HONEY BADGER PROJECT
Project File Document W-038
Elk Security and Habitat Analysis
October 13, 2021

The Honey Badger project area is located almost entirely within Elk Management Unit (EMU) 3-2, which has 69,743 NFS acres and a Forest Plan priority rating of low. A small amount of EMU 3-3 falls into the project area but no security units are within the project boundaries. Based on the Forest Plan (FP) definition of elk security and the open public motorized road system according to the District Motor Vehicle Use Map (MVUM) there should be 13,606 acres of potential elk security in EMU 3-2. This is approximately 19% of the NFS lands for this management unit. According to the Forest Plan (USDA 2015) security is calculated at the individual EMU scale. For the purposes of this analysis, the "project area" comprises only National Forest Service (NFS) lands.

The existing condition is 9,395 acres of secure habitat (13%) due to existing openings and unauthorized motorized use of routes within and adjacent to security blocks in EMU 3-2. Please see Project Files W-026 and W-027 for a map and additional information. This condition depicts the No Action Alternative.

There are five individual blocks of elk security in this EMU. Based on the Forest Plan definition of elk security, regeneration harvest treatments within elk security will create openings that are no longer considered secure habitat. It is expected that about 10 years after this kind of logging prescription vegetation growth will provide hiding cover; and the treated logging unit will again be considered secure habitat. The table below shows the change in security by individual security block resulting from the proposed action logging. This depicts expected conditions in the first year after treatment has been completed and 10 years post-treatment.

EMU 3-2

Elk Security Block	Security Block Size in Acres	Existing Security Acres	Post-Treatment Security Acres	10 years after Treatment
3-2-02	1102	999	999	999
3-2-04	636	636	591	636
3-2-05	372	285	255	285
3-2-06	3069	2906	1869	2906
3-2-07	1342	1195	951	1195
Total	**6521**	**6021**	**4665**	**6021**

EMU 3-3 (No work will occur in this Security Unit)

Elk Security Block	Security Block Size in Acres	Existing Security Acres
3-3-7	1911.7	1779.1

The proposed action would cause a reduction in security habitat through the creation of openings within security blocks. The proposed action would reduce security by about 2,292 acres through regeneration harvests within security blocks. All blocks would retain a varying amount of cover, with some gaining larger forage openings. Security loses through the creation of regeneration openings are expected to return to security cover habitat in about 10 years. No additional loss of security is anticipated through new roads as none will be added to the open motorized route system.

Forage Analysis

Forage analysis calculations are based on the project area as there would be no change to forage levels in the EMU outside of the project area. Forage habitat is currently low in the project area, especially within security blocks. The proposed regeneration harvests will create openings that are expected to increase forage habitat for elk. The following table shows the amount of existing opening/forage habitat within security blocks, and the amounts that would be created by logging with the proposed action.

EMU 3-2

Elk Security Block	Elk Security Block Size	Forage openings Acres	% of block	Forage openings created - Acres	Forage openings Acres % of block(s)
3-2-02	1102	103	9	39	13
3-2-04	636	0.4	0.1	146	23
3-2-05	372	87	23	71	42
3-2-06	3069	163	5	1793	64
3-2-07	1342	147	11	243	29
Total	**6521**	**500**	**8% (of total)**	**2292**	**35% (of total)**

The proposed action treats 2,292 acres in five security blocks with regeneration harvests that will create forage producing openings. This is a 13 to 64% change in the security blocks and should result in a notable increase in habitat quality in these blocks.

The proposed action would also treat another 9,579 acres outside of security blocks with regeneration cuts that should produce forage openings. Including the regeneration treatment in security blocks, the proposed action will create 11,871 acres of forage habitat. This is 28% of the project area, and a substantial increase in the amount of forage available for elk. Currently there are about 3,042 acres (7%) of openings in the project area, so this would bring the amount of potential forage openings for elk up to approximately 35%.

Proposed burning will add about 938 acres of forage openings to the security blocks in EMU 3-2. Combined with existing openings (500 acres) and those created through regeneration harvest (2,292 acres), the total of forage producing openings would be increased to about 3,730 acres within security blocks in the project area. The proposed action would also treat another 4,518 acres outside of security blocks with burning that should produce forage openings.

The 5,456 total acres from burning (minus 48 acres of burning within existing openings) will add to the 11,871 acres of regeneration harvest to substantially increase the amount of forage producing openings within the project area. The proposed action would increase potential forage habitat from 3,042 acres (7%) to about 17,279 acres (41%) within the project area. An increase in forage is expected to benefit elk.

Reference

Hillis, J. M., M. J. Thompson, J. E. Canfield, L. J. Lyon, C. L. Marcum, P. M. Dolan, and D. W. McCleerey. 1991. Defining elk security: the Hillis Paradigm. p. 38-43 in Proceedings of a Symposium on Elk Vulnerability, compiled by A. G. Christensen, L. J. Lyon, and T. N. Lonner. Hosted by the Montana Chapter of The Wildlife Society. Montana State University, Bozeman, MT, April 10-12, 1991.

Susan Stanley
Wildlife Biologist
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