WAH Caribou Overview

Board of Game – January 2020
Alex Hansen – Wildlife Biologist

- Western Arctic Caribou Herd
  - Abundance
  - Additional Biological Data
  - Management
  - Harvest
  - User Conflicts
  - Capture
  - Calf Research
  - Summary

WAH Caribou Ranges

Western Arctic Herd
2012 - 2017

- Frequently Used Migration Corridors
- Haul out/cold
- Extent of Migration Areas
- Calving Range
- Summer Range
- Winter Range
- Peripheral Range
**WAH Abundance**

**2019 Photocensus Results**

- **Rivest Estimate:** 244,000
- +/- 25,000 (95% CI)
  - Minimum Count: 224,753

- 2018 no census
- 2017 estimate: 259,000
- 2016 estimate: 201,000

**Other Metrics**

- **2019 Parturition** — high
  81:100

- 2018 — 86:100
- 2017 — 83:100
Other Metrics

- 2019 Short Yearling Recruitment = 18:100 adults (average)

![Short Yearling Recruitment (yearlings:100 adults)]

Other Metrics

- 2018-19 Adult Female Survival — below average (78%)

![Cow Deaths:100 Collared Cows]
Other Metrics

- Spring: May 6-May 31
- Calving: June 1-June 10
- Post-Calving: June 11-July 5
- Summer: July 6-30
- Late-Summer: July 31-Sept 17
- Fall: Sept 18-Nov 7
- Winter: Nov 8-May 5

Timing of Mortality CY’S 17 & 18 (cows only)
Other Metrics

**Cause of Mortality CY’S 17 & 18 (cows only)**

- Predation: 60%
- Hunter: 9%
- Unknown: 31%

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**Other Biological Data**

- **Oct 2019 Average calf weights**
  - High (90#), n=11

- **Oct 2019 adult body condition**
  - High (78% fat/0 skinny), n=49

- **Oct 2017 Herd Composition**
  - 54 bulls:100 cows - high
  - 57 calves:100 cows - high
WAH Management

C&T Finding: Positive
ANS: 8,000-12,000, WAH and TCH

Annual Harvest: ~12,000 (+/- 1,750)*
  • Includes a harvest of ~3,600 cows

Harvestable Surplus:
  • Approximately 14,000 (Bull and Cow combined)
  • At 6% harvest rate

Intensive Management Objectives:
Population: 200,000
Harvest: 12,000-20,000

WAH Harvestable Surplus

6% Harvestable Surplus

ANS = 8,000-12,000 caribou

IM = 12,000-20,000 caribou
## Management Level (WAHWG)

### WAHWG Management Plan; Appendix 2

**Appendix 2: Management Recommendations**

**Conservative Management (orange)**
- Encourage voluntary reduction in calf harvest
- No nonresident cow harvest
- Restrict nonresident bull harvest
- Encourage voluntary reduction in resident cow harvest
- Limit subsistence harvest of bulls only if < 30 bulls:100 cows

**Preservative Management (yellow)**
- No harvest of calves
- Limit harvest of cows by residents through permit hunts and/or village quotas
- Limit subsistence harvest of bulls only if < 30 bulls:100 cows
- Harvest restricted to residents only according to State and federal law – closure of some federal public lands may be necessary

### Population Trend

<table>
<thead>
<tr>
<th>Management Level</th>
<th>Declining</th>
<th>Stable</th>
<th>Increasing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adult Cow Survival</td>
<td>Calf Recruitment</td>
<td>Adult Cow Survival</td>
</tr>
<tr>
<td>Liberal</td>
<td>&lt;80%</td>
<td>&lt;15:100</td>
<td>&gt;88%</td>
</tr>
<tr>
<td>Conservative</td>
<td>80%-88%</td>
<td>15-22:100</td>
<td>&gt;88%</td>
</tr>
<tr>
<td>Preservative</td>
<td>70%-80%</td>
<td>10-15:100</td>
<td>&gt;88%</td>
</tr>
<tr>
<td>Critical</td>
<td>&gt;80%</td>
<td>≥22:100</td>
<td>&gt;88%</td>
</tr>
</tbody>
</table>

### Population and Harvest Numbers

<table>
<thead>
<tr>
<th>Management Level</th>
<th>Population (Max)</th>
<th>Harvest (Max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liberal</td>
<td>265,000+</td>
<td>14,000+</td>
</tr>
<tr>
<td>Conservative</td>
<td>200,000-265,000</td>
<td>10,000-14,000</td>
</tr>
<tr>
<td>Preservative</td>
<td>130,000-200,000</td>
<td>6,000-10,000</td>
</tr>
<tr>
<td>Critical</td>
<td>&lt;130,000</td>
<td>&lt;6,000</td>
</tr>
</tbody>
</table>
**Harvest Composition**

**Bull:Cow Harvest by Unit (1998-2013)**

- **26A**: 23% Bull, 77% Cow
- **23**: 28% Bull, 72% Cow
- **22**: 35% Bull, 65% Cow

**User Conflict Issues**

**Federal Closures in Unit 23**

- Data suggest that the total number of visiting hunters was initially reduced by ~40%.
- Hunters displaced to state lands; or state lands within federal tracts (i.e. gravel bars).
- The number of visiting hunters since the 2016 closure has returned to near pre-closure levels.
Collaring

- Onion Portage (primary)
- Net-gun (as needed)

WAH Calf Research

- WAH neonate survival study (2017-2019) ongoing

- Population decline, low recruitment
  - 1) Establish calf survival baseline
  - 2) Evaluate cause specific mortality
**WAH Calf Research**

- **Western Arctic Herd (2017-2019)**
  - Calving ground survival - 86%
  - Annual survival - 44% (2017-18 only)
- **Teshekpuk Herd (2012-2014)**
  - Calving ground survival - 85%
  - Annual survival - 28%
- **Porcupine Herd (1983-2001)**
  - Calving ground survival - 75%
  - Annual Survival - 48%
- **Fortymile Herd (1994-2002)**
  - Calving ground survival - 65%
  - Annual survival - 43%
- **Mulchatna Herd (2012-2018)**
  - Calving ground survival ~ 60%

**WAH Cause of Mortality – Calving Grounds**

- **2017 (23%) n=78**
  - Brown Bear (13)
  - Eagles (5)
- **2018 (13%) n=76**
  - Brown Bear (1)
  - Unknown Predator (1)
  - Abandonment (4)
  - Unknown (4)
- **2019 (5%) n=74**
  - Abandonment (1)
  - Dehydration (1)
  - Unknown (2)
Cautious Optimism for the Future of the WAH

Positive Signs:
- The current decline appears to have stabilized
- Parturition, calf recruitment and survival – good
- 2019 fall body condition – good

Concerns:
- Only slightly above critical values
  - WAHWG preservative management threshold
  - Upper level of the Amount Necessary for Subsistence
  - State Intensive Management population and harvest objectives
- High adult female mortality
- Concerns over harvestable surplus of cows being exceeded