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WRANGELL-ST. ELIAS NATIONAL PARK AND PRESERVE
CHISANA CARIBOU MANAGEMENT PLAN UPDATE

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SUMMARY OF KEY POINTS

- **The management plan for the international Chisana caribou herd is outdated (prepared in 2012 for 2010-2015 timeframe) and is being revised.** The working group updating the plan consists of members from the Government of Yukon (working-group leader), Alaska Department of Fish and Game (Tok Field Office), White River First Nation, Kluane First Nation, U.S. National Park Service (Wrangell-St. Elias National Park and Preserve), and U.S. Fish and Wildlife Service (Tetlin National Wildlife Refuge).

- **Primary changes in the 2023 plan relative to the 2012 plan (described briefly in this update, below):**
  - A strengthened commitment to monitoring.
  - A new decision-making framework for harvest management that retains a cautious approach (bulls-only harvest not exceeding two percent of the estimated total population size), allows for greater harvest opportunity, and clarifies the harvest decision-making process.
  - A new strategy to avoid incidental harvest of Chisana caribou when targeting other herds.

- **Additional changes in the 2023 plan relative to the 2012 plan (*not* described in this update):**
  - A new strategy regarding considerations for Chisana caribou in planning and decision-making processes.
  - Consolidated content regarding commitments to increasing knowledge about habitat, climate, and predator influences.

- **Public comments on the draft 2023 management plan update are welcome and should be provided to Wrangell-St. Elias (WRST_subsistence@nps.gov) by the deadlines listed below.**
  - Advisory group comments should be provided by the end of the groups' fall 2023 meeting.
  - Comments from other parties should be provided by the end of October.

Introduction

The Chisana caribou herd is a small international herd occurring in Alaska and the Yukon on the Klutlan Plateau and near the headwaters of the White River. The herd ranges across international boundaries and multiple jurisdictions (Fig. 1).

During the 1990s through 2003, the herd was believed to have experienced a long and steady decline in population size, largely attributed to extremely low calf numbers relative to the number of cows. Predation, climate and habitat changes, and harvest pressure likely all contributed to the decline. Given the importance of the herd internationally, to local Indigenous Peoples and to residents of the Yukon and Alaska, Alaskan and Yukon partners collaborated towards a significant recovery effort. From 2003 to 2006, the partners conducted a recovery program designed to increase recruitment and calf survival. During this work, the partners recognized a need for a management plan to support a stable or increasing caribou population. Management planning provides a coordinated approach by all parties and a better result for herd sustainability. Coordination across all parties will help ensure interests and concerns continue to be addressed and will help facilitate management of the herd in an inclusive and collaborative manner.

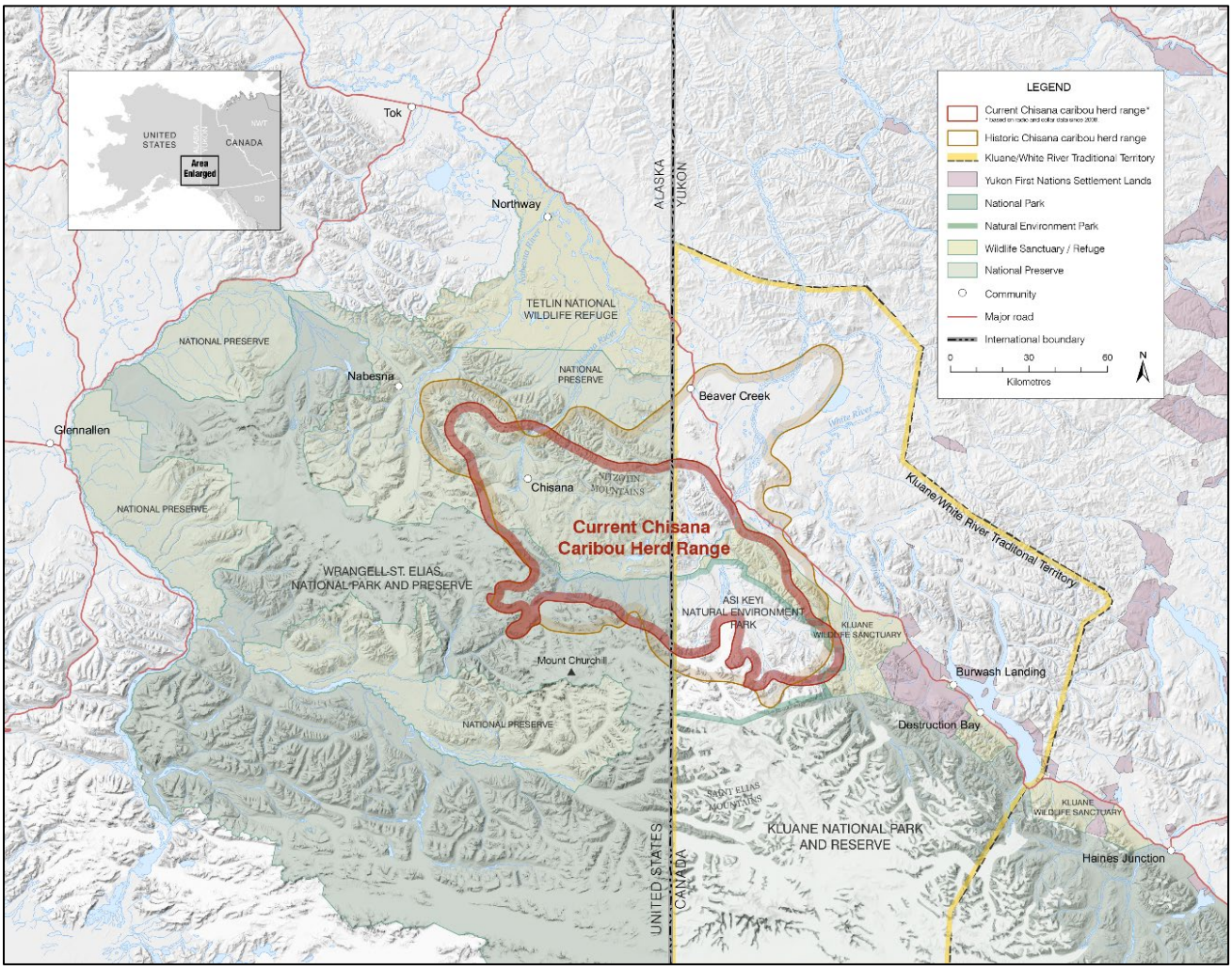

Figure 1. Map of the Chisana caribou herd range showing the current annual range based on satellite and radio collar data collected since 2008 and the extent of the herd's historic, previously mapped range.

The Management Plan for the Chisana Caribou Herd provides a goal, objectives, and strategies to guide Chisana caribou herd management and conservation in both Alaska and the Yukon. The management authorities who have agreed to this management plan—that is, the Government of Yukon (Department of Environment, YDE), Kluane First Nation, White River First Nation, the Alaska Department of Fish and Game (ADF&G), the United States Fish and Wildlife Service (Tetlin National Wildlife Refuge, FWS), and the United States National Park Service (Wrangell-St. Elias National Park and Preserve, NPS)—are referred to as "the parties" throughout this document. The parties originally agreed to a management plan in 2012 (2012 *Management Plan for the Chisana Caribou Herd*) and an updated plan will be completed in 2023.

The management recommendations in the plan are based on current circumstances, status, and trends of the herd. If conditions change or more information becomes available about factors that influence the range and population dynamics of the Chisana caribou herd, direction may need to shift. Management decisions that stray from the plan's framework should reflect agreement of all parties when possible; however, the parties' individual mandates and authorities for management decisions will be respected.

Following are brief excerpts from key sections of the draft 2023 management plan update.

Herd Composition and Size

Monitoring data for herd composition and herd size are acquired by YDE, ADF&G, NPS, and potentially FWS, and are used by the parties for making harvest management decisions.

Herd Composition

Composition surveys are one of the primary sources of monitoring information for caribou population assessment and management. These surveys are typically conducted during the fall breeding season (rut) when animals are congregated, which allows biologists to count and classify individual animals. Composition surveys are conducted annually by ADF&G and YDE via helicopter flights in Alaska and the Yukon, respectively, and aggregate the data they collect. NPS typically contributes to these surveys by paying for a fixed-wing aircraft to track collared animals and direct helicopters to group locations.

Data from composition surveys are aggregated and used to calculate calf-to-cow ratios and bull-to-cow ratios. Estimates of fall calf-to-cow ratios are an early indicator of the number of calves entering ("recruited" into) the herd as adults; however, they are an overestimate of "true" recruitment, as some calf mortality occurs over the winter. Estimates of fall bull-to-cow ratios provide a measure to evaluate if there are adequate numbers of bulls for breeding opportunities, maintaining genetic diversity, and surviving for harvest management purposes. Figure 2 shows both the calf-to-cow ratios and the adult bull-to-cow ratios based on data collected during the annual composition surveys from 2003 to 2022. Year-to-year variability in ratios is due in part to factors that influence survival rates of different age and sex classes in the population and also is affected by weather and environmental conditions during the survey period. Due to year-to-year variability in ratios, the parties have agreed to use the three-year averages of calf-to-cow and bull-to-cow ratios as the basis for decision making. These averages are shown in Figure 2 as dashed lines.

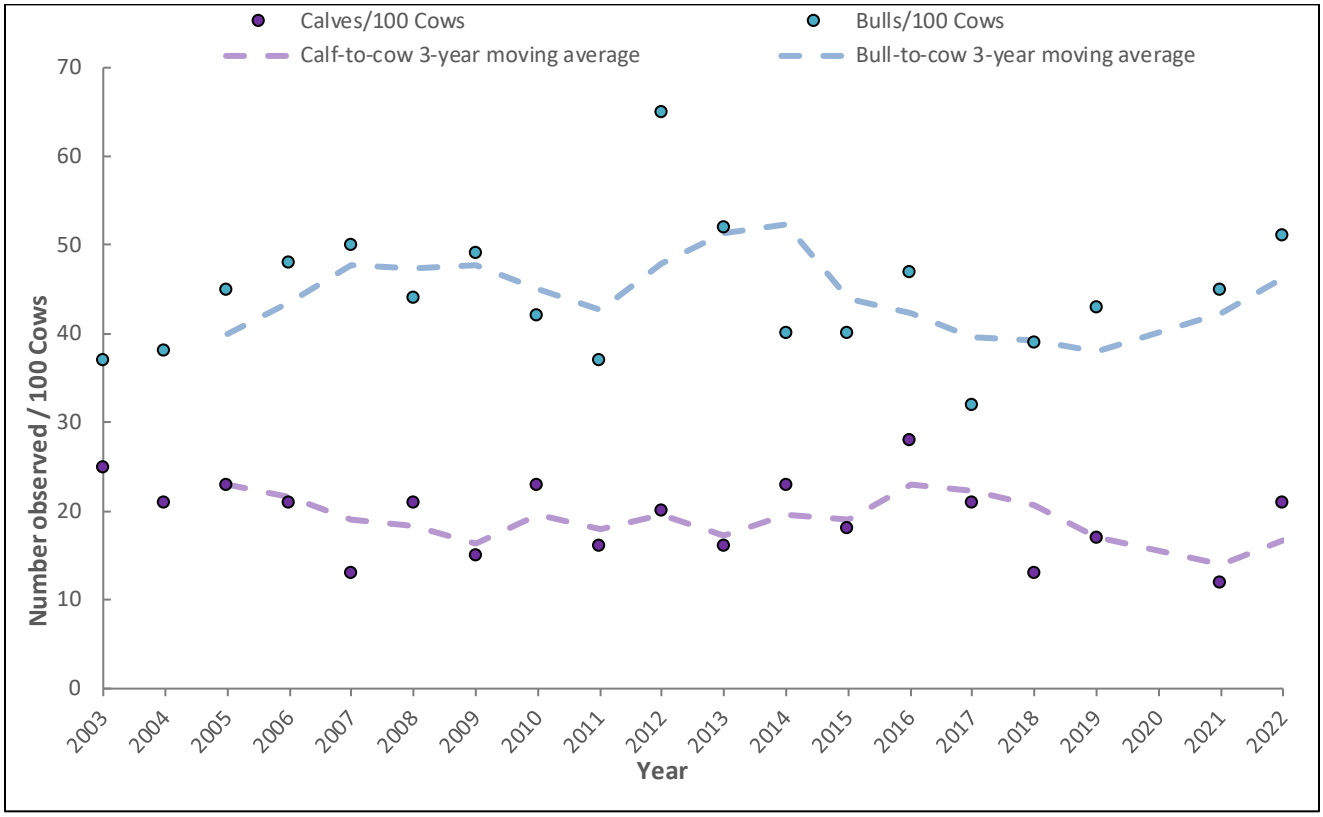

Figure 2. Numbers of calves and bulls observed per 100 cows during Chisana caribou herd composition surveys from 2003 to 2022. The three-year averages, represented by the dashed lines, are based on the data points. No survey was conducted in 2020.

Herd Size

In addition to composition surveys, YDE, ADF&G, and NPS jointly conducted population surveys in 2003, 2005, 2007, 2010, 2013, and 2022 to derive population estimates for the herd (Fig. 3). The population estimates have a confidence interval associated with them, represented by the vertical bars in Figure 3. This is the range of possible numbers that the population could be, based on the computer modeled analysis of the survey results (technical reports on the methods and analysis of the population surveys are available by request from YDE). With a 90 percent confidence interval, there is a ten percent chance of the actual population size not being within that range. Because the 90 percent confidence intervals overlap for all but two population estimates (2007 and 2022), the biologists from YDE, ADF&G, and NPS agree that the population likely remained relatively stable during this period, despite the long gap in data between 2013 and 2022.

Population surveys and the calf-to-cow ratio from the composition surveys are used by the parties to estimate a general population trend for the herd. These data allowed managers to assess whether the herd size stabilized following the 2003 to 2006 recovery efforts and are used to periodically reassess the population trend over time. Population trend is one of the factors used to make annual harvest management decisions, as described below.

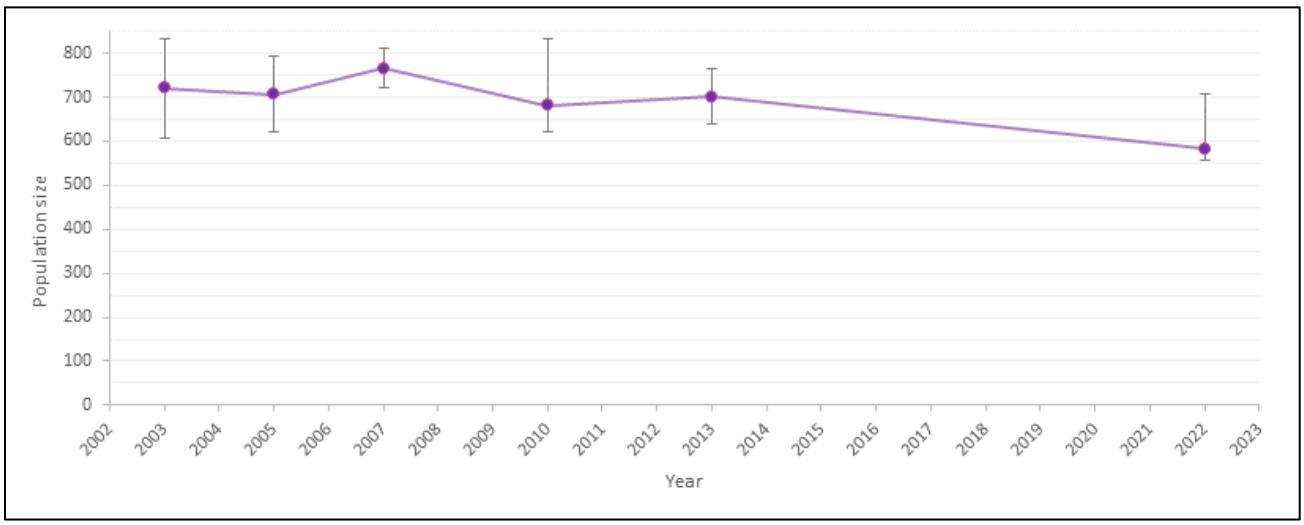

Figure 3. Population survey estimates of the Chisana caribou herd since 2003. Upper and lower bounds of the vertical bars represent 90% confidence intervals.

Management Goal and Principles

Management Goal

Conservation of the Chisana caribou herd is the overriding goal of the management plan. The parties will implement strategies that support a stable or increasing population of Chisana caribou and work together to better understand the factors that affect the herd. Population status will be measured through continued monitoring of population size and the number of calves and bulls per 100 cows.

Management Plan Principles

The following are principles to guide management of the Chisana caribou herd as well as to guide the implementation of the management plan:

1. Plan implementation must recognize and respect the relationships that exist among traditional and historic users, and First Nation, federal, territorial, and state governments.
2. Management of the Chisana caribou herd must respect the mandates of each party.
3. Management of the herd and its habitat will depend on the ability of parties to develop and implement cost-effective and timely programs and approaches.
4. Management must use the best available information and respect traditional, local, and scientific knowledge.
5. Management of the herd relies on the health of all ecosystem components that support the herd.
6. Consistent with the precautionary principle, management strategies that aim to conserve Chisana caribou should not be delayed even if detailed information is limited or lacking. Caution must be exercised to avoid potential effects of human activities to the caribou herd and its habitat.
7. Where possible, this plan will support and be consistent with the Canadian federal *Species at Risk Act* Management Plan for the Northern Mountain Population of Woodland Caribou.

Implementation of the management plan requires commitment, coordination, and collaboration among the parties.

Management Objectives and Strategies

Objective 1: Regularly monitor the Chisana caribou herd in order to acquire information for sound decision making.

Strategies

1. Use radio collars and satellite collars to monitor seasonal movements of the herd.
2. Conduct composition surveys to obtain data for estimating the numbers of calves and bulls in relation to the number of cows.
3. Conduct population surveys to obtain data for estimating the size of the herd.

	Recommended task	Who
1	Conduct a population survey of the herd every three to five years. If weather or other conditions interfere, conduct the survey as close as possible to this timeframe. If the calf-to-cow 3-year average is below the threshold level established in Section 8.2.2 for more than 2 years in a row, prioritize a population survey as soon as possible.	ADF&G, NPS, YDE, FWS
2	Conduct composition surveys annually.	ADF&G, NPS, YDE, FWS
3	Conduct one to two telemetry flights per year.	ADFG, WSEPP, YG, TNWR
4	Coordinate the recovery of collars from dead caribou during annual composition counts or telemetry surveys.	ADF&G, NPS, YDE, FWS
5	Implement and maintain a collaring program with a mix of 30 to 40 satellite and radio collars.	ADF&G, NPS, YDE, FWS
6	Continue opportunistic monitoring during collar deployment of the physical condition of Chisana caribou to provide information about health.	ADF&G, NPS, YDE, FWS

Objective 2: Cooperatively manage Chisana caribou herd harvest to maintain a stable or increasing population.

Strategies

1. Implement a maximum total annual harvest allocation of two percent of the herd; up to one percent harvest in Alaska and up to one percent harvest in the Yukon.
2. Use population indicators to determine sustainable harvest level.

Harvest Decision-Making Framework

The draft 2023 management plan includes a proposed revision to the decision-making framework used for harvest management. The proposed revision to the harvest management framework (Fig. 4) includes a tiered approach whereby the harvest quota would be reduced from 2 percent to 1 percent, rather than fully closing the harvest, in the following circumstances:

- the population trend is increasing, and the bull-cow ratio is fewer than 35 but greater than or equal to 30; or
- the population trend is declining, but the calf-cow ratio is 15 or greater and the bull-cow ratio is 35 or greater.

The proposed change would provide additional harvest opportunity while continuing a conservative approach to harvest management and clarifying the decision-making process. For comparison, the harvest decision-making framework included in the 2012 management plan is shown in Figure 5.

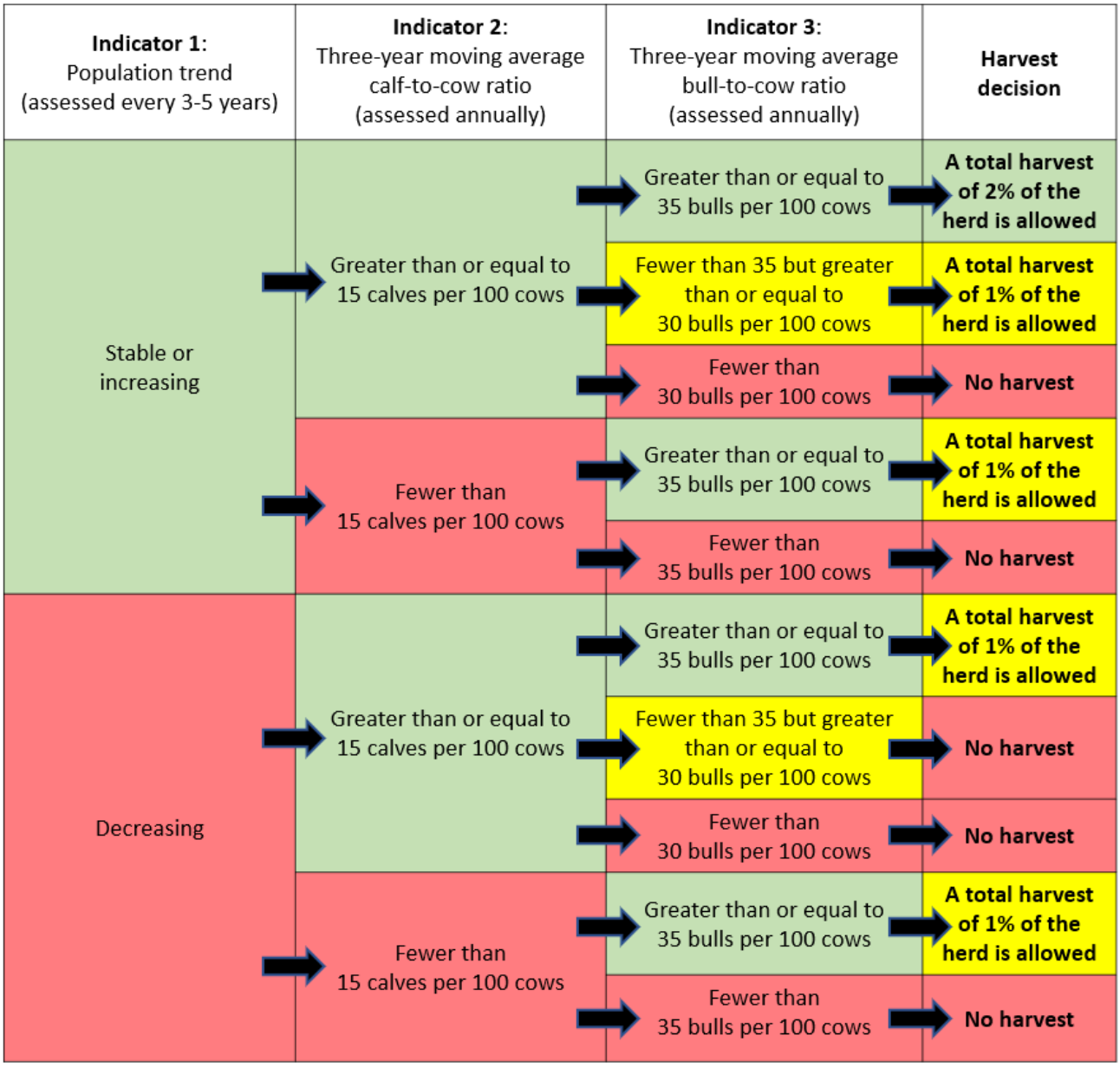

Figure 4. Framework for determining a harvest management decision on the basis of population indicators (calf-to-cow ratio, bull-to-cow ratio, and trend in herd size), *proposed* for inclusion in the *2023 Renewal of the Management Plan for the Chisana Caribou Herd*.

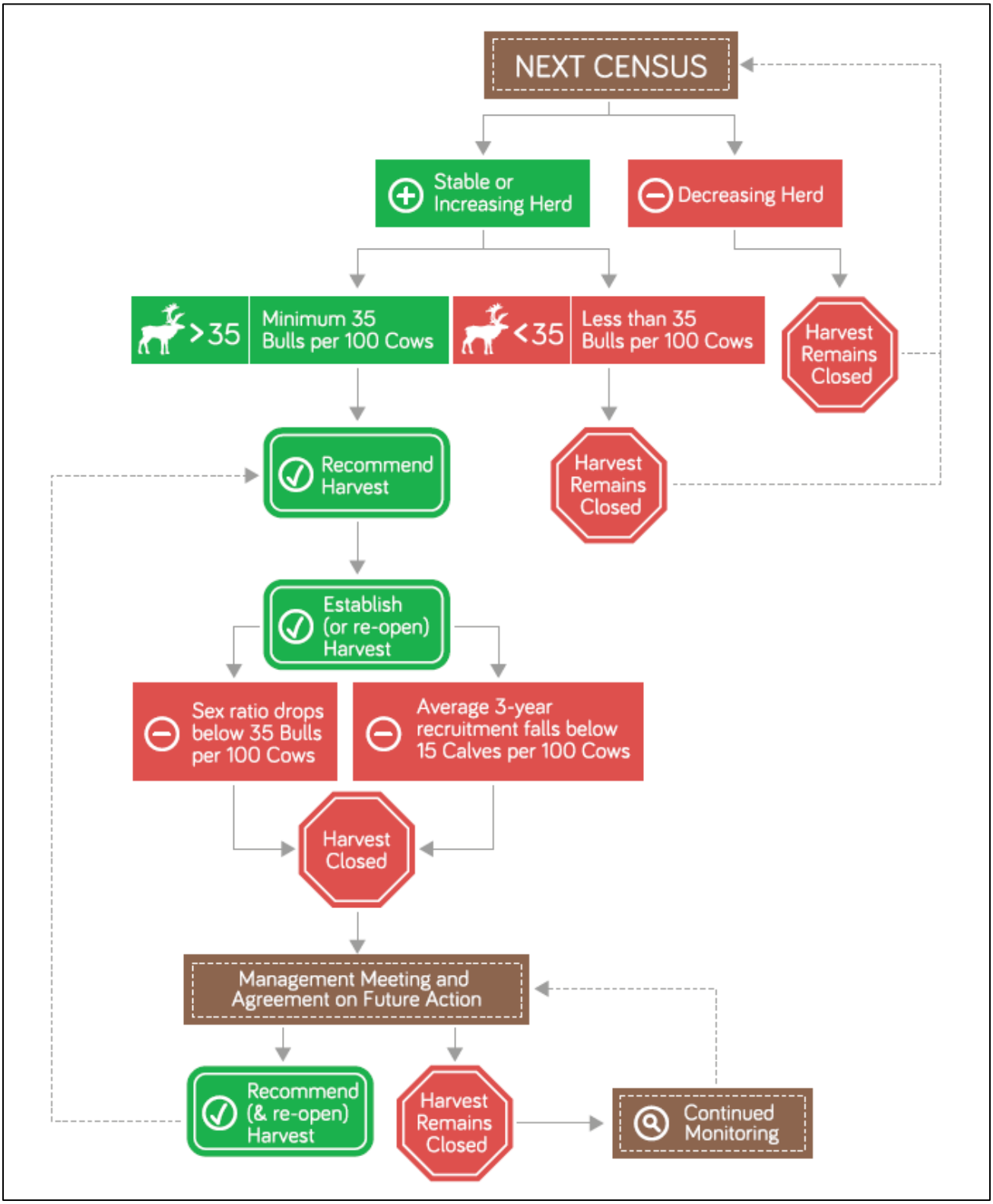

Figure 5. Flow chart for determining a harvest management decision on the basis of population indicators (bull-to-cow ratio, calf-to-cow ratio, and trend in herd size), from *2012 Management Plan for the Chisana Caribou Herd*.

Strategy for Avoiding Incidental Harvest of Chisana Caribou

The Chisana caribou herd may overlap spatially with neighboring herds of caribou, including the Nelchina, Mentasta, and Kluane herds. In recent years, neither the Mentasta nor Kluane herds have had permitted harvest, but harvest has been allowed for the Nelchina herd until 2023 when hunts have been closed or proposed for closure due to a significant population decline. The draft 2023 management plan expresses the parties' intent to avoid incidental harvest of Chisana caribou during potential future hunts of Nelchina or other caribou through deliberate monitoring of herd movements and mixing through use of data from satellite and radio collars deployed on Nelchina, Mentasta, and Chisana caribou. If herds are found to be mixing during future hunts, management actions may be taken to focus harvest efforts in areas where mixing is minimal, or temporarily close hunts where significant mixing occurs.