

## Appendix 1

Table A.1.1. Mean (*SD*) vegetation structure and cover measurements for 5-m radius ocular surveys at two pastures in western North Dakota and two pastures in northeastern Montana, 2016-2018. We conducted vegetation surveys across a 100-m grid on each pasture in both early- (May-June) and late- (July-August) season for a total of 3637 surveys.

| Year | Pasture | VOR (cm)   | Height (cm) | Cover (%) | Grass (%) | Forb (%) | Shrub (%) | Bare (%) | Litter (%) |
|------|---------|------------|-------------|-----------|-----------|----------|-----------|----------|------------|
| 2016 | MT 1    | 10.5 (5.5) | 24 (11)     | 91 (8)    | 71 (16)   | 18 (12)  | 2 (7)     | 6 (7)    | 3 (2)      |
|      | MT 2    | 10.0 (7.8) | 25 (12)     | 86 (12)   | 65 (17)   | 19 (12)  | 3 (8)     | 9 (10)   | 4 (3)      |
|      | ND 1    | 7.0 (3.9)  | 19 (7)      | 84 (16)   | 76 (18)   | 8 (7)    | 0 (1)     | 5 (11)   | 10 (12)    |
|      | ND 2    | 5.5 (3.6)  | 19 (6)      | 74 (17)   | 65 (19)   | 9 (8)    | 0 (0)     | 7 (10)   | 19 (15)    |
| 2017 | MT 1    | 7.5 (3.5)  | 16 (5)      | 84 (10)   | 69 (16)   | 13 (10)  | 1 (5)     | 9 (10)   | 7 (5)      |
|      | MT 2    | 9.0 (5.8)  | 17 (8)      | 83 (14)   | 70 (17)   | 11 (8)   | 2 (6)     | 10 (11)  | 6 (5)      |
|      | ND 1    | 6.0 (3.5)  | 22 (8)      | 87 (13)   | 77 (14)   | 9 (7)    | 1 (2)     | 8 (12)   | 5 (5)      |
|      | ND 2    | 3.5 (2.5)  | 19 (6)      | 78 (14)   | 69 (15)   | 9 (8)    | 0 (1)     | 14 (13)  | 7 (6)      |
| 2018 | MT 1    | 5.5 (4.1)  | 17 (8)      | 62 (23)   | 48 (24)   | 12 (9)   | 1 (3)     | 35 (24)  | 4 (3)      |
|      | MT 2    | 5.5 (4.1)  | 17 (6)      | 70 (23)   | 57 (24)   | 10 (12)  | 3 (10)    | 24 (23)  | 5 (6)      |
|      | ND 1    | 8.0 (6.3)  | 20 (9)      | 82 (14)   | 70 (16)   | 11 (9)   | 1 (2)     | 12 (13)  | 5 (4)      |
|      | ND 2    | 7.0 (5.7)  | 20 (9)      | 75 (13)   | 66 (13)   | 9 (6)    | 1 (1)     | 20 (13)  | 5 (4)      |