

Moose Population Assessment

Contact Information

1. Contact Information

First Name

Last Name
(Surname)

Email Address

Agency/Jurisdiction (ex. Agency Name, Tribal Authority)

Country/State/Province

Population Abundance

2. Identify the current population estimate

- Known Estimate (if available)

- <500
- 500-1,000
- 1,000-2,500
- 2,500-5,000
- 5,000-10,000
- 10,000-25,000
- 25,000-50,000
- 50,000-100,000
- 100,000-250,000
- >250,000
- Unknown

3. Describe the population trend over the past 5 years.

- Stable ($\pm 10\%$)
- Increasing
- Decreasing
- Unknown

4. Identify the principal method to estimate population - choose all that apply.

- Structured Aerial Survey
- Hunter Observation Log
- Harvest Data
- Citizen Science (Sightings, Roadkill, etc.)
- Simulation Model (Abundance, Survival, Reconstruction, etc.)
- Other - Write In (Required)

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Geographic Range

5. Identify the trend in range distribution (past 5 years).

- Stable ($\pm 10\%$)
- Increasing
- Decreasing
- Unknown

6. Is the distribution range monitored regularly?

- Yes
- No

7. Does seasonal moose migration with habitat change occur in some or all parts of your country/state/province?

- Yes
- No
- Unknown
- Other - Write In (Required)

Population Demographics

8. Scale of Survey

- Statewide
- Regional

9. Short description of regional location

10. Population Metrics (Include up to the five most recent sampling years)

*Twinning Rate is defined as the percentage of twins produced from adult females who gave birth to a calf that year

	Survey Month	Survey Year	Calves per 100 Cows	Bulls per 100 Cows	Twinning Rate*	Total Individual Moose
Survey Year 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Survey Year 2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Survey Year 3	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Survey Year 4	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Survey Year 5	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

11. Are the population metrics collected prior to or post the harvest season?

- Prior to Harvest Season
- Post-Harvest Season
- Harvest Occurs Year-round
- Other - Write In

12. Scale of Survey (Location 2; if needed)

- Statewide
- Regional

15. Are the population metrics collected prior to or post the harvest season (Location 2)?

- Prior to Harvest Season
- Post-Harvest Season
- Harvest Occurs Year-round
- Other - Write In

16. Scale of Survey (Location 3; if needed)

- Statewide
- Regional

17. Short description of regional location

3

18. Population Metrics (Location 3; Include up to the five most recent sampling years)

*Twinning Rate is defined as the percentage of twins produced from adult females who gave birth to a calf that year

	Survey Month	Survey Year	Calves per 100 Cows	Bulls per 100 Cows	Twinning Rate	Total Individual Moose
Survey Year 1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Survey Year 2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Survey Year 3	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Survey Year 4	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Survey Year 5	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

19. Are the population metrics collected prior to or post the harvest season (Location 3)?

- Prior to Harvest Season
- Post-Harvest Season
- Harvest Occurs Year-round
- Other - Write In

Survival Estimates

Harvest Indices

29. Is the moose population hunted?

- Yes
- No

30. How are harvest tags issued?

(Select all that apply)

- Over the Counter Issuance (ex. Any hunter can purchase the privilege)
- Quota Hunt
- Lottery
- Other - Write In (Required)

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31. Is harvest reporting mandatory?

- Yes
- No

32. Is the hunting quota or tags specified by sex or age?

- Any animal
- Sex/Age specific
- A mix of both

33. Estimate the total annual harvest (average of past 3 years)

34. Identify which metrics are used to influence moose harvest regulations/tag allotments and their relative importance? (Drag and drop ranking)

Drag items from the left-hand list into the right-hand list to order them.

Bull: Cow
Ratios →

Calf: Cow
Ratios →

Population
Abundance →

Population
Density →

Population
Trajectory →

Survival
Estimates →

Public Sighting
Rates (ex.
Hunter Logs,
Public
Reporting) →

Age Distribution
of Harvest →

Browse Damage
(Agricultural or
Silvicultural) →

Moose Vehicle
Collisions →

Resource
Competition
(i.e., other
Cervids) →

Predation Rates →

Other - Write
In →

35. Is there a separate legislation or agency policy that's related to indigenous people's harvest of moose?

- Yes
- No
- In Progress

36. Is indigenous harvest open or allocated?

- Open
- Allocated
- Unknown

37. Estimate the total annual indigenous harvest (average of past 3 years; if known)

Predation

38. Do wolves (*Canis lupus*), black bears (*Ursus Americanus*) and/or brown bears (*Ursus arctos*) exist and predate moose in your country/state/province?

- Yes
- No
- Unknown

39. Please provide the population estimate for predators (if applicable).

Wolf (*Canis lupus*)

Black Bear (*Ursus Americanus*)

Brown Bear (*Ursus arctos*)

40. Does predation by smaller predators occur but is limited to primarily neonates/calves?

- Yes
- No
- Unknown

41. Please identify any smaller predators.

42. Is predation a consideration in management decision making for moose in your country/state/province?

- Yes
- No

43. Please select all impacts of predation that apply.

- Affects moose population goals
- Affects harvest allocation system
- Creates sociological conflicts for the hunter community
- Creates sociological conflicts for the non-hunting community
- Creates conflicts between agency management programs (ex. wolf management vs. moose management)
- Other - Write In (Required)

Disease and Parasites

44. Select the most influential disease/parasite on the moose population (no more than 2)

- Brainworm/Tissue Worm (Parelaphostrongylosis or Elapostromylosis)
- Liver Fluke (Fascioloidiasis)
- Hydatid Cyst (Echinococcus/Taenia)
- Lungworm (Dictyocaulus)
- Chronic Wasting Disease
- Winter Tick (Dermacentor)
- Keds (Lipoptema)
- Arterial/Carotid Worm (Elaeophora)
- Other - Write In (Required)

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45. What is the impact trend of the disease/parasite (selected above) on the population?

- Increasing
- Decreasing
- Stable
- No Impact
- Unknown

Moose Management Structure

46. Does your governing body have an official moose management policy/plan?

- Yes
- No
- In Progress
- Other - Write In (Required)

47. Please explain how an official policy/management is incorporated into management decision making. (Optional)

48. Is there a scheduled update of the management plan/policy?

- Yes
- No

49. How frequent are scheduled updates?

50. Is there a designated point of contact(s) for moose management?

- Yes
- No

51. Is there a dedicated process to secure/include public input in the development of management plans/policies.

- Yes
- No

52. Is there input/recognition of indigenous people in the development of management plans/policies?

- Yes
- No

53. Does the state/country/provincial institution charged with managing moose sponsor structured moose research within/outside of the institution?

- Yes
- No

54. Identify current moose management concerns and challenges for your state/province/country (Maximum of 3).

Please note that climate change is not listed, see question below

- Population Monitoring
- Illegal Harvest
- Public Attitudes
- Nutritional Condition/Productivity/Animal Quality
- Forestry Conflicts
- Habitat Quality/Change
- Human Development/Encroachment
- Resource Extraction
- Predation
- Disease/Parasite
- Hunting Opportunity
- Motor-Vehicle Collisions
- Available Management Resources/Support
- Other - Write In (Required)

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55. Does climate change impact any of your previously selected management concerns/challenges

- Yes
- No

56. Of the three concerns/challenges you selected above, please select which are impacted by climate change.

- Population Monitoring
- Illegal Harvest
- Public Attitudes
- Nutritional Condition/Productivity/Animal Quality
- Forestry Conflicts
- Habitat Quality/Change
- Human Development/Encroachment
- Resource Extraction
- Predation
- Disease/Parasite
- Hunting Opportunity
- Motor-Vehicle Collisions
- Available Management Resources/Support
- Other - Write In (Required)

*

57. Did you require assistance to complete the survey?

Yes

No

58. Please provide the names of individuals and contact information (if available) of individuals who helped you.

59. Are you sure you've completed the survey? *

I'm confident I've answered to the best of my ability