

# Summary of Beaver Census on the South Fork of Toponce Creek

By

Mike Settell, M.S.  
Watershed Guardians

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## Overview

The South Fork of Toponce Creek is located in T6S R37, 38 E of the Boise Meridian. Sections censused are Sections 29, 30 and 31 of 38E and Sections 34, 35 and 36 of 37E. Sections were censused during March of 2018, June 2019 and June of 2020 on foot, with teams of trained volunteers walking the length of the stream in sections marked off to limit the length of stream reach that each team was to census. Data on spoor related to beaver activity were recorded on log sheets and these returned to base for data entry. Figure 1 shows the topographical map with Township Range and Sections identified.

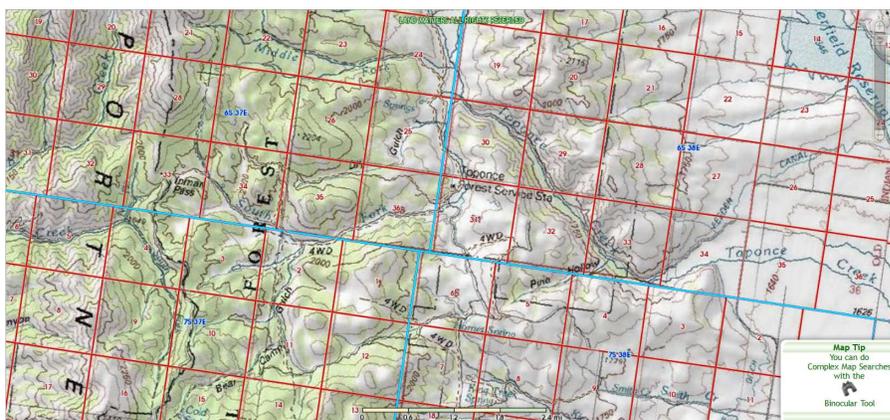


Figure 1 PLSS map showing the Toponce Basin

During the initial census year of 2018, access was limited to Sections 29, 30, 32 and 33 due to the gate closure at the USFS boundary, deep snow and limited access. However, during that year, no beaver were observed during that census. Subsequent censuses were conducted in June when road access was less difficult. This lower zone was censused by drive by only due to the proximity of the stream to the road.

## Census Zones

The South Fork of Toponce Creek was split into 5 zones, each identified by a unique Roman numeral. Each Zone was marked off to be between 1 and 2 miles to reduce the distance that volunteers needed to census.



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Census zones are marked out as shown in Table 1, with each team of two or more volunteers walking the length of the stream and recording various beaver indicators along the way.

Table 1: Summary of Zone Location for SF Toponce Creek, BeaverCount

Zone	Start Latitude	Start Longitude	End Latitude	End Longitude	Miles in Zone
XL	42.849965°	-112.014013°	42.877016°	-112.062054°	3.26
XLI	42.877016°	-112.062054°	42.868011°	-112.064579°	0.68
XLII	42.868011°	-112.064579°	42.855122°	42.855122°	2.01
XLIII	42.855122°	42.855122°	42.846234°	-112.096101°	1.39
XLIV	42.846234°	-112.096101°	42.849544°	-112.120049°	1.36
<b>Total</b>	---	---	---	---	<b>8.7</b>

Zone boundaries were marked by flagging or other recognizable evidence that was discussed prior to commencing the census. Figure

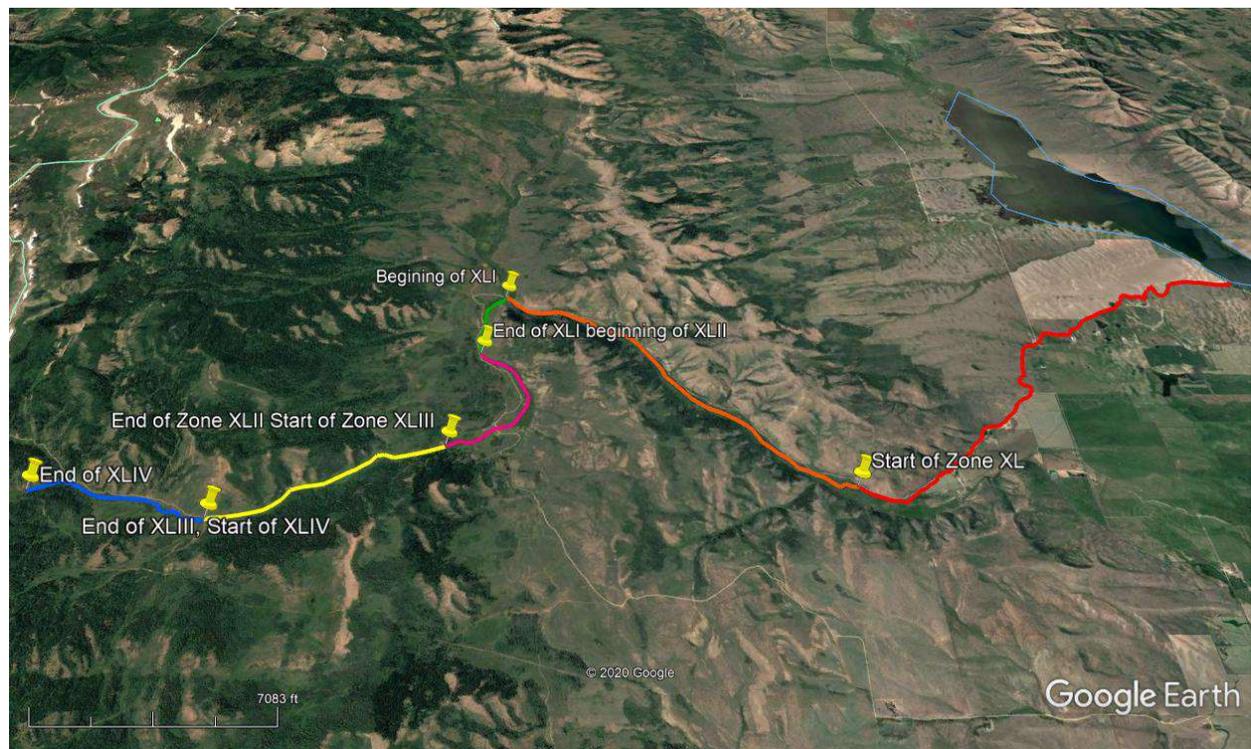


Figure 2: Approximate locations of the Toponce Zones

## Method

Walked near the stream channel on foot and recorded evidence for beaver activity. Volunteers were previously trained on identifying beaver evidence (spoor) with particular emphasis on distinguishing



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between active and inactive systems. Fourteen different parameters were selected with each of these given a weighting factor. Where the geometric mean of the weighting factor exceeds a value of 0.8, the system is considered active. Those results are summarized below with only the active dams and the status enumerated.

## Results

Table 2 summarizes the results for beaver activity on the South Fork of the Toponce basin.

Table 2: Summary of BeaverCount™ for the South Fork of Toponce Creek for years 2018-2020

Year	km / Miles	Total Logs / Active Logs	Active Dams	Inactive	Change (Active)
2018	5.6 / 3.5	1 / 1	4	5	---
2019	14 / 8.7	9 / 2	9	16	+5
2020	14 / 8.7	3 / 1	2	29	-7

In this table, we use the term “log” to describe an activity cluster. We compared the change in active dams, not active clusters. That is, the three active dams in the 8.7 miles censused in 2019 and 2020 were all in one cluster (logs). Further, of the three clusters identified, only one was active. In contrast, there were 9 active clusters in 2019. While we did not census the upper reaches of Toponce (Zones XLI, XLII, XLIII, XLIV) in 2018 due to deep snow, we inferred that these upper zones on the South Fork of Toponce included significantly more beaver in 2018 due to the number of inactive dams (16) that were counted in 2019. An drive-by inspection in July of 2018 indicated that the South Fork Toponce Creek included more active ponds than measured in 2019.

## Conclusions

We measured the beaver activity on the South Fork of Toponce Creek in Southwest Caribou County, Idaho on the Caribou-Targhee National Forest for three seasons. Difficult access in 2018 prevented us from counting the upper reaches of the stream. In 2019 results suggested a decline in activity from 2018 and this decline continued in 2020 to the point that only one active cluster was found in 8.7 miles of otherwise suitable beaver habitat. The Idaho Fish and Game currently manages the allowable trapping in this stream and allows only 5 animals to be trapped during the regular trapping season. There was no recorded depredation trapping between 2018 and 2020.

Due to their nature, one beaver will construct as many as 15 dams per breeding pair. Using activity alone to estimate populations may over-estimate the number of beaver in an area providing a false biasing the number of beaver that can be trapped from a season high. This, coupled with the significant impact of trapping females which come to breeding age later than males as well as carrying kits during late trapping season, can lead to more rapid declines in populations.



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## Summary

The South Fork of Toponce Creek is in a remote area of Southwest Caribou county that contains one of the few breeding colonies remaining in the Portneuf watershed. Activity clusters of 0.07 were measured in 2020. The previous year the density was 0.14/km. Beavers' ponds provide habitat for Yellowstone Cutthroat, buffer spring floods and enhance water supplies for water users, grazers and wildlife. Managing this drainage such that beaver populations are sustainable levels at two reproducing colonies per kilometer will maintain the important riparian habitat in the Toponce drainage. Based upon the 50% decrease in two years and the dramatic decrease in activity over three years, closing this stream to beaver trapping and looking for evidence of un-documented takes is recommended.



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## Photos



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Figure 3: Inactive dam near the start of zone XLIV



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Figure 4: Stream scouring below blown dams, zone XLIV



Figure 5: Inactive dam on Zone XLIV



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Figure 6: Photo map for Zone XLIV



Figure 7: Inactive dam in Zone XLII, XLIII



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Figure 8: Inactive dam in Zone XLII, XLIII



Figure 9: Inactive dam in Zone XLII, XLIII



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Figure 10: Inactive dam in Zone XLII, XLIII



Figure 11: Inactive dam in Zone XLII, XLIII



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Figure 12: Inactive dam in Zone XLII, XLIII



Figure 13: Inactive dam in Zone XLII, XLIII



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Figure 14: Inactive dam in Zone XLII, XLIII



Figure 15: Inactive dam in Zone XLII, XLIII



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Figure 16: Inactive dam in Zone XLII, XLIII



Figure 17: Inactive dam in Zone XLII, XLIII



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Figure 18: Inactive dam in Zone XLII, XLIII



Figure 19: Inactive dam in Zone XLII, XLIII



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*Figure 20: Inactive dam in Zone XLII, XLIII*



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