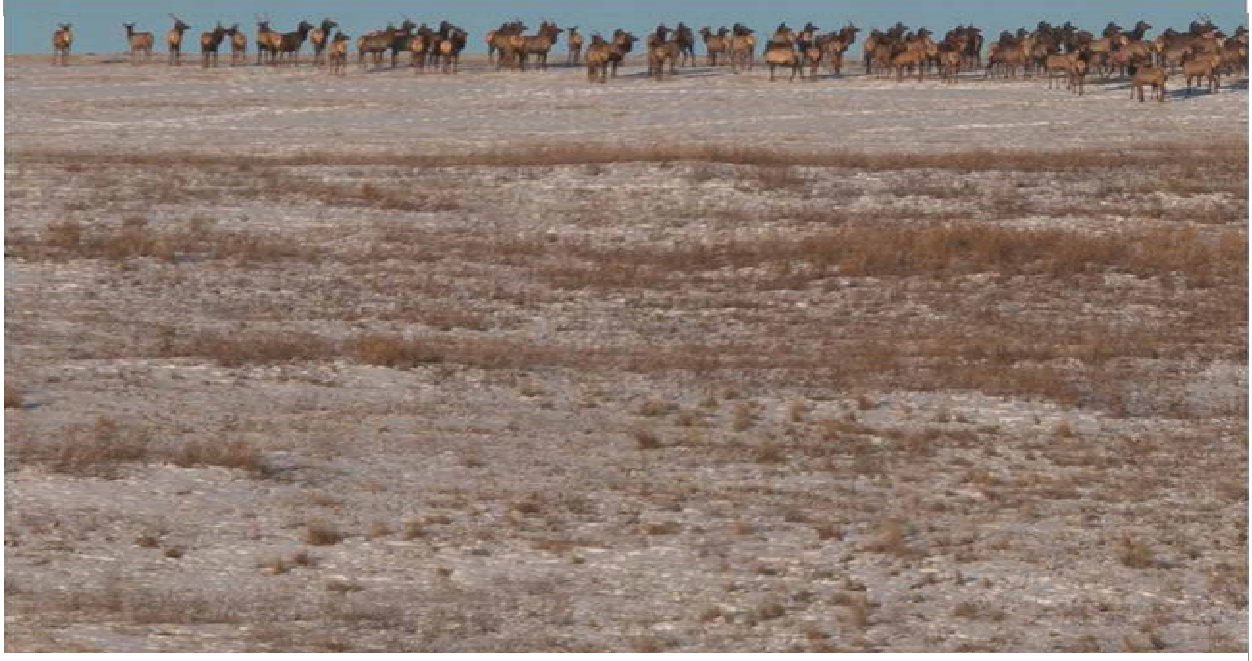


Figure 3. Photograph by Paul Queneau, taken in the North Hills of the Missoula Valley. The left half of the elk group in Mr. Queneau's photograph is shown on this page.

Elk trend surveys in most elk survey units across Region 2 yield quite predictable results. While each annual survey involves only about 5 minutes of an individual elk's year, biologists and pilots learn to expect nearly the same numbers of elk in nearly the same locations, year after year. This predictability and acquired familiarity allow biologists to question their results if elk are not found in the right numbers or the right places, and sometimes flights are repeated to account for unexpected variations. While elk numbers and distribution normally don't vary dramatically between years, annual surveys allow biologists to check for any warnings of future declines due to one or more years of poor recruitment, or for opportunities to recommend higher numbers of antlerless permits or licenses when recruitment is high.

When the biologist and pilot spot a group of elk, they first obtain a total count of that group, be it 1, 2, or 200. Usually this is accomplished by circling at an elevated altitude so that the elk are not spooked into the timber. Biologist Liz Bradley has made it a habit to photograph as many of her elk groups as practical, for the purpose of checking her counts and classifications in the office, and usually she will take her photographs at this point in the survey, as well. Following this, the pilot will make one or more passes at lower altitudes to give the biologist a close look at body conformation to pick out calves that have survived their first winter, spike bulls, and branched bulls. These classifications are later converted to calf: cow and bull: cow ratios for use in assessing population performance and recommending permit or license quotas for the coming hunting season. A waypoint is recorded on the biologist's GPS unit to preserve the elk group's location.

Figure 4. Photograph by Paul Queneau, the right half. The curvature of the earth confounds ground surveys, but aerial surveys allow biologists to count any elk that can't be seen beyond the horizon.

Lower Clark Fork Hunting Districts—2016 Elk Update

by Liz Bradley

HUNTING DISTRICT 200

FWP added elk trend surveys in Hunting District (HD) 200 in 1986, with the advent of the Lower Clark Fork Elk Project. A helicopter is needed to find elk in small openings between the trees (Figure 5), and the timing of the survey is critical to its success. Due to the cost of helicopter time, surveys in HD 200 are typically not flown every year, though the survey was flown in 2015 and repeated in 2016 to help interpret the long-term trend. We are managing at this time under the assumption that the elk population has declined since 2011, and because of this, FWP plans to make HD 200 a survey priority for the near future.

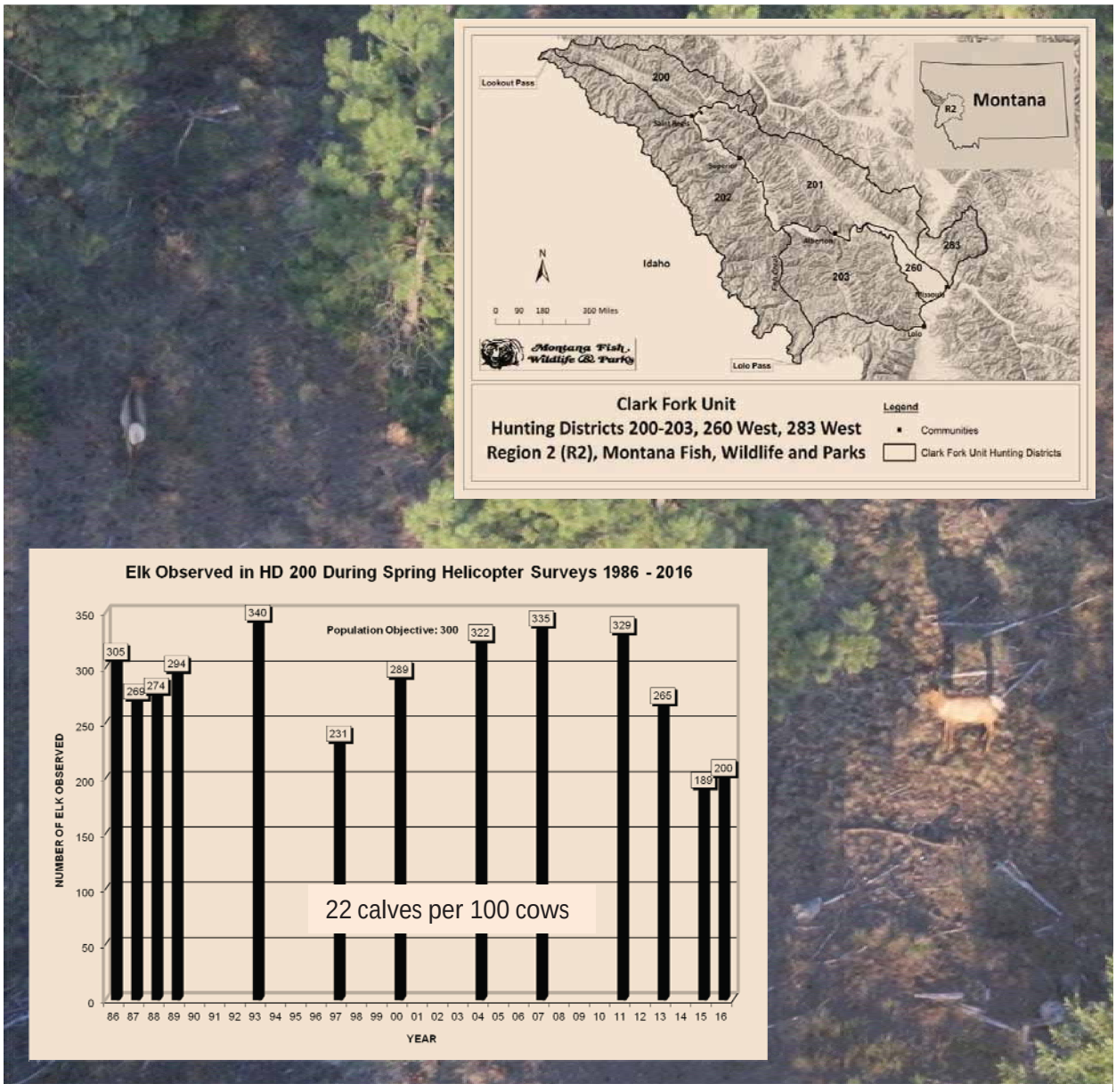


Figure 5. Photograph by Liz Bradley, taken from a helicopter while surveying HD 200 in April 2016.

Lower Clark Fork Hunting Districts—2016 Elk Update

HUNTING DISTRICT 201

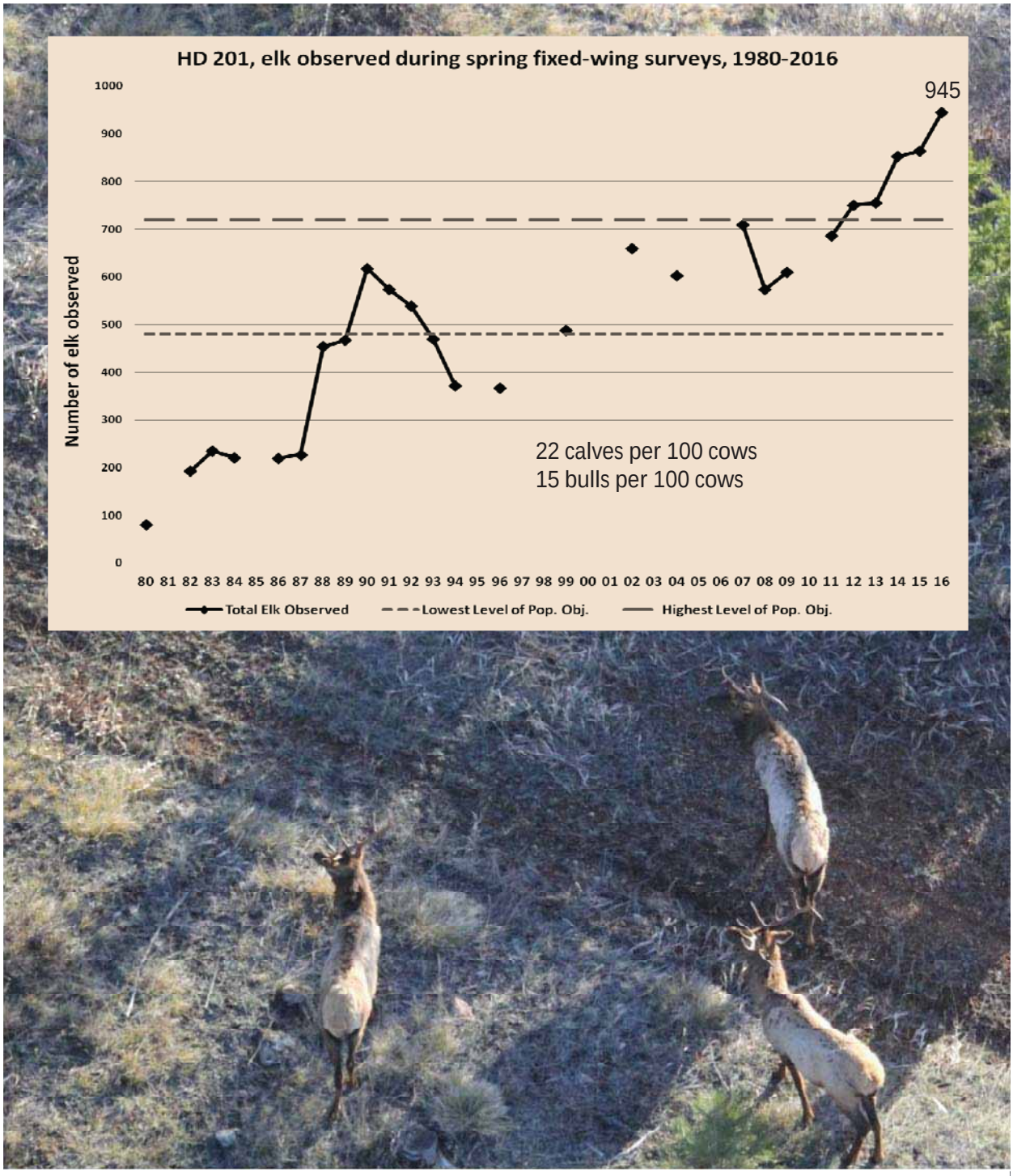


Figure 6. Photograph by Liz Bradley, taken while flying elk trend surveys

Lower Clark Fork Hunting Districts—2016 Elk Update

HUNTING DISTRICTS 202 & 203

Only portions of HD 202 are surveyed to discern the trend in the elk population: Cold-Thompson, Cougar-Quartz and North Fork Fish-Williams. The survey results can be difficult to interpret, depending on elk movements in and out of the survey units. Two points are shown for 2016 in the graph of elk counts for HD 202 (Figure 7), depending on whether certain elk are attributed to HD 202 or 203.

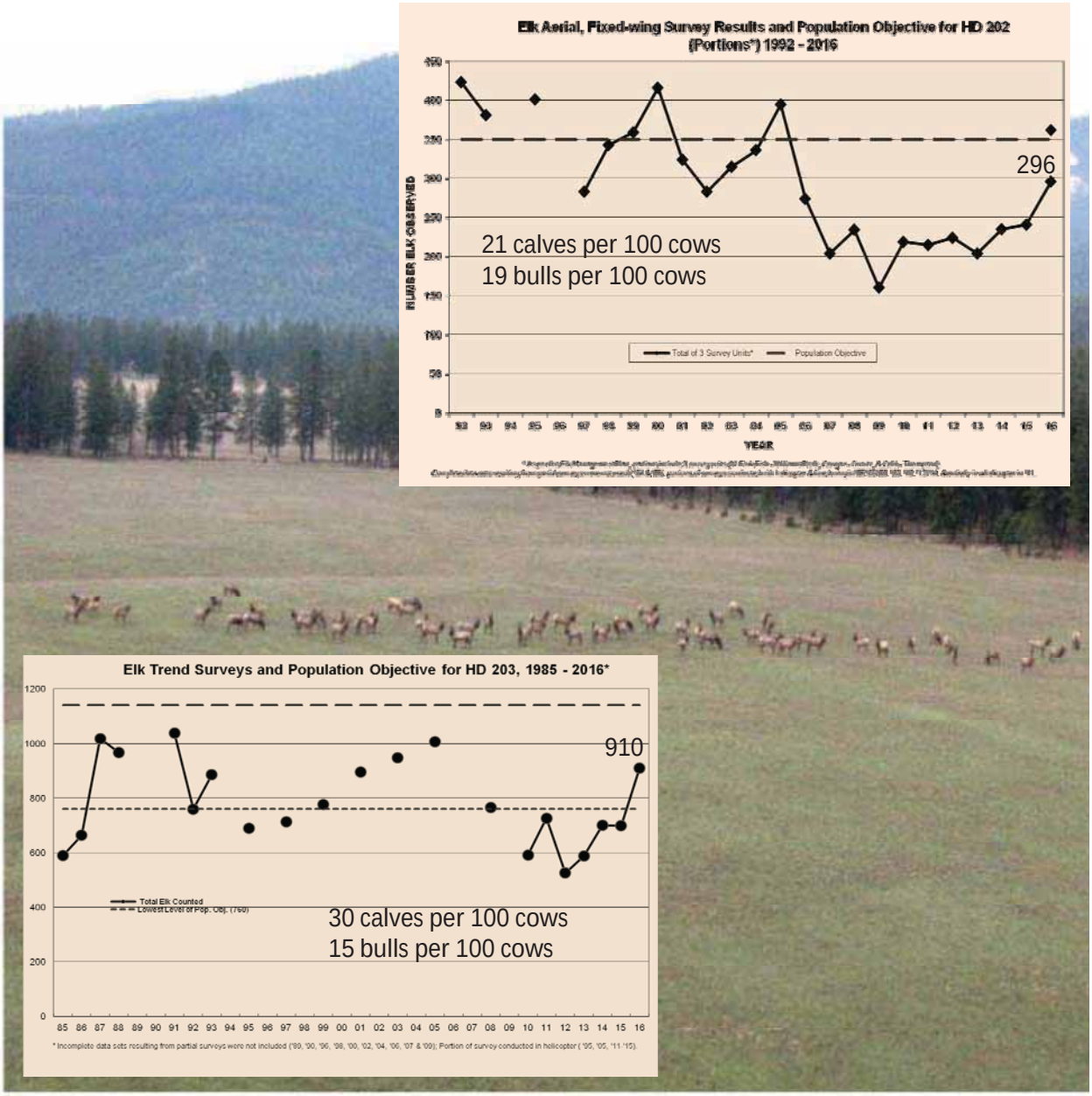


Figure 7. Photograph by Liz Bradley, taken while flying elk trend surveys in HD 202.

Lower Clark Fork Hunting Districts—2016 Elk Update

HUNTING DISTRICT 283 WEST

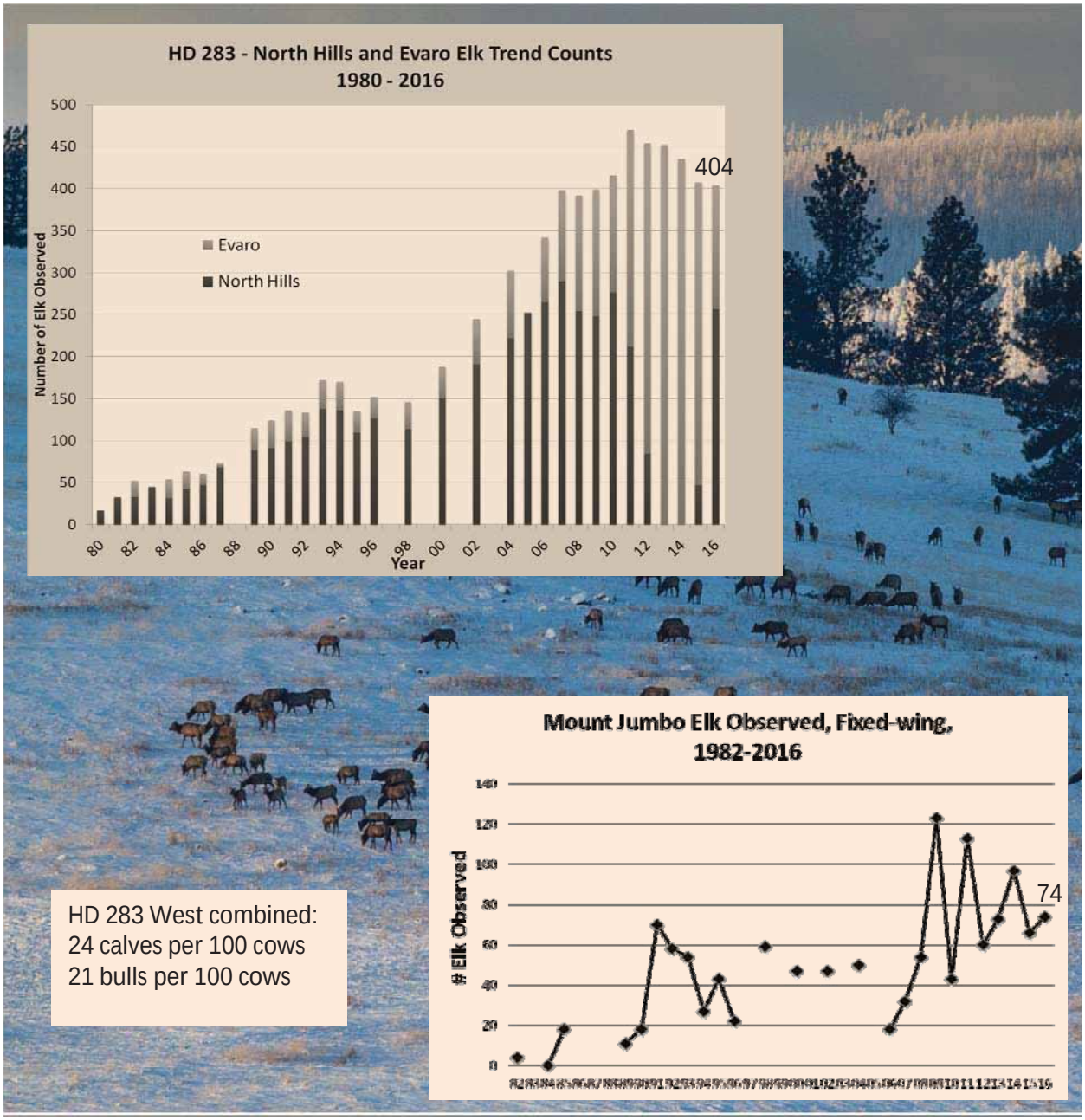


Figure 8. Photograph by Paul Queneau taken of the North HIlls.

Bitterroot Hunting Districts—2016 Elk Update

by Rebecca Mowry

Data for the Bitterroot districts have been recombined to reflect the current hunting district boundaries, which were changed substantially in 2014 to match elk migrations identified in the Bitterroot Elk Study. So, the graphs on the following pages are comprised of current and historic counts within the current boundaries for that district.

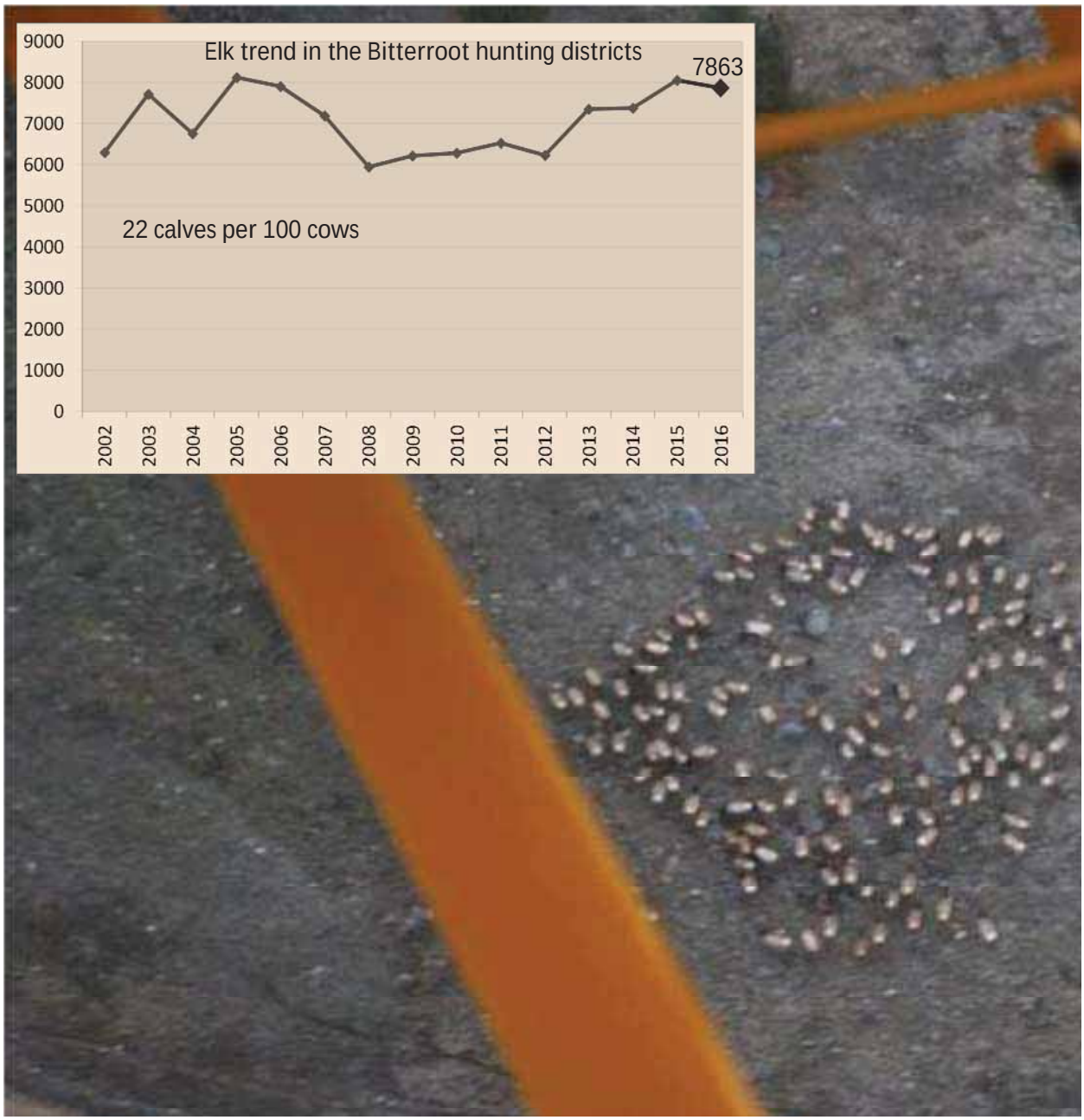


Figure 9. Photograph by Rebecca Mowry, from above the wing strut of a Piper Super Cub.

Bitterroot Hunting Districts—2016 Elk Update

HUNTING DISTRICT 204

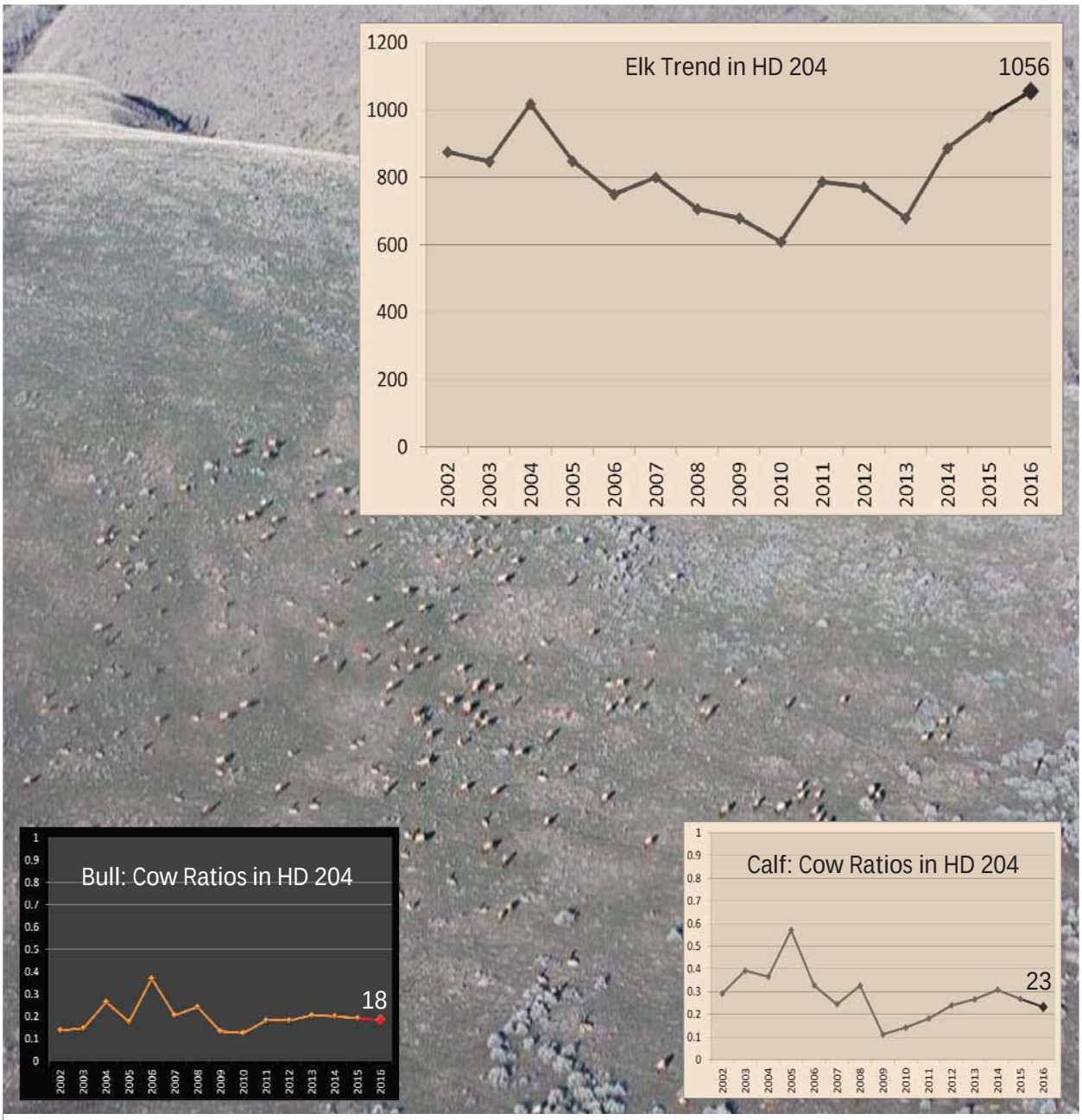


Figure 10. Photograph by Rebecca Mowry, taken over Hunting District 204.

Bitterroot Hunting Districts—2016 Elk Update

HUNTING DISTRICT 240

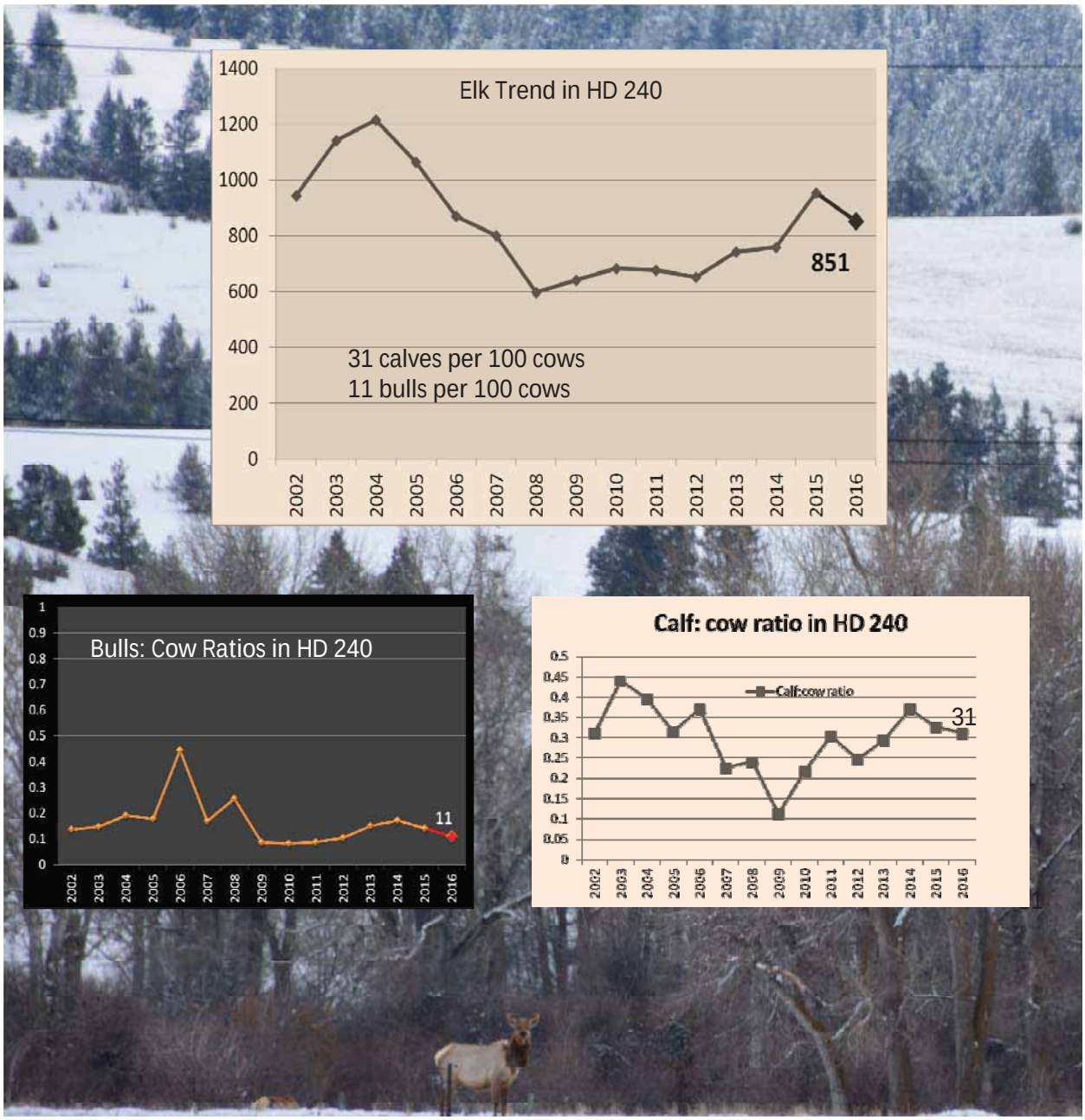


Figure 11. Photograph by Mike Thompson, taken in Hunting District 240 in March 2016.

Bitterroot Hunting Districts—2016 Elk Update

HUNTING DISTRICT 250

This spring's elk count in HS 250 was 792, which corresponds with the current boundaries of the district. For those who have been following the trends closely in HD 270, the count pertaining to the historic boundary of HD 250 would be 1,062 elk (Figure 12).

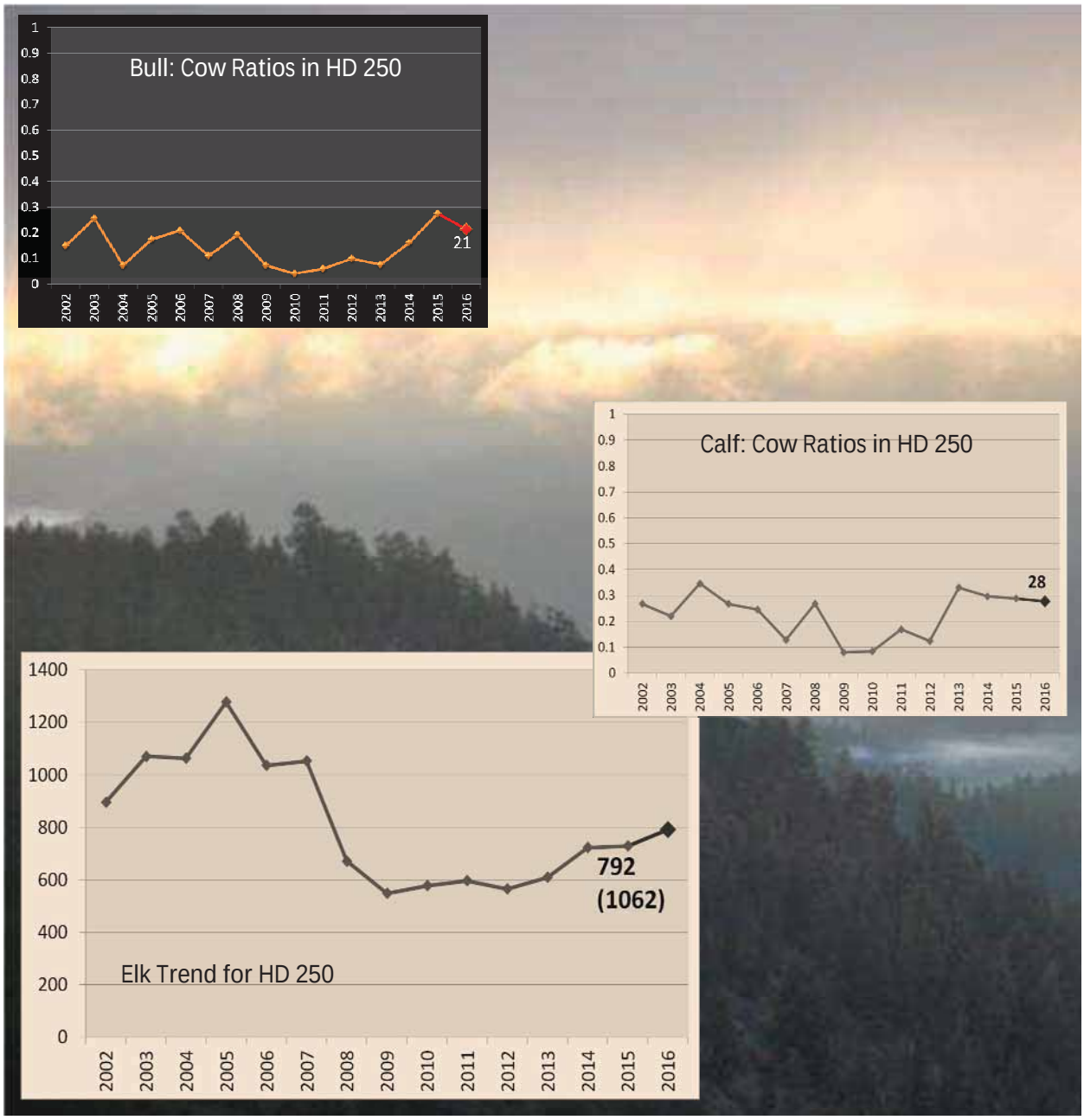


Figure 12. Photograph by Rebecca Mowry, in the West Fork.

Bitterroot Hunting Districts—2016 Elk Update

HUNTING DISTRICT 261

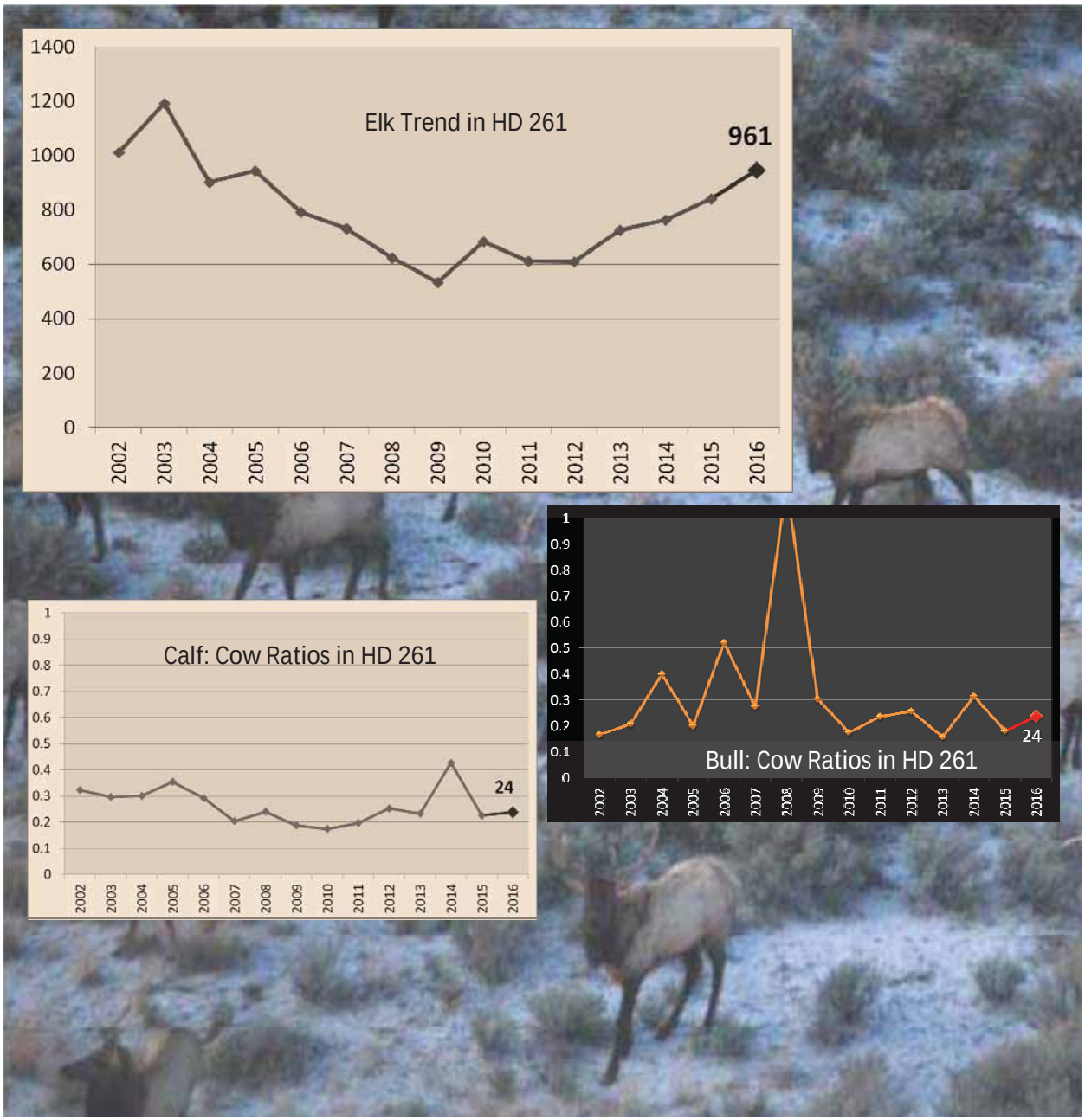


Figure 13. Photograph by Rebecca Mowry,, taken in HD 261 during an elk trend flight in 2016.

Bitterroot Hunting Districts—2016 Elk Update

HUNTING DISTRICT 270

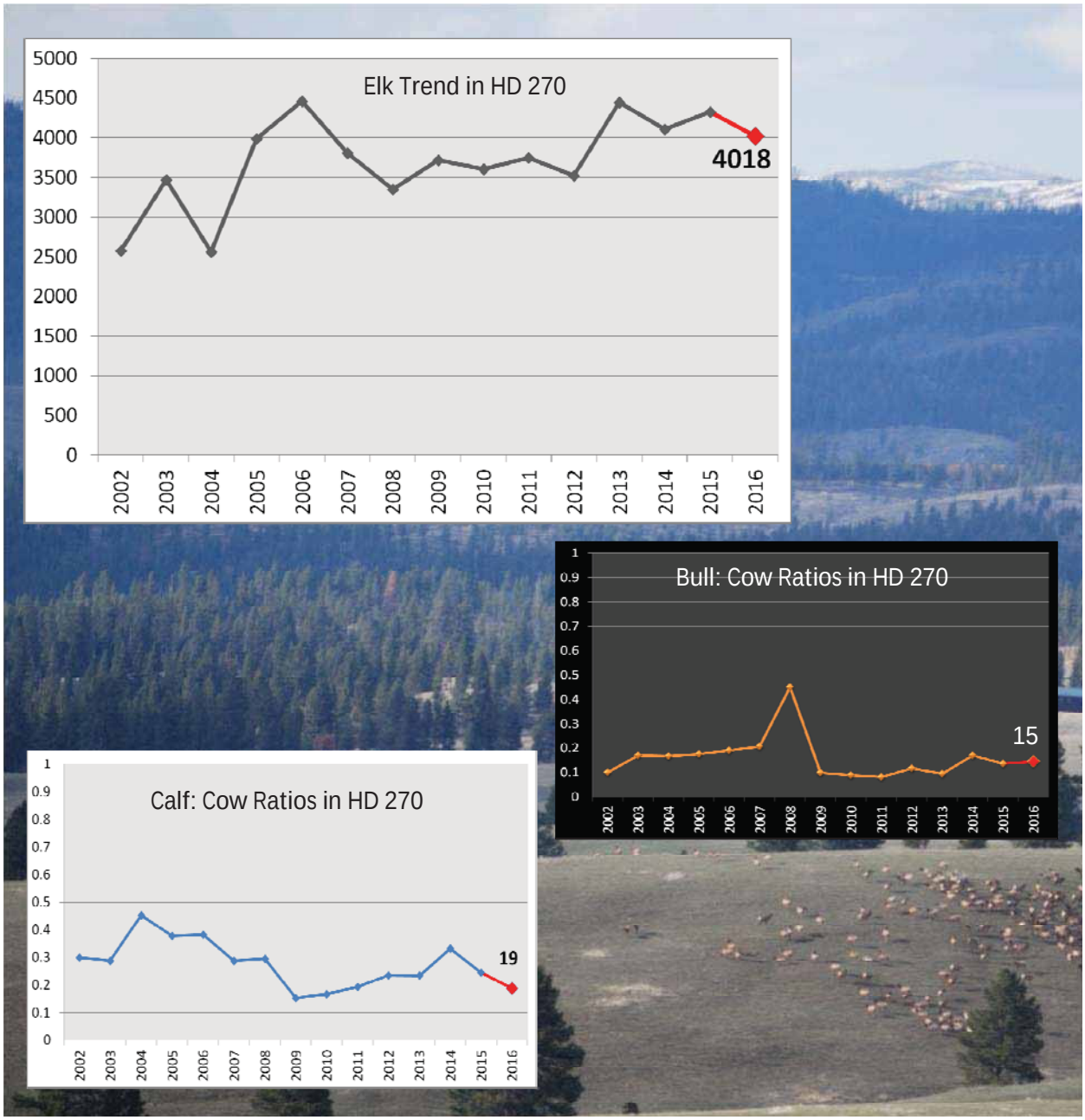


Figure 14. Photograph by Craig Jourdonnais, taken in the Bitterroot during an elk trend flight in 2013.

Bitterroot Hunting Districts—2016 Elk Update

ELK COUNTS IN THE RIVER BOTTOM

FWP began making special efforts to count elk in the Bitterroot River bottoms with the 2013 elk trend survey. Generally, elk numbers along the river are increasing and constitute a growing elk management challenge.

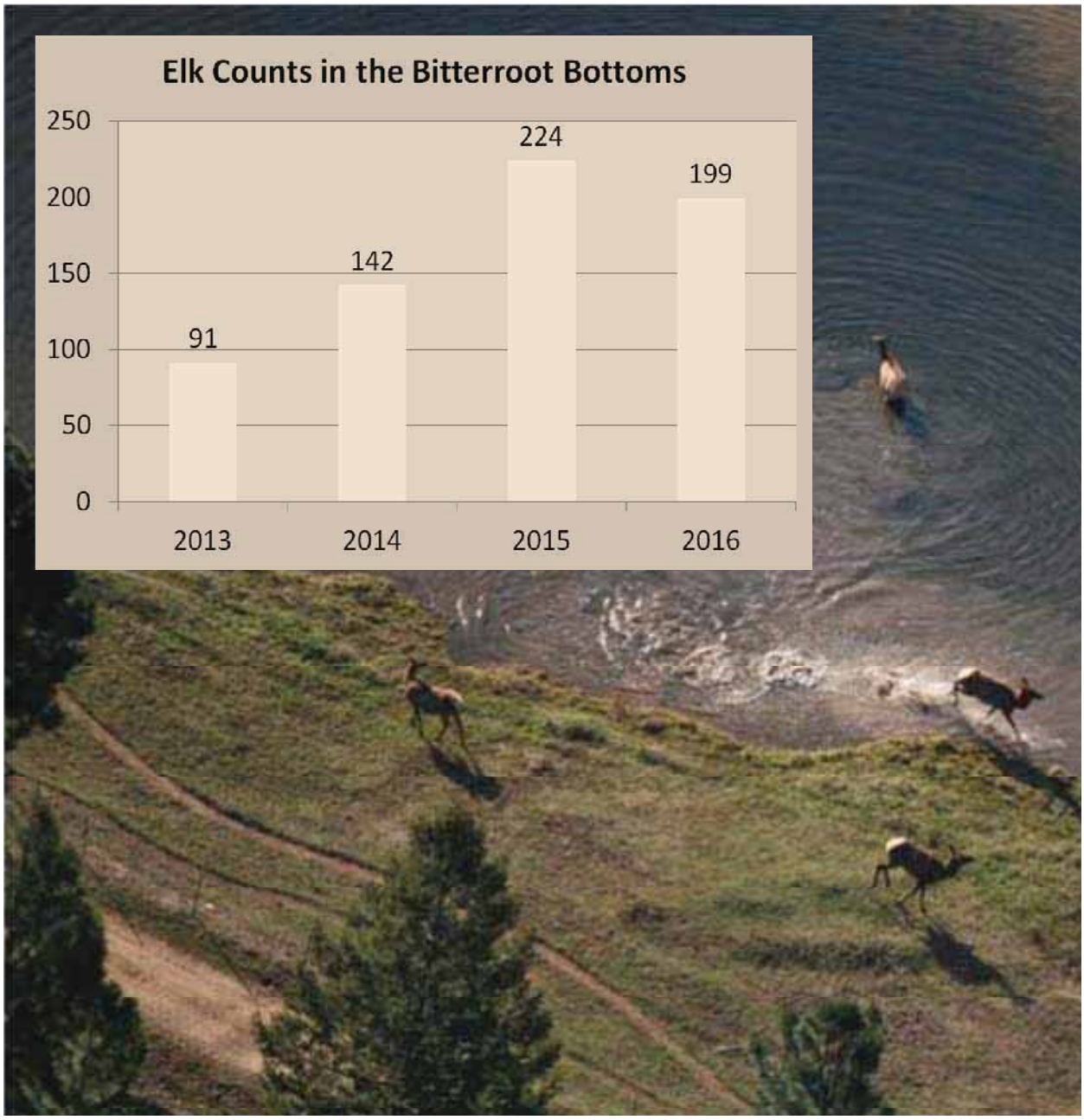


Figure 15. Photograph by Rebecca Mowry during a spring survey in 2015.

Blackfoot Hunting Districts—2016 Elk Update

by Scott Eggeman

HUNTING DISTRICT 281

Elk trend counts in this area are variable, in part due to the migratory nature of this elk population. This combined with the variability in aircraft and pilot availability during the narrow window for effective elk surveys result in good years and relatively poor years for counting. It appears that 2016 was a good one.

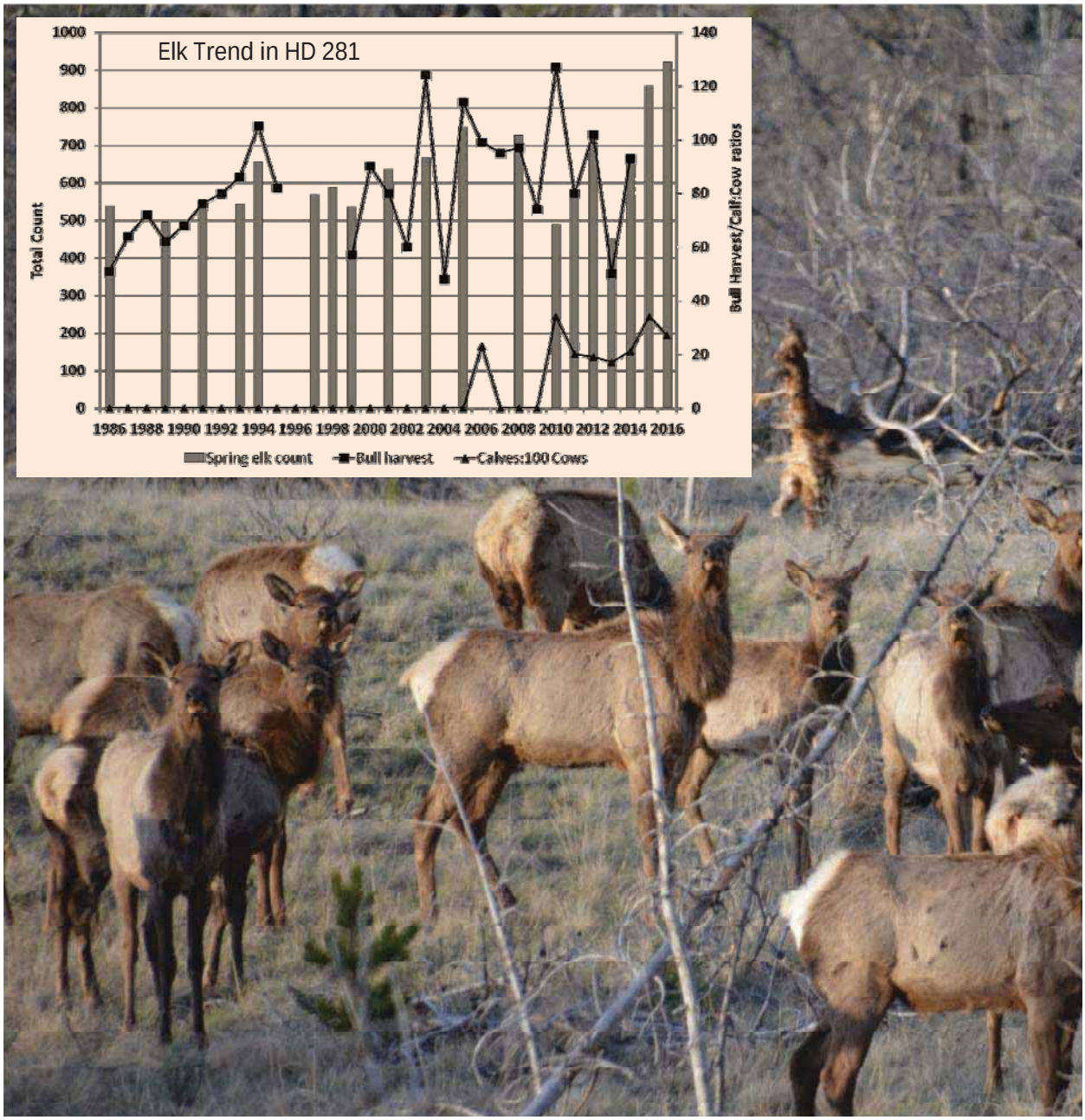


Figure 16. Photograph by Mike Thompson during elk survey time in HD 281.

Blackfoot Hunting Districts—2016 Elk Update

HUNTING DISTRICT 282

It has been encouraging to see calf recruitment—represented by the calf: cow ratio—rise in recent years from concerning low levels in 2012-2014. A large proportion of the elk that winter in HD 282 migrate to backcountry areas within and around the Bob Marshall Wilderness Area in spring, based on telemetry data last collected in the late 1980s and early 1990s.

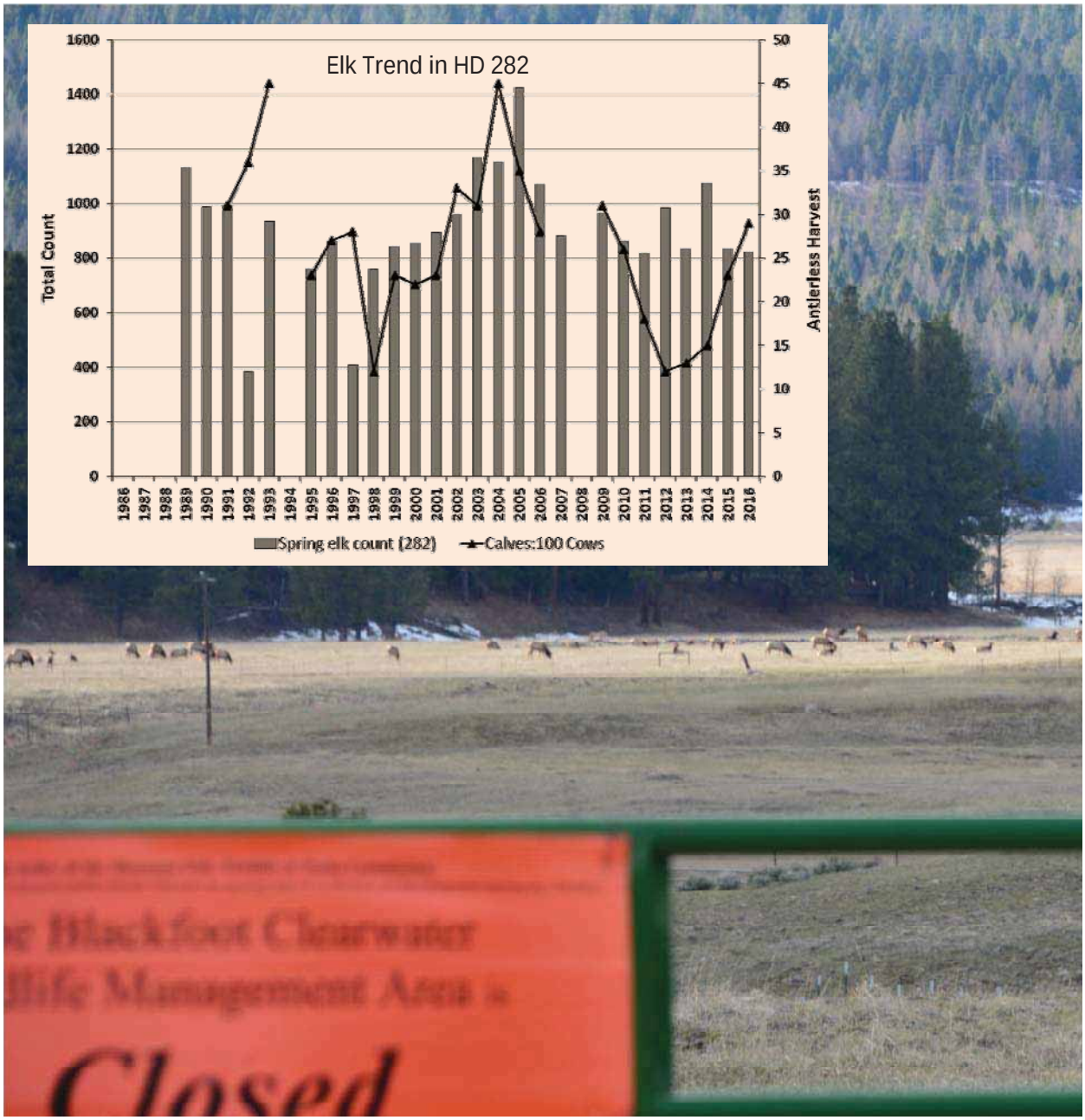


Figure 17. Photograph by Mike Thompson in March 2016, while the Blackfoot-Clearwater Wildlife Management Area remained closed to public access, as usual, to allow elk undisturbed use of the winter range.

HUNTING DISTRICT 283 EAST

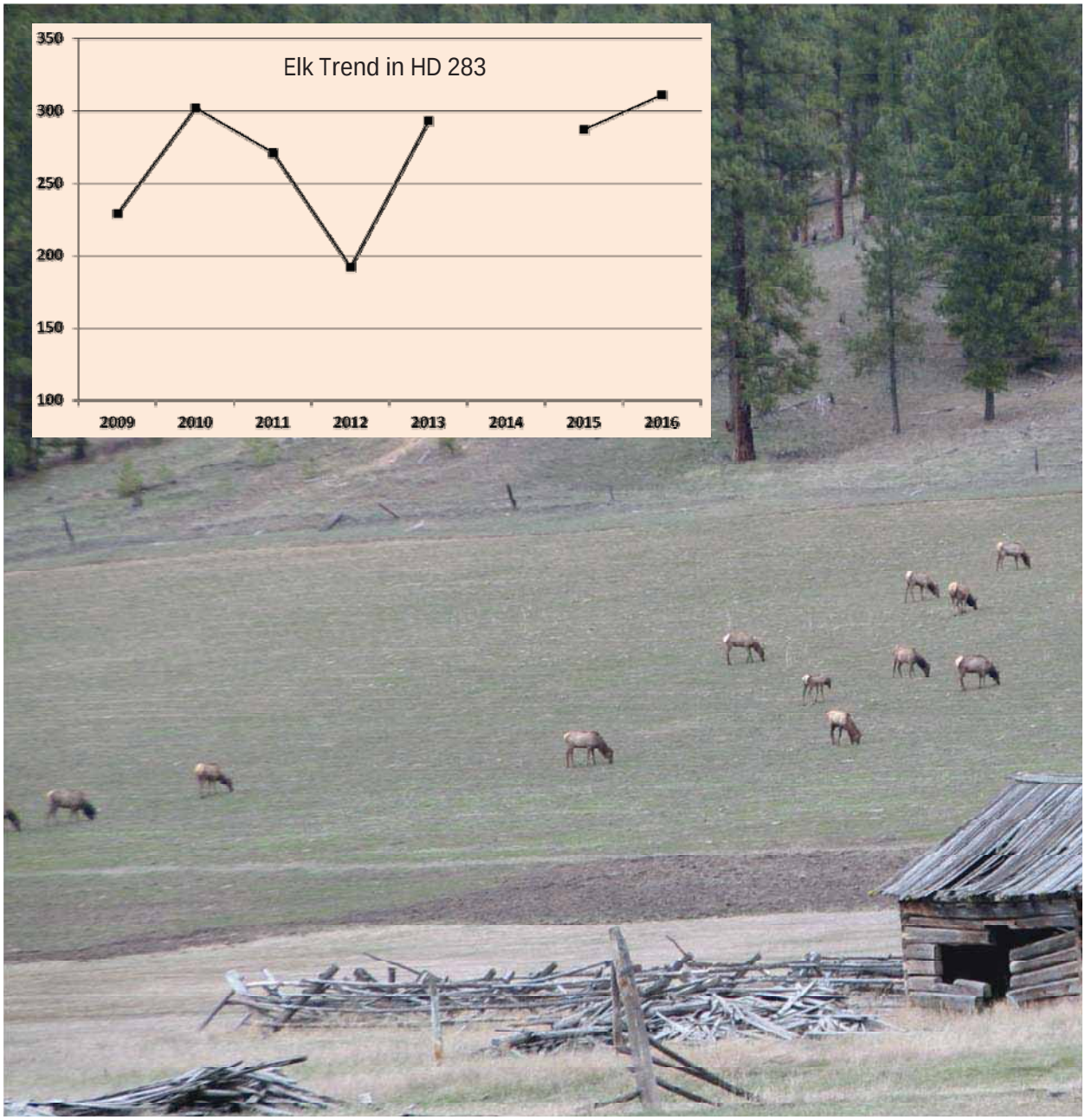


Figure 18. Photograph by Mike Thompson in the east portion of HD 283 in April 2015.

Blackfoot Hunting Districts—2016 Elk Update

HUNTING DISTRICTS 290-298

HDs 290 & 298 lie in the Nevada Valley, including Ovando and Helmville, and comprise an elk management strategy to address excessive elk numbers on private agricultural lands. Elk numbers remain above the objective of 600 that was set when HD 298 was established in 2008, though the elk count has declined from counts in 2008-2009.

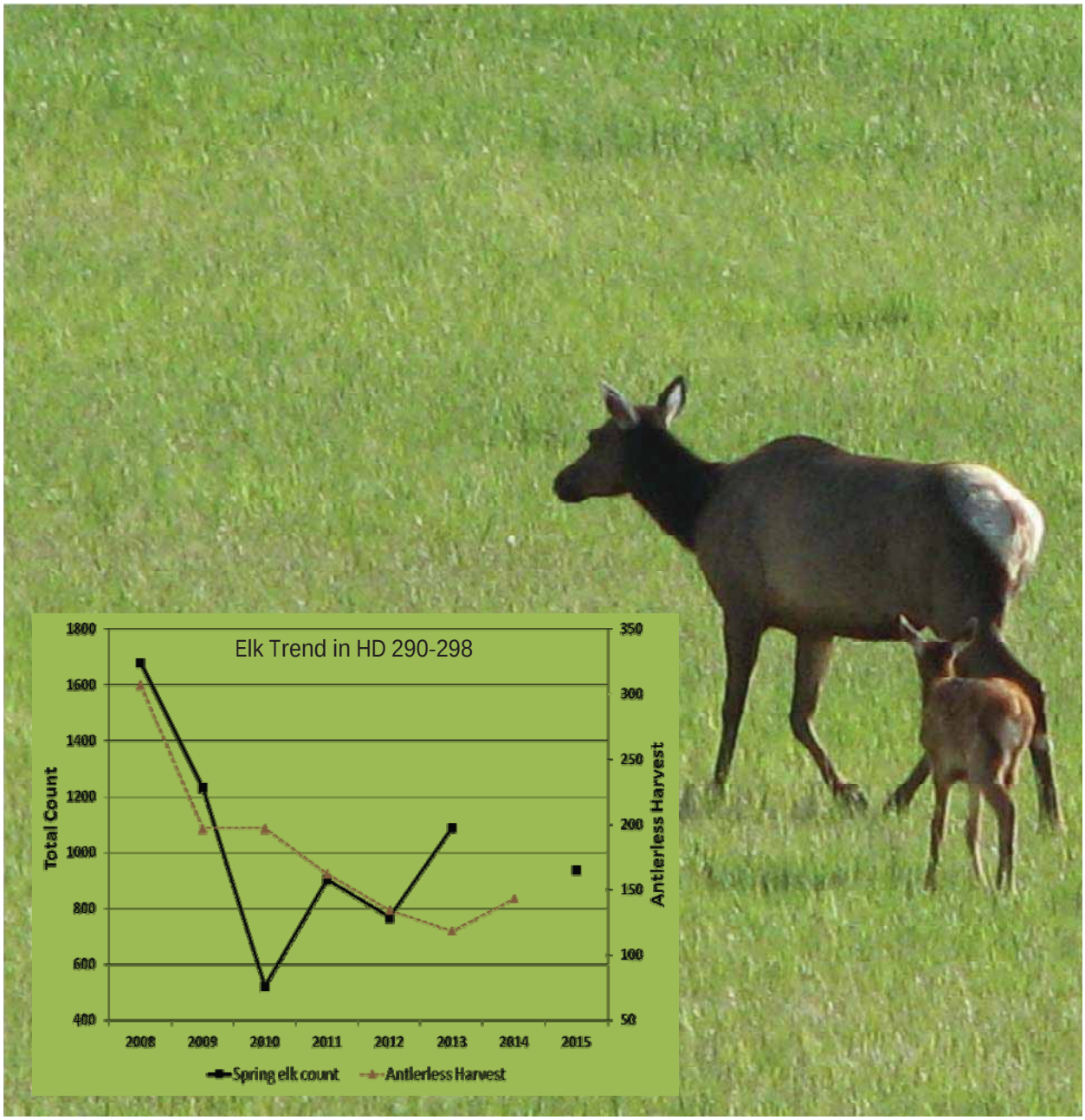


Figure 19. Photograph by Mike Thompson in HD 290 in July 2015.

HUNTING DISTRICT 292

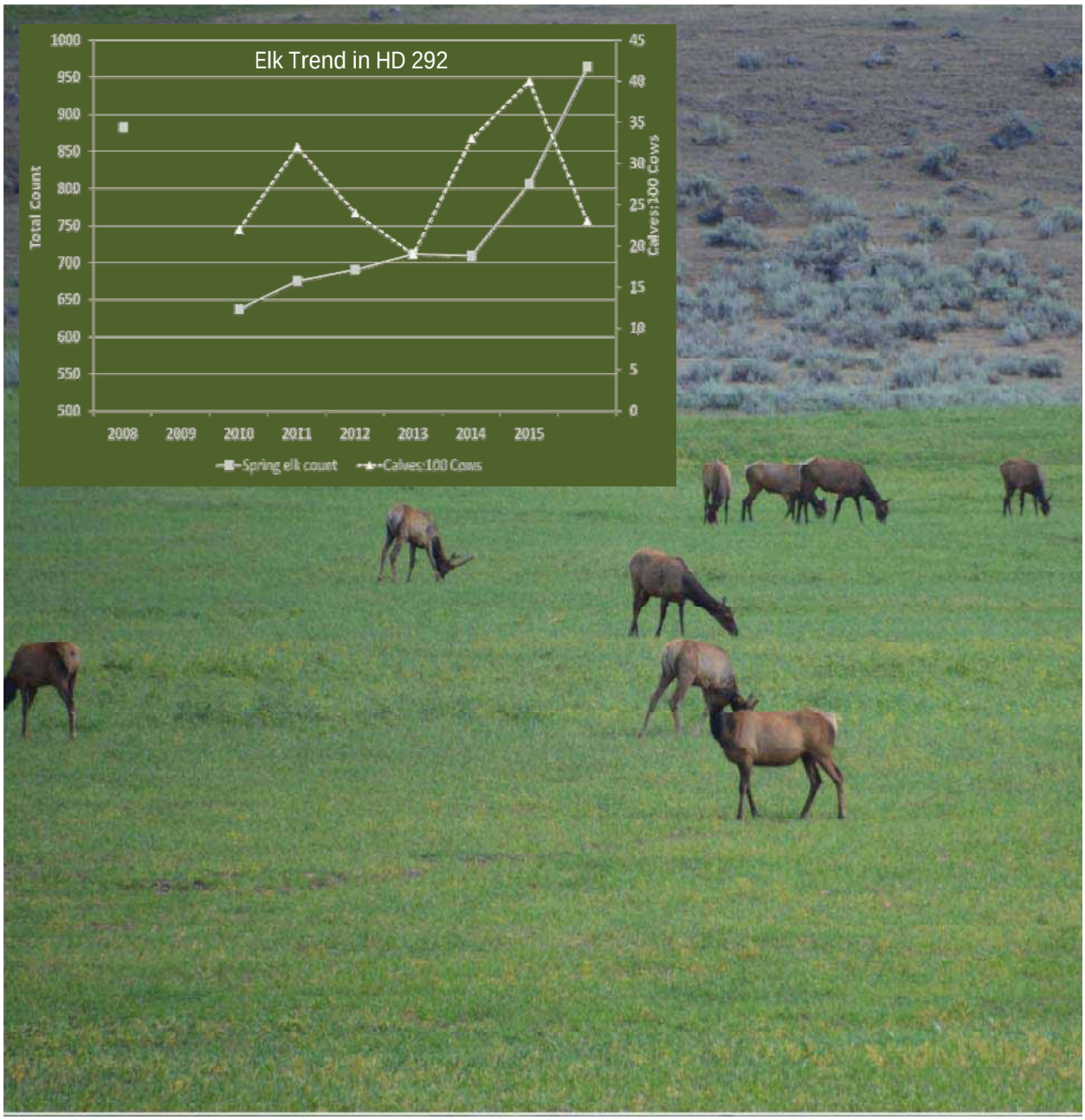


Figure 19. Photograph by Mike Thompson in HD 292 in 2015.

Blackfoot Hunting Districts—2016 Elk Update

HUNTING DISTRICT 293

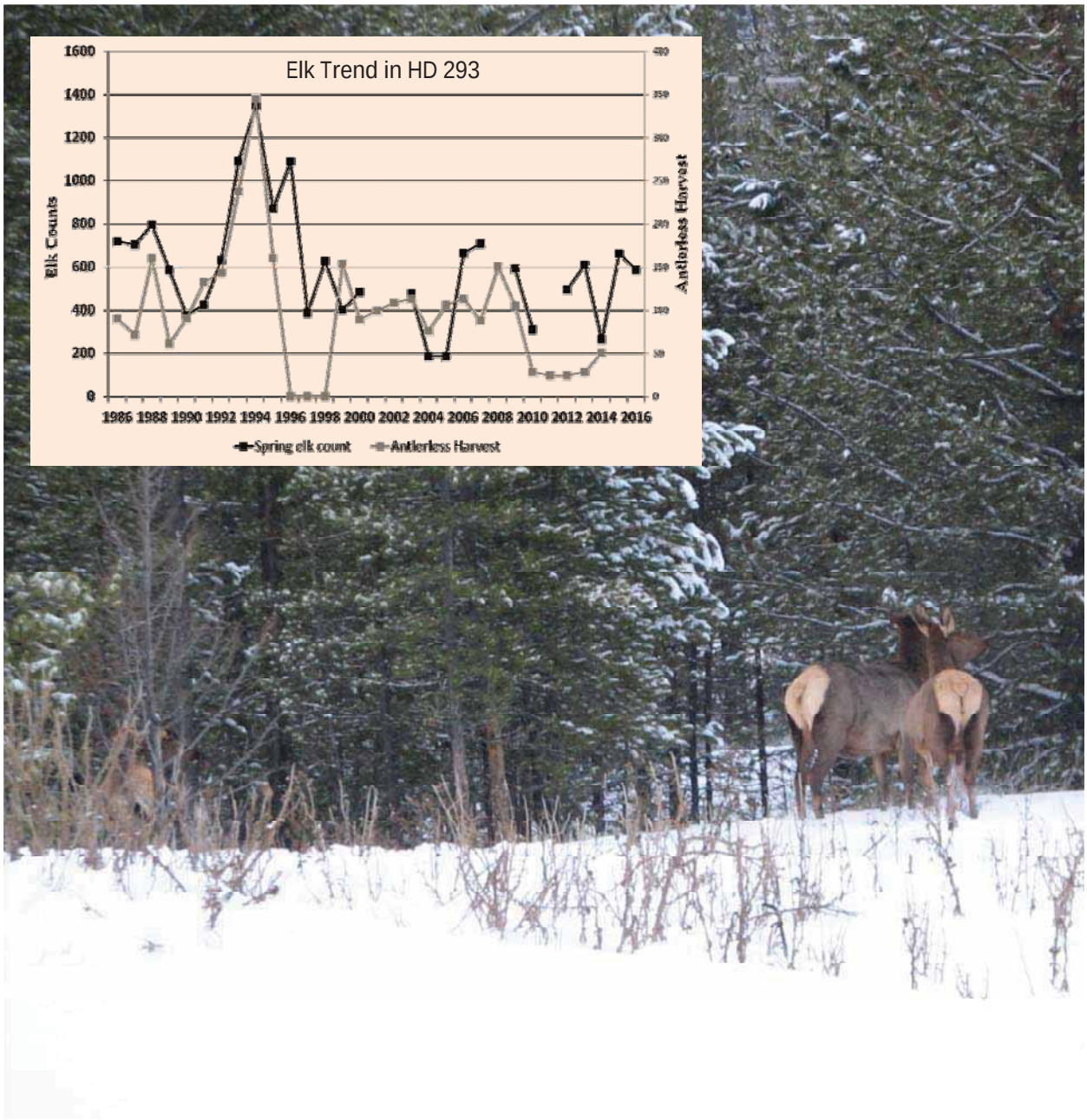
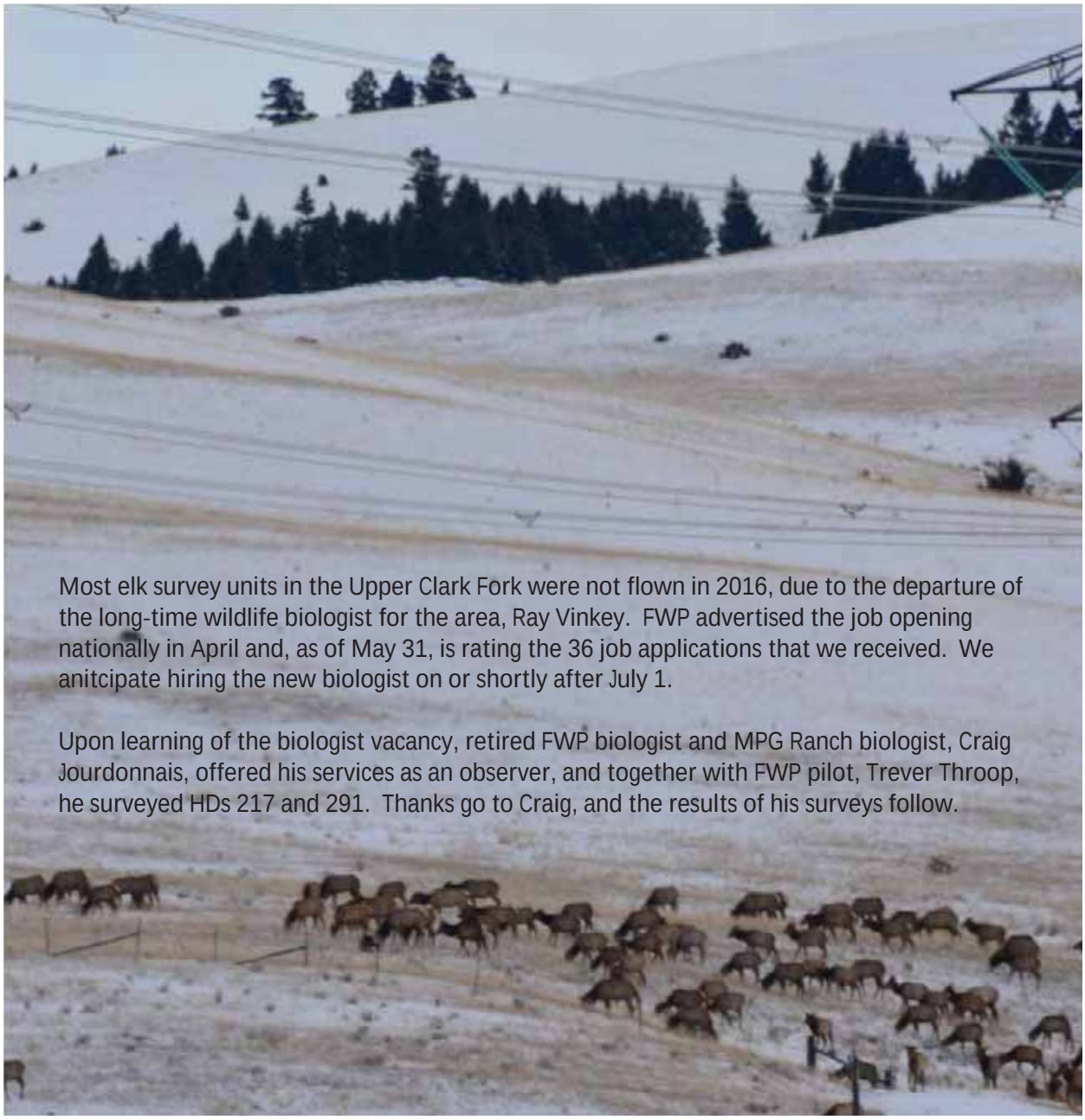


Figure 20. Photograph by Mike Thompson in HD 293 in 2014.

Upper Clark Fork Hunting Districts—2016 Elk Update

by Mike Thompson



Most elk survey units in the Upper Clark Fork were not flown in 2016, due to the departure of the long-time wildlife biologist for the area, Ray Vinkey. FWP advertised the job opening nationally in April and, as of May 31, is rating the 36 job applications that we received. We anitcipate hiring the new biologist on or shortly after July 1.

Upon learning of the biologist vacancy, retired FWP biologist and MPG Ranch biologist, Craig Jourdonnais, offered his services as an observer, and together with FWP pilot, Trever Throop, he surveyed HDs 217 and 291. Thanks go to Craig, and the results of his surveys follow.

Figure 21. Photograph by Mike Thompson in HD 212 in 2016.

Upper Clark Fork Hunting Districts—*2016 Elk Update*

HUNTING DISTRICT 217

The elk in HD 217 were surveyed from Boulder Creek to Gold Creek in 2016, leaving that portion of the district east of Gold Creek without a survey in 2016. There can be variability in this survey resulting from elk crossing back and forth across Interstate 90, and residing in HD 217 when the survey is conducted in one year, and in HD 291 in the next year.

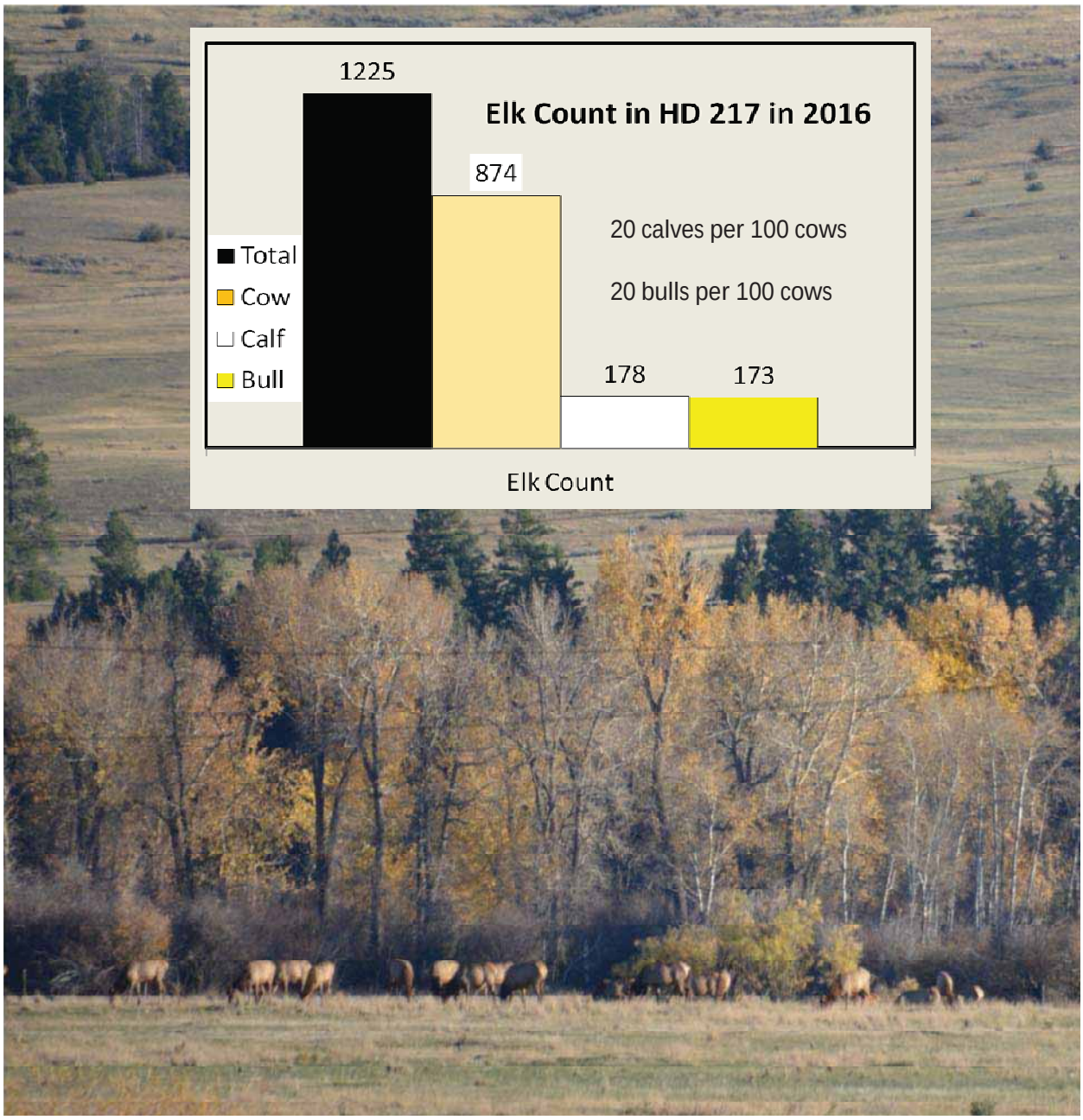


Figure 22. Photograph by Mike Thompson in HD 217 in 2014.

Upper Clark Fork Hunting Districts—*2016 Elk Update*

HUNTING DISTRICT 291

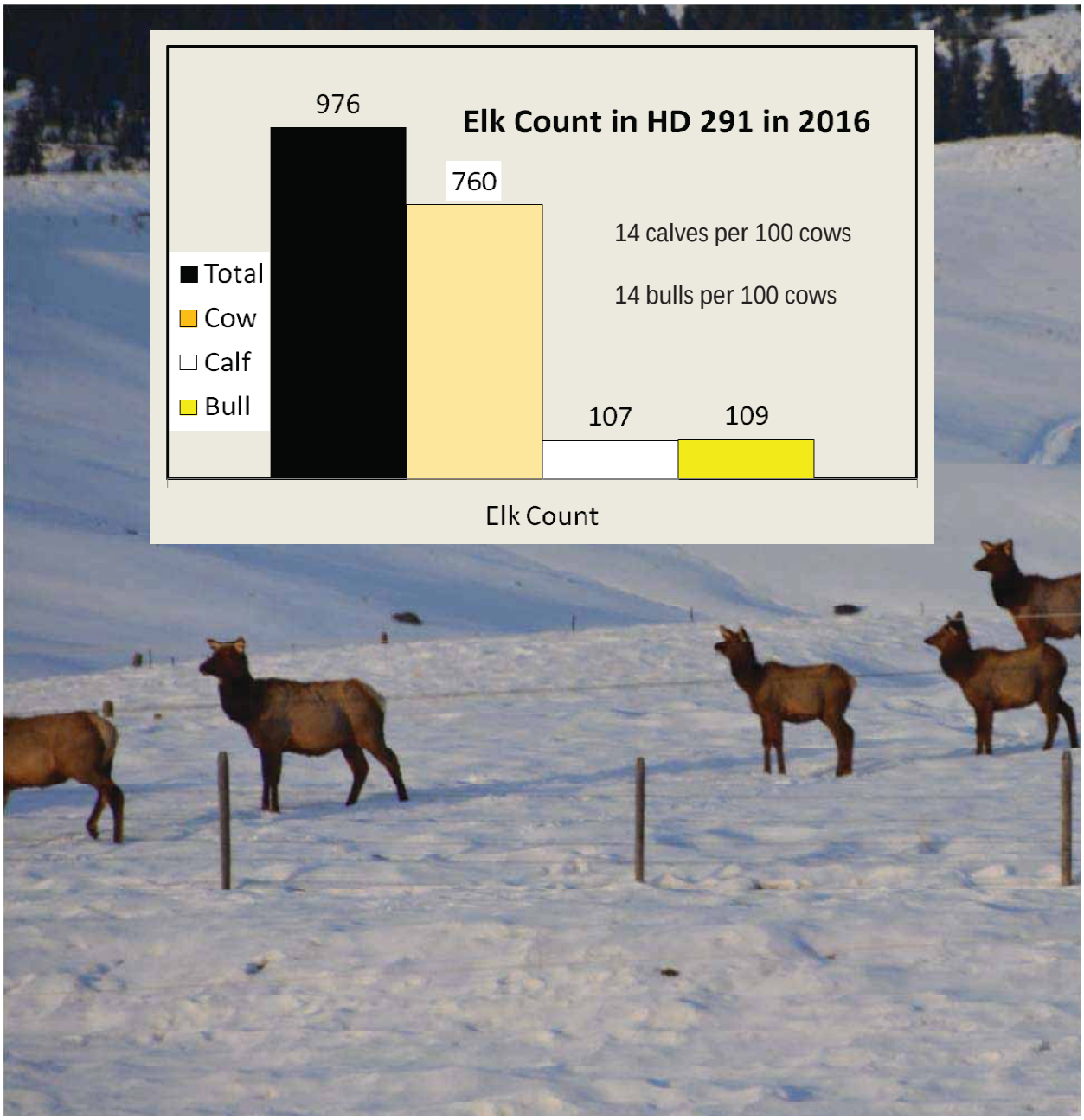


Figure 23. Photograph by Mike Thompson in HD 291 in 2016.