

Montana
Department of
Natural Resources
and Conservation
Forested State Trust
Lands Habitat
Conservation
Annual Update

**Reporting
Period**

January 1,
2019-
December 31,
2019



INTRODUCTION

The Montana Department of Natural Resources and Conservation (DNRC) Forested State Trust Lands Habitat Conservation Plan (HCP) is a plan DNRC developed in cooperation with the United States Fish & Wildlife Service (USFWS) to acquire an Incidental Take Permit (Permit) for the Forest Management Program for a 50-year term. In the HCP, DNRC committed to provide the USFWS annual and 5-year monitoring reports for the duration of the plan. The monitoring reports help the two agencies evaluate DNRC's compliance with required measures, and the effectiveness of conservation commitments. This is the eighth annual update, and the reporting period for this update is January 1, 2019-December 31, 2019. According to the results reported in the following sections, DNRC has fulfilled its annual commitments for monitoring and reporting according to HCP Chapter 4 – Monitoring and Adaptive Management (DNRC 2010).

As outlined in Chapter 8 (HCP Implementation), DNRC and the USFWS are required to meet annually. These meetings allow DNRC to present the USFWS with annual updates, evaluate new science, and they foster communication between the two agencies (DNRC 2010).

MONITORING AND ADAPTIVE MANAGEMENT

During development of the HCP conservation strategies, DNRC and the USFWS included commitments to monitor key components of the strategies. The monitoring and adaptive management program provides assurances that the HCP is being appropriately and effectively implemented, and it outlines a course of action if the conservation strategies are not yielding the desired results.

Monitoring

There are two types of monitoring: (1) implementation monitoring and (2) effectiveness monitoring. Implementation monitoring ensures implementation of DNRC's conservation commitments throughout the Permit term. Implementation monitoring represents DNRC's largest monitoring commitment associated with the HCP, and it involves tracking, reporting and evaluating whether the covered activities are being performed in compliance with the HCP requirements. Implementation is primarily documented through project-level HCP checklists and validated through office and field reviews (DNRC 2010).

Effectiveness monitoring typically involves evaluation of a particular conservation commitment or suite of commitments designed to have a desired effect on a target species or resource. This type of monitoring is intensive and requires considerable resources and expertise to conduct data collection and perform related analyses. Effectiveness monitoring for the HCP is fulfilled through a commitment by both DNRC and the USFWS to consider any new relevant research at annual meetings, and through DNRC's commitment to conduct monitoring to evaluate whether management prescriptions and conservation commitments are having the desired effect on the given species.

The monitoring tables in this update summarize both the implementation and effectiveness monitoring that took place during this reporting period. The tables contain information that must be reported annually as described in Chapter 4 of the HCP (DNRC 2010). Tables 1 through 3 contain abbreviated descriptions of the HCP commitments that DNRC is required to report on. For full descriptions of those commitments, please see Chapter 2 of the HCP.

Adaptive Management

Adaptive management is a process whereby conservation commitments and management actions may be changed based on the results obtained from effectiveness monitoring and/or research. This process results in a feedback loop that incorporates improved information into everyday practices. This update serves as a component of the adaptive management process.

HCP CHECKLIST

HCP implementation checklists are the primary tool that DNRC uses to demonstrate and document compliance with HCP commitments. The HCP implementation checklists are macro-enabled spreadsheets that list specific commitments applicable to each field office. The checklists allow forest management staff to verify which commitments are applicable on a particular project, if they are being implemented, and how they are being implemented. The checklists serve as prompts to help ensure that all applicable commitments are considered and applied appropriately on each project. The checklists also aid in organizing, tracking and summarizing commitment application and any necessary allowances. At the end of the reporting period checklist data is compiled into a database that provides summary information required in the annual updates and 5-year reports. Much of the information presented in the following tables was compiled using the checklists and the associated database. There were 24 HCP checklists completed during this reporting period all of which were associated with commercial timber harvest.

GRIZZLY BEAR

DNRC manages state trust lands located in grizzly bear habitat. The following table outlines the annual reporting requirements and results for grizzly bears.

Table 1 Grizzly bear reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
GB-PR4 Constructed open roads and minimized road in RMZs, WMZs or avalanche chutes. (allowances reported annually)	HCP Checklist was reviewed on each project. All projects with such construction, and the circumstances, would be reported.	From HCP implementation checklist Number of projects that were reviewed = 24 Number of projects had open road construction in one or more of these areas = 0.	v.2.4-11
GB-PR5 Suspend motorized forest management activities within 0.6 mile of active den sites until May 31	Report active den sites found, including the following information (to the extent it is available): (1) location of the den, (2) when the bear was documented as present and	No active dens were found in 2019.	v.2.4-11

Table 1 Grizzly bear reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)															
	by whom, (3) when the bear vacated the site (if known), and (4) a description of activities that were delayed as a result of the den site.																	
GB-RZ6 Granting of Easements – Discourage granting of easements that relinquish DNRC control on roads within grizzly bear recovery zone. (annual and 5 year)	Use HCP Implementation Checklist to Identify Circumstances and Mitigation Associated with the Easement. Annually compile the number of easements granted and associated miles of newly created open roads.	There were 0 reciprocal access agreements reported within grizzly bear recovery zones for 2019.	v.2.4-15															
GB-ST1(2) Has DNRC installed bear presence signs? Is DNRC maintaining these signs?	Number and locations included in accomplishment report for Stillwater Unit. Provide informal updates on maintenance issues as needed.	Five signs remain in place at mapped locations on the Stillwater Block. One was vandalized in 2019 and will be replaced in spring 2020. Four signs are maintained on the main block. Two occur on the Coal Creek State Forest.																
GB-SW1(5) Is DNRC maintaining “bear aware” signs at designated locations?	Provide informational updates on maintenance issues as needed.	Four signs remain in place at mapped locations on the Swan River State Forest.																
GB-SC1 Maintain or decrease baseline open road amounts at the administrative unit level. Improve GIS road layer. (annually as needed)	Report open road amounts (tracked with GIS) at the administrative unit level to compare with HCP baseline. GIS data quality and management reported at annual meeting.	Number of projects reviewed, when applicable, using open road reduction checklists = 1 See Attachment GB-1, which provides information regarding road amounts by road class, unit office and area office during the monitoring period as compared with permits levels in 2018. <table border="1" data-bbox="941 1738 1242 1896"> <thead> <tr> <th>Unit</th> <th>2018 ITP</th> <th>2019</th> </tr> </thead> <tbody> <tr> <td>KAL</td> <td>17.8</td> <td>11.9</td> </tr> <tr> <td>STW</td> <td>1.8</td> <td>1.7</td> </tr> <tr> <td>CLW</td> <td>16.8</td> <td>13.9</td> </tr> <tr> <td>MSO</td> <td>4.1</td> <td>0.0</td> </tr> </tbody> </table>	Unit	2018 ITP	2019	KAL	17.8	11.9	STW	1.8	1.7	CLW	16.8	13.9	MSO	4.1	0.0	v.2.4-22
Unit	2018 ITP	2019																
KAL	17.8	11.9																
STW	1.8	1.7																
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MSO	4.1	0.0																

Table 1 Grizzly bear reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
		HEL 0.2 0.1	
GB-SC4	Report Pits Operated >0.25 Miles From Open Roads in Resting Parcels and Mitigations Applied.	From HCP implementation checklist No minor projects in resting parcels required the use of gravel sources greater than 0.25 miles from an open road during the monitoring period.	
GB-CY4 Has DNRC expedited reduction of open road densities for recovery zone parcels?	Compile and report information from Open Road Reduction Checklist (Appendix B, Document B-2) for all CYE recovery zone parcels (does not include CYE NROH parcels).	Completed in 2012 and 2018. No further reporting required for 2019.	v.2.4-25

CANADA LYNX

Some forested trust lands managed by DNRC occur within the distribution of Canada lynx, which was listed as threatened in 2000 by the USFWS. The following table outlines the reporting requirements and results for Canada lynx.

Table 2 Canada lynx reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
LY-HB1 Lynx Habitat Map – Track lynx habitat in the HCP project area. (annual)	Provide lynx habitat map depicting annual changes and table that includes lynx habitat amounts by type for each administrative unit and LMA.	Results are provided for year 2019 in Habitat tables found in Attachment LY-1 and LY-2. Suitable Habitat and Winter Foraging Habitat percentages exceed required minimums on all land offices and LMAs. Total Potential Habitat on non-LMA lands decreased by 900 acres (0.6%) compared to the 2018 baseline as of the end of this monitoring period. This decrease is due to stand updating on NWLO lands. GIS data corrections, minor model corrections, major land acquisitions and minor land disposals have accounted for other shifts in	v.2.4-29

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
		acres since 2012.	
LY-HB6 Maintain 65/35% ratio of suitable/non-suitable habitat on scattered parcels outside of LMAs. (year 2 and 5)	Report acres and percentage of total potential lynx habitat, suitable lynx habitat and temporary non-suitable habitat on scattered parcels outside the LMAs for each land office	CLO = 26,817 ac; 77% suitable NWLO = 53,228 ac; 82% suitable SWLO = 32,214 ac; 84% suitable See lynx habitat table Attachment LY-2.	v.2.4-32

AQUATICS

The aquatic conservation strategies were developed by DNRC with the technical assistance of the USFWS. The process was initiated by identifying a specific biological goal applicable to the three HCP fish species. The identified biological goal was to protect bull trout, westslope cutthroat trout and Columbia redband trout populations and their habitat and to contribute to habitat restoration or rehabilitation, as appropriate, which may have been affected by past DNRC forest management activities. Commitments were developed to address known scientific information and uncertainties in scientific knowledge, as well as existing data gaps (DNRC 2010). The following table outlines the reporting requirements and results for the Aquatics Conservation Strategy.

Table 3 Aquatics reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
AQ-RM (1) Riparian Management Zone Commitments. (annual)	Complete HCP Implementation checklist review on all sites.	During 2019, RMZs were delineated on 16 projects containing Class 1 streams or lakes. 4 of these projects include harvest plans for a total of approximately 43.8 acres of RMZ harvest.	v. 2.4-39
AQ-RM (2) Thresholds for RMZ harvest allowances. (annual and 5 year)	Acres of Class 1 RMZ, Acres of Class 1 RMZ harvest under allowances, and RMZ area in non-stocked or seed/sapling size class, by aquatic analysis unit (AAU).	A total of 43.8 acres of the managed portion of the RMZ were harvested in 2019. No Allowances were invoked during 2019. Percent total non-stocked, seedling-sapling size class/AAU: Bitterroot: 38.1% Blackfoot: 2.8% Flathead Lake: 16.5% Lower Clark Fork: 0.0% Middle Clark Fork: 5.5%	v. 2.4-39

Table 3 Aquatics reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
		<p>Lower Kootenai: 7.7% Middle Kootenai: 3.9% Upper Kootenai: 6.5% North Fork Flathead: 21.1% Rock Creek: 7.1% Stillwater: 5.1% Swan: 3.4% Upper Missouri: 5.9%</p>	
<p>AQ-SD Implement sediment delivery reduction commitments. (annual)</p>	<p>Amount of new road constructed, reconstructed, relocated, abandoned and reclaimed.</p>	<p>See attachment SD-1 on page 18.</p>	<p>v.2.4-40</p>
<p>AQ-FC 1/6 of sites in need of corrective actions implemented, planned or designed every 5 years. All priority 1 sites completed within 15 years. All sites completed with 30 years. (annual and 5 year)</p>	<p>Maintain planning schedule and report accomplishments.</p>	<p>The original HCP baseline included 106 inventoried stream crossing sites in need of corrective actions. To date, 49 new sites have been added to the inventory for a total of 155 crossing sites. Currently, 79 sites have been removed from the planning schedule (See Aquatic Attachment AQ-FC1 – HCP Fish Connectivity Implementation Monitoring). This includes 21 sites where corrective actions have been implemented. There are 76 sites remaining in need of corrective actions or assessment. One Priority 1 site was added to the inventory in 2019.</p>	<p>v.2.4-41</p>
<p>AQ-GZ Implement grazing conservation strategies for grazing licenses on classified forest lands. (annual)</p>	<p>Update status of grazing evaluations and verifications completed, and corrective action implemented.</p>	<p>For the 2019 monitoring period, 56 grazing evaluations were completed on HCP parcels. Of these evaluations, 12 (32%) support an HCP fish species. During the review of grazing evaluation data, no parcels showed evidence that further verification was necessary. A previously identified (2019 verification) corrective action will be implemented in 2020 to passively reduce grazing pressure on riparian vegetation and streambanks along the Selow Creek. For</p>	<p>v.2.4-41</p>

Table 3 Aquatics reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
		a summary of inspections see Attachment AQ-GZ; Annual Summary Statistics of Grazing Verifications and Corrective Actions.	
AQ-Cumulative Watershed Effects (CWE) Has DNRC implemented the CWE commitments? (annual and 5 year)	Report number, type and location of CWE analysis completed. Provide documentation of mitigation measures or alternatives developed for projects with moderate or high CWE risks.	CWE analyses were completed for 13 forest management projects during 2019. For 7 of these projects, a Level 1 CWE analysis (coarse filter) was determined to be sufficient level of analysis due to determination of low risks. More detailed analysis (Level 2 and level 3) were completed on the other 6 projects where the CWE Coarse filter analysis determined that there was potential for moderate to high levels of risk.	v.2.4-41
Assess the potential Large Woody Debris (LWD) recruitment and determine whether in-stream LWD targets will be met on five or more riparian harvest sites. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	DNRC has completed pre- and post-harvest LWD monitoring on 13 sites under SMZ/RMZ harvest prescriptions. Post-harvest LWD levels met or exceeded targets at all sites. In 2019, one site was discontinued due to limited RMZ harvest, and monitoring continued at three sites with year 2 of pre-harvest data collection. A synthesis report of completed RMZ monitoring sites is available upon request.	v.2.4-42
Evaluate levels of in-stream shade retained after riparian harvest. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	DNRC has completed pre- and post-harvest instream cover monitoring on 13 sites under RMZ/SMZ harvest prescriptions. Post-harvest shade monitoring indicates that current management is adequate to maintain suitable stream temperature regimes for HCP-covered fish species. In 2019, one site was discontinued due to limited RMZ harvest, and monitoring continued at three sites with year 2 of pre-harvest data collection. A synthesis report of completed RMZ monitoring sites is available upon request.	v.2.4-42
Monitor stream	Annual update will consist	DNRC has completed pre- and post-	v.2.4-42

Table 3 Aquatics reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
temperatures to evaluate if levels of in-stream cover are adequate to maintain stream temperatures. (annual and 5 year)	of a summary of the status of all monitoring activities.	harvest stream temperature monitoring on 12 sites under RMZ/SMZ harvest prescriptions. Post-harvest monitoring indicated that 10/12 sites met thresholds identified in the HCP. One site failed to meet acute and chronic thresholds, while one site failed to meet chronic thresholds. Year-2 of pre-harvest monitoring continued at three sites with proposed RMZ harvest. A monitoring report synthesizing stream temperature data is available upon request.	
BMP Audits on all applicable projects. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	Internal BMP audits were conducted on 9 timber sale projects during 2019. Audit results found that BMPs were properly applied on 98% of the practices rated. BMPs were effective in protecting soil and water on 99% of the practices rated. Two minor departures were noted on internal audits associated with existing stream crossing sites and road drainage.	v.2.4-43
Timber sale inspections on all applicable projects. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	During 2019, 482 timber sale inspections were completed on 38 ongoing timber sale projects within HCP project area. Examples of inspection reports are available upon request.	v.2.4-43
Ongoing quantitative studies at two sites. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	The South Woodard turbidity monitoring project is continuing with corrective actions expected in the summer of 2020. Turbidity monitoring was initiated in 2019 to evaluate CMP replacement in Arkansas Creek, post-installation data will be collected in 2020.	v.2.4-43
Case studies monitoring the effectiveness of corrective actions in reducing sediment from	Annual update will consist of a summary of the status of all monitoring activities.	The South Woodward turbidity monitoring project is on-going with pre-corrective action data collection. Corrective actions to address BMP maintenance is scheduled for the summer of 2020 which will provide	v.2.4-43

Table 3 Aquatics reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
existing sources. (annual and 5 year)		three years of pre-corrective action data.	
Determine if fish connectivity corrective actions are effective. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	Fish connectivity improvements have been completed on 21 fish passage structures covered under the HCP. DNRC has completed 2-year, and 5-year effectiveness monitoring on all sites.	v.2.4-43
AQ-GR1 Redd Trampling Pilot Study. (Develop and finalize plan by year 2, implement plan by year 3)	Complete a plan for Redd trampling pilot study by year 2.	Assessment of redd risk on all HCP covered Classified Forest Grazing Licenses was completed in 2019. Of the 133 parcels, 45 were confirmed to be Priority 1, with suitable spawning habitat for one or more of the HCP-covered species.	v.2.8-9

TRANSITION LANDS STRATEGY

The purpose of the transition lands strategy is to describe the process for moving DNRC lands into or out of the HCP project area. The strategy ensures adequate levels of conservation for HCP species while allowing DNRC to meet its land management and fiduciary trust obligations. This subsection summarizes land transactions within two cap types (5% and 10%) from the period between January 1, 2019 and December 31, 2019. According to the HCP, DNRC will cap the removal of HCP project area lands in the NCDE and CYE grizzly bear recovery zones, CYE NROH, LMAs, and bull trout core habitat areas to 5% of the baseline of the amended HCP project area. Additionally, DNRC would cap the removal of all other HCP lands at 10 to 15% of the amended HCP project area.

Land Dispositions

No HCP project area lands were disposed of in 2019. DNRC with well within the cap described above.

TRAINING

Training DNRC staff responsible for implementing the HCP timber sale planning, design and administration is critical to ensure correct and consistent implementation of HCP commitments.

Implementation Training for this Reporting Period

The following training took place during the reporting period and will continue as the HCP progresses forward.

Bear Avoidance Training

A web-based approach to satisfy GB-PR1 was approved by the USFWS and in place July 30, 2013. All staff that normally, or occasionally, perform duties associated with HCP-covered activities are required to

view the bear-avoidance training video hosted on the DNRC employee intranet. To date there have been over 250 employee viewings of the video. A database is monitored by FMB staff to ensure compliance with GB-PR1 “employees trained on bear avoidance”.

Project-level Training

Project-level training occurs on a regular basis. Forest Management Bureau and Land Office Specialists participate on all Interdisciplinary Teams (ID) for projects in the HCP planning area. These Specialists are very familiar with the HCP and the conservation commitments. Many of them have served on the HCP Workgroup. This has made project-level training one of the most effective training tools for DNRC field staff. Questions arise on a project that might never surface in a classroom training session. Project-level training is ongoing and will continue to be a primary training method.

Additional Unit-specific training was provided in spring 2019 for the Swan River State Forest and Stillwater Unit staff.

CHANGED CIRCUMSTANCES

The processes for responding to Changed Circumstances are described in Chapter 6 of the HCP. The USFWS and DNRC are required to ensure changed circumstances are identified and planned for in the HCP. Changed Circumstances may be a result of administrative changes, natural events or a natural disturbance. (DNRC 2010)

There were no Changed Circumstances during this reporting period.

ADJUSTING FOR NEW RESEARCH

DNRC and USFWS are required to exchange any new relevant research or emerging science annually and at the 5-year review. Both parties cooperatively determine if the new information will warrant changes to commitments or management actions.

Sugden, B. D., R. Steiner, J. E. Jones. 2019. Streamside management zone effectiveness for water temperature control in Western Montana. *International Journal of Forest Engineering*. 30: 87–98.

Key Findings

- Conducted pre- and post-harvest monitoring of riparian timber stands, stream shading, stream temperature, and fish populations associated with SMZ buffers and riparian timber harvest methodologies included in the Plum Creek Native Fish HCP.
- 30 harvest sites assessed between 1999-2004
 - 13% reduction in basal area due to direct harvest, 2% reduction in basal area associated with post-harvest windthrow. Windthrow was a factor in 4 sites.
 - Canopy cover decreased based on FVS modeling by 3% (77% pre-harvest, 74% post-harvest) and increased by 1% based on densiometer results (66% to 67%). Neither result was statistically significant.
 - No significant response to harvest noted based on stream temperatures.
 - Noted increases in abundance and biomass following harvest, with treatment sites indicating larger increases in both metrics than observed in control sites.

- Similar to results from Oregon on Coastal Cutthroat (Bateman and Gresswell 2016)

D. P. Peterson, and H. M. Neville. 2019. Comparison of methods to verify upstream passage by trout at remediated culverts in four Rocky Mountain streams. 38: 738–752.

Key Findings

- Evaluation of 4 crossing replacements conducted in Montana and Idaho near Lolo Pass
- Marked fish below culverts with VIE and PIT to determine the most cost effective monitoring to evaluate fish passage projects
- Study conducted over the course of a single year at each site
- Minimal upstream movement noted through CMPs
 - ~600 fish marked across 4 sites, noted ~20 recaptures during electrofishing surveys, and ~30 recaptures from stationary and mobile PIT tag detection
 - Noted significant error in identifying batch marks that may be due to observer error or tag loss.

Ross, J. A., D. M. Infante, D. J. Martin, M. Rey. 2019. North American Journal of Fisheries Management. Effects of riparian timber harvest on Southeast Alaska stream habitat after 30–40 years: Insights for management. 39: 328–342.

Key Findings

- Compared bankfull width, stream gradient, pool area, and residual pool depth between harvested and unharvested stands after 30-40 years post-harvest
- Harvested stands had a minimum length of 100m with clearcut harvest prescriptions in the riparian zone of at least one streambank.
- Similar bankfull width and gradient noted across harvested and unharvested watersheds
 - Harvested: 6.1m BFW, 3.0% gradient
 - Unharvested: 5.9m BFW, 2.0% gradient
- Similar percent pool area and residual pool depth across harvested and unharvested watersheds
 - Harvested: 45.9% pool habitat, 0.44 m residual pool depth
 - Unharvested: 44.7% pool habitat, 0.44 m residual pool depth
- Increased density of pool habitat in unharvested sites (71.9 pool/km) vs harvested (61.5 pools/km)
- Noted declines in median particle size (d50=28.8 mm in harvested stands, d50=44.0mm in unharvested stands)
 - D50 still remains in the gravel particle size class
- No difference in LWD density across stream sizes, but reach length may limit inference across watersheds, suggested a minimum length of 1-2 km for better data.
- Legacy LWD retained after 30-40 years
- Noted similar size distribution of LWD post-harvest with smaller recruited LWD not shifting the size distribution significantly.
- Smaller more recent inputs of LWD did not function as often as larger older recruited LWD
- Increases in sediment likely due to roads, windthrow, landslide post-harvest.

SUMMARY

The DNRC has successfully met the requirements for the eighth year of HCP implementation and monitoring.

REFERENCES

- DNRC. 2010. Montana Department of Natural Resources and Conservation Forested State Trust Lands Habitat Conservation Plan: Final EIS, Volume II, Forest Management Bureau, Missoula, Montana.
- DNRC. 2018. Supplemental Environmental Impact Statement For the Proposed Amendment to the Endanger Species Act 10(a)(1)(B) Permit Associated with the Montana Department of Natural Resources and Conservation Forested State Trust Lands Habitat Conservation Plan. Forest Management Bureau, Missoula, Montana.

Attachment GB-1: Miles of Road in Various Grizzly Bear Management Areas

2018 HCP BASELINE DATA - DNRC Lands in the HCP Project Area									
Land Offices and Unit Offices in Recovery Zones (Scattered or Blocked Status)	Linear Miles of Road in Recovery Zones						Area		Road Density* (mi/mi ²)
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Abandoned	Reclaimed	Total*	Total Area (mi ²)	Acres	
NWLO	197.6	666.1	16.3	15.3	34.3	879.9	252.0	161,915	3.5
Kalispell Unit NCDE (Scattered)	14.6	28.2	0.0	2.6	0.0	42.8	10	6,465	4.2
Libby Unit CYE (Scattered)	0.0	8.2	0.1	0.4	0.2	8.3	4	2,848	1.9
Plains Unit CYE (Scattered)**	7.7	6.2	0.0	3.1	0.0	13.9	5	3,517	2.8
Stillwater Unit NCDE (Blocked)	122.0	227.4	6.7	9.1	3.8	356.1	141	90,512	2.5
Stillwater Unit NCDE (Scattered)	2.0	11.1	0.0	0.0	0.0	13.1	4	2,474	3.4
Swan Unit NCDE (Blocked)**	51.3	385.0	9.5	0.1	30.2	445.8	88	56,099	5.1
SWLO	14.0	26.0	2.8	7.4	1.8	42.8	10	6,330	4.3
Clearwater Unit NCDE (Scattered)**	14.0	26.0	2.8	7.4	1.8	42.8	10	6,330	4.3
Missoula Unit NCDE (Scattered)	0.0	0.0	0.0	0.0	0.0	0.0	0	-	N/A
CLO	0.1	0.2	0.0	0.0	0.7	0.3	1	639	0.3
Helena Unit NCDE (Scattered)	0.2	0.3	0.0	0.0	0.5	0.5	1	639	0.5

** Does not include Abandoned or Reclaimed Roads*

***land acquisition and subsequent transition into the HCP have created a new baseline for these management units in 2018.*

2019 HCP Annual Report - DNRC Lands in the HCP Project Area									
Land Offices and Unit Offices in Recovery Zones (Scattered or Blocked Status)	Linear Miles of Road in Recovery Zones						Area		Road Density* (mi/mi ²)
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Abandoned	Reclaimed	Total*	Total Area (mi ²)	Acres	
NWLO	175.9	708.4	16.3	19.8	45.2	900.6	252	161,883	3.6
Kalispell Unit NCDE (Scattered)	11.9	32.9	0.0	2.6	0.3	44.8	10	6,457	4.5
Libby Unit CYE (Scattered)	0.0	6.9	0.1	0.4	1.2	7.0	4	2,846	1.7
Plains Unit CYE (Scattered)	7.7	6.2	0.0	3.1	0.0	13.9	5	3,517	2.8
Stillwater Unit NCDE (Blocked)	103.3	253.1	6.7	12.5	13.4	363.1	141	90,481	2.6
Stillwater Unit NCDE (Scattered)	1.7	11.7	0.0	0.0	0.0	13.4	4	2,483	3.4
Swan Unit NCDE (Blocked)	51.3	397.7	9.5	1.2	30.3	458.4	88	56,099	5.2
SWLO	13.9	26.0	2.8	7.4	1.9	42.6	10	6,330	4.3
Clearwater Unit NCDE (Scattered)	13.9	26.0	2.8	7.4	1.9	42.6	10	6,330	4.3
Missoula Unit NCDE (Scattered)	0.0	0.0	0.0	0.0	0.0	0.0	0	-	N/A
CLO	0.1	0.2	0.0	0.0	0.7	0.3	1	639	0.3
Helena Unit NCDE (Scattered)	0.1	0.2	0.0	0.0	0.7	0.3	1	639	0.3

** Does not include Abandoned or Reclaimed Roads*

Final 2019 HCP Annual Report

2018 HCP BASELINE DATA - DNRC Lands in the HCP Project Area									
Land Offices and Unit Offices in Non Recovery Occupied Zone (Scattered or Blocked Status)	Linear Miles of Road in Non Recovery Occupied Zones						Area		Road Density* (mi/mi ²)
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Abandoned	Reclaimed	Total*	Total Area (mi ²)	Acres	
NWLO	102.8	147.6	3.0	12.5	7.7	250.1	58.0	37,682	4.3
Kalispell Unit NCDE (Scattered)	17.9	9.0	0.0	0.3	2.1	27.0	9	5,950	2.9
Libby Unit CYE (Scattered)	23.3	49.0	1.2	0.0	0.0	73.4	15	9,856	4.8
Libby Unit NCDE (Scattered)	0.0	0.0	0.0	0.0	0.0	0.0	0	0	N/A
Plains Unit CYE (Scattered)**	7.1	9.0	1.8	0.2	0.7	17.9	4	2,237	4.5
Plains Unit NCDE (Scattered)	6.9	9.7	0.0	1.2	0.0	13.4	4	2,813	3.0
Stillwater Unit NCDE (Scattered)	47.6	70.9	0.0	10.8	4.9	118.4	26	16,826	4.5
SWLO	69.7	358.1	17.6	47.6	12.9	445.4	91	58,369	4.9
Anaconda Unit NCDE (Scattered)	6.7	14.4	0.0	0.0	0.0	21.1	9	6,011	2.3
Clearwater Unit NCDE (Scattered)**	63.0	343.7	17.6	47.6	12.9	424.3	82	52,358	5.2
Missoula Unit NCDE (Scattered)	0.0	0.0	0.0	0.0	0.0	0.0	0	0	N/A
CLO	10.3	68.2	0.1	7.3	1.9	78.5	53.0	33,717	1.5
Bozeman Unit GYE (Scattered)	5.0	6.0	0.1	0.0	0.0	11.0	13	8,129	0.9
Dillon Unit GYE (Scattered)	1.5	51.9	0.0	6.7	0.0	53.4	31	19,627	1.7
Helena Unit NCDE (Scattered)	3.8	10.3	0.0	0.6	1.9	14.1	9	5,961	1.5

* Does not include Abandoned or Reclaimed Roads

**land acquisition and subsequent transition into the HCP have created a new baseline for these management units.

2019 HCP Annual Report - DNRC Lands in the HCP Project Area									
Land Offices and Unit Offices in Non Recovery Occupied Zone (Scattered or Blocked Status)	Linear Miles of Road in Non Recovery Occupied Zones						Area		Road Density* (mi/mi ²)
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Abandoned	Reclaimed	Total*	Total Area (mi ²)	Acres	
NWLO	107.1	161.6	3.1	11.9	12.2	271.8	57.0	36,744	4.8
Kalispell Unit NCDE (Scattered)	20.1	17.2	0.1	0.3	2.3	37.3	9	5,613	4.1
Libby Unit CYE (Scattered)	24.8	56.5	1.2	0.0	0.2	82.4	15	9,838	5.5
Libby Unit NCDE (Scattered)	0.0	0.0	0.0	0.0	0.0	0.0	0	0	N/A
Plains Unit CYE (Scattered)	7.1	9.0	1.8	0.2	0.7	17.9	4	2,237	4.5
Plains Unit NCDE (Scattered)	6.9	5.4	0.0	0.6	0.0	12.3	3	2,212	4.1
Stillwater Unit NCDE (Scattered)	48.2	73.6	0.1	10.9	9.0	121.9	26	16,844	4.7
SWLO	62.9	385.6	17.4	51.5	16.4	465.9	92.0	59,143	5.1
Anaconda Unit NCDE (Scattered)	1.3	34.5	0.0	1.6	3.0	35.8	9	6,011	4.0
Clearwater Unit NCDE (Scattered)	61.5	351.1	17.4	49.9	13.3	430.1	83	53,132	5.2
Missoula Unit NCDE (Scattered)	0.0	0.0	0.0	0.0	0.0	0.0	0	0	N/A
CLO	16.1	72.5	0.0	1.2	7.9	88.6	53.0	33,701	1.7
Bozeman Unit GYE (Scattered)	5.9	12.2	0.0	0.6	0.4	18.2	13.0	8,143	1.4
Dillon Unit GYE (Scattered)	4.1	54.8	0.0	0.0	0.6	58.9	31.0	19,628	1.9
Helena Unit NCDE (Scattered)	6.1	5.5	0.0	0.6	6.9	11.6	9.0	5,930	1.3

* Does not include Abandoned or Reclaimed Roads

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2018 HCP BASELINE DATA - DNRC Lands in the HCP Project Area									
Land Offices and Unit Offices Outside Grizzly Bear Zones (Scattered Status)	Linear Miles of Road in Non Grizzly Bear Designated Areas						Area		Road Density* (mi/mi ²)
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Abandoned	Reclaimed	Total*	Total Area (mi ²)	Acres	
NWLO	255.6	318.1	3.4	28.3	15.0	577.0	138.0	88,293.0	4.2
Kalispell Unit	110.4	71.9	0.0	9.8	10.9	182.3	44.0	27,980	4.1
Libby Unit	29.2	75.6	0.3	0.0	0.0	105.1	24.0	15,341	4.4
Plains Unit**	116.0	170.6	3.1	18.5	4.1	289.6	70	44,972	4.1
SWLO	249.4	777.7	13.9	79.6	11.5	1,040.9	242.0	154,299	4.3
Anaconda Unit	78.2	63.4	0.0	2.0	0.8	141.6	61.0	38,760	2.3
Clearwater Unit**	17.7	42.1	5.2	5.6	1.4	65.0	12	7,880	5.4
Hamilton Unit**	32.9	114.4	3.7	56.4	7.0	151.0	37	23,496	4.1
Missoula Unit**	120.5	557.7	5.0	15.5	2.4	683.3	132	84,163	5.2
CLO	44.9	142.8	1.9	13.1	1.7	189.6	122.4	78,358	1.5
Bozeman Unit	6.0	21.0	1.6	0.8	0.0	28.5	13.0	8,363	2.2
Dillon Unit	20.1	100.7	0.3	12.2	1.5	121.1	79.0	50,474	1.5
Helena Unit	18.8	21.2	0.0	0.0	0.2	40.0	31.0	19,520	1.3

** Does not include Abandoned or Reclaimed Roads*

***land acquisition and subsequent transition into the HCP have created a new baseline for these management units.*

2019 HCP Annual Report - DNRC Lands in the HCP Project Area									
Land Offices and Unit Offices Outside Grizzly Bear Zones (Scattered Status)	Linear Miles of Road in Non Grizzly Bear Designated Areas						Area		Road Density* (mi/mi ²)
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Abandoned	Reclaimed	Total*	Total Area (mi ²)	Acres	
NWLO	246.7	363.6	3.2	28.4	14.0	613.6	138	88,023	4.4
Kalispell Unit	98.0	114.1	0.0	9.9	9.9	212.2	44	27,952	4.8
Libby Unit	33.0	78.0	0.1	0.0	0.0	111.0	24	15,099	4.6
Plains Unit	115.7	171.5	3.1	18.5	4.1	290.4	70	44,972	4.1
SWLO	187.8	845.7	13.9	92.2	13.1	1047.4	241	153,846	4.3
Anaconda Unit	15.4	128.5	0.0	14.9	2.1	144.0	60	38,227	2.4
Clearwater Unit	17.7	42.1	5.2	5.6	1.4	65.0	12	7,880	5.4
Hamilton Unit	32.9	114.4	3.7	56.4	7.0	151.0	37	23,496	4.1
Missoula Unit	121.7	560.6	5.0	15.3	2.7	687.4	132	84,243	5.2
CLO	68.3	102.9	4.7	8.3	8.4	175.8	123	78,883	1.4
Bozeman Unit	11.8	18.0	1.6	0.0	0.7	31.4	13	8,368	2.4
Dillon Unit	32.4	84.9	3.0	8.3	7.5	120.4	80	51,000	1.5
Helena Unit	24.0	0.0	0.0	0.0	0.2	24.0	30	19,515	0.8

** does not include abandoned or reclaimed*

Attachment LY-1: Composition of current (March 6, 2019) lynx habitat data, using the HCP lynx habitat definitions, on LMAs in the HCP project area

2018 HCP BASELINE - DNRC lands in the HCP Project Area (Data from March 6, 2019)												
Habitat Class	Proposed LMA's (Land Office)											
	Stillwater West (NW)		Stillwater East (NW)		Coal Creek (NW)		Swan (NW)		Seeley Lake Area (SW)		Garnet Area (SW)	
Winter Foraging Habitat	17,505	50%	21,136	62%	5,672	44%	27,095	53%	1,865	42%	1,669	41%
Summer Foraging Habitat	10,114	29%	5,922	17%	2,169	17%	7,927	16%	187	4%	250	6%
Other Suitable Habitat	3,540	10%	3,057	9%	1,676	13%	5,021	10%	806	18%	1,555	38%
Suitable Habitat Subtotal	31,159	89%	30,115	89%	9,517	74%	40,042	79%	2,858	64%	3,475	86%
Temporary Non-Suitable Habitat	3,772	11%	3,913	11%	3,396	26%	10,763	21%	1,581	36%	588	14%
Total Potential Lynx Habitat	34,931	91%	34,028	93%	12,914	86%	50,806	91%	4,439	45%	4,063	45%
Non-Habitat	3,644	9%	2,629	7%	2,057	14%	5,292	9%	5,480	55%	4,873	55%
DNRC Total Acres	38,575	100%	36,657	100%	14,970	100%	56,098	100%	9,919	100%	8,936	100%

2019 HCP Annual Report - DNRC lands in the HCP Project Area (Data from March 16, 2020)												
Habitat Class	Proposed LMA's (Land Office)											
	Stillwater West (NW)		Stillwater East (NW)		Coal Creek (NW)		Swan (NW)		Seeley Lake Area (SW)		Garnet Area (SW)	
Winter Foraging Habitat	17,392	50%	19,700	58%	5,566	44%	27,070	53%	1,869	42%	1,669	41%
Summer Foraging Habitat	10,103	29%	5,914	17%	2,108	17%	7,914	16%	380	9%	250	6%
Other Suitable Habitat	3,565	10%	3,160	9%	1,690	13%	5,021	10%	1,286	29%	1,555	38%
Suitable Habitat Subtotal	31,060	89%	28,774	85%	9,365	74%	40,005	79%	3,535	79%	3,475	86%
Temporary Non-Suitable Habitat	3,772	11%	5,273	15%	3,260	26%	10,799	21%	913	21%	588	14%
Total Potential Lynx Habitat	34,831	90%	34,047	93%	12,625	86%	50,804	91%	4,448	45%	4,063	45%
Non-Habitat	3,744	10%	2,610	7%	2,036	14%	5,292	9%	5,489	55%	4,873	55%
DNRC Total Acres	38,575	100%	36,657	100%	14,661	100%	56,096	100%	9,937	100%	8,936	100%

Attachment LY-2: Acres of existing lynx habitat on Non-LMA parcels, using HCP lynx habitat definitions, on DNRC lands by Land Office in the HCP Project Area

2018 HCP BASELINE DATA - DNRC lands in the HCP Project Area (Data from March 6, 2019)							
Habitat Class	HCP Project Area (%)						
	NWLO		SWLO		CLO		Total
Winter Foraging Habitat	38,974	59%	18,289	48%	0	0%	57,263
Summer Foraging Habitat	5,023	8%	6,306	17%	2,783	8%	14,112
Other Suitable Habitat	12,390	19%	7,594	20%	24,572	71%	44,556
Suitable Habitat Subtotal	56,388	86%	32,188	84%	27,355	79%	115,931
Temporary Non-Suitable Habitat	9,346	14%	6,014	16%	7,435	21%	22,795
Total Potential Lynx Habitat	65,734	47%	38,202	19%	34,790	31%	138,726
Non-Habitat (includes non forested)	74,591	53%	162,663	81%	78,434	69%	315,688
Total Acres	140,325	100%	200,865	100%	113,224	100%	454,414

2019 HCP Annual Report - DNRC lands in the HCP Project Area (Data from March 16, 2020)							
Habitat Class	HCP Project Area (%)						
	NWLO		SWLO		CLO		Total
Winter Foraging Habitat	36,014	56%	17,854	47%	-	-	53,868
Summer Foraging Habitat	4,986	8%	6,390	17%	2,758	8%	14,134
Other Suitable Habitat	12,229	19%	7,970	21%	24,059	69%	44,258
Suitable Habitat Subtotal	53,228	82%	32,214	84%	26,817	77%	112,260
Temporary Non-Suitable Habitat	11,624	18%	6,000	16%	7,942	23%	25,566
Total Potential Lynx Habitat	64,852	46%	38,215	19%	34,759	31%	137,826
Non-Habitat*	75,830	54%	162,731	81%	78,465	69%	317,026
Total Acres	140,682	100%	200,945	100%	113,224	100%	454,851

Attachment SD-1: Road Activities Included in DNRC Timber Sale Contracts Sold Between 2012 and 2019

2019 HCP ANNUAL REPORT - DNRC LANDS IN THE HCP PROJECT AREA									
Road Activity	HCP PROJECT AREA ROAD ACTIVITIES (MILES) BY REPORTING PERIOD								
	2012	2013	2014	2015	2016	2017	2018	2019	Total Road Activities
Permanent Road Construction	15.7	25.6	23.0	27.2	26.0	23.7	9.9	15.1	166.2
Temporary Road Construction	5.3	10.9	9.3	6.0	9.2	10.5	1.6	4.4	57.2
Road Reclamation	4.3	4.6	1.9	0.2	0.0	0.0	1.7	2.1	14.8
Road Abandonment	0.0	0.0	1.0	1.7	0.1	0.0	0.0	0.5	3.3
Road Reconstruction	10.8	11.1	11.3	19.7	16.6	6.6	9.4	15.6	101.1
BMP Maintenance	120.2	111.3	204.6	177.9	176.3	199.8	153.3	171.7	1315.1
Total Road Activities	156.3	163.5	251.1	232.7	228.2	240.6	175.9	209.4	1,657.7

Attachment SD-2: Road Inventory accomplishments from 2015 thru 2019 by HCP Aquatic Analysis Unit.

Aquatic Planning Unit	Total Road (miles)	6th Code Watersheds	Calendar Year Ending									
			2015		2016		2017		2018		2019	
			Miles Inventoried	Percent Inventoried	Miles Inventoried	Percent Inventoried	Miles Inventoried	Percent Inventoried	Miles Inventoried	Percent Inventoried	Miles Inventoried	Percent Inventoried
Bitterroot	228.9	27	126.8	55%	141.5	62%	179.2	78%	179.2	78%	187.0	82%
Blackfoot	958.5	52	346.9	36%	350.0	37%	366.7	38%	376.5	39%	888.0	93%
Flathead Lake	71.1	10	20.7	29%	20.7	29%	21.3	30%	21.3	30%	33.2	47%
Lower Clark Fork	23.6	15	5.4	23%	5.4	23%	5.4	23%	5.5	23%	5.6	24%
Lower Kootenai	15.3	7	4.5	29%	4.6	30%	4.9	32%	4.9	32%	4.8	31%
Middle Clark Fork	593.3	84	143.9	24%	227.8	38%	290.2	49%	298.0	50%	353.2	60%
Middle Kootenai	225.7	25	75.9	34%	76.3	34%	82.3	36%	97.6	43%	122.7	54%
North Fork Flathead	67.9	15	2.1	3%	2.4	4%	2.4	4%	2.4	4%	39.7	58%
Rock Creek	22.5	8	12.3	54%	12.3	54%	14.6	65%	15.1	67%	15.1	67%
Stillwater	466.9	18	129.5	28%	131.7	28%	138.1	30%	230.5	49%	341.3	73%
Swan	522.5	10	148.1	28%	173.7	33%	178.8	34%	219.0	42%	405.3	78%
Upper Clark Fork	247.9	55	123.5	50%	135.2	55%	139.5	56%	140.6	57%	191.8	77%
Upper Kootenai	93.9	19	37.8	40%	38.7	41%	39.6	42%	39.6	42%	39.6	42%
Upper Missouri	154.7	51	2.9	2%	3.3	2%	5.2	3%	5.2	3%	9.6	6%
Summary	3,692.6	396	1,180.1	32%	1,323.6	36%	1,468.3	40%	1,635.4	44%	2,636.8	71%

Attachment AQ-GZ: Annual Summary Statistics of Grazing Inspections, Verifications and Implemented Corrective Actions

Calander Year	Midterm Evals	Renewal Evals	Total Evaluations	HCP Parcels	% HCP	Supporting HCP Fishery?	% HCP Fishery	Verification Completed	% Verification	Corrective Action Implemented	Cumlative Corrective Actions
2012	19	81	100	83	83%	30	36%	12	12%	4	4
2013	63	60	123	98	80%	24	24%	10	8%	1	5
2014	33	25	58	39	67%	13	33%	3	5%	4	9
2015	17	26	43	27	63%	7	26%	3	7%	1	10
2016	42	62	104	76	73%	13	17%	2	2%	0	10
2017	55	28	83	65	78%	16	25%	4	5%	0	10
2018	51	69	120	96	80%	37	39%	4	3%	1	11
2019	25	31	56	37	66%	12	32%	2	4%	1	12
Totals/Averages	305	382	687	521	74%	152	29%	30	6%	12	12