BIGHORN BACKCOUNTRY REPORT

Results of the 15 years of research and monitoring of trails in the Bighorn

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AWA
Alberta Wilderness Association

ALBERTA WILDERNESS ASSOCIATION

For more than 50 years, AWA has spoken out in defense of those who have no voice: wilderness, wildlife, and wild waters throughout Alberta.

AWA

AWA's Work in Bighorn

- 1984-1994: AWA conducted volunteer programs to clean backcountry trails and camps of 60+ years of garbage.
- Early 2000s: AWA participated in GoA's Bighorn Access Management Advisory Group. AWA conducted annual maintenance on the Historic Bighorn Trail.
- 2003: AWA published a new book, Bighorn Wildland, and began a book tour through Alberta communities to educate Albertans about the Bighorn and conservation.
- 2003 – 2017: AWA **Bighorn Recreation and Impact Monitoring Program**


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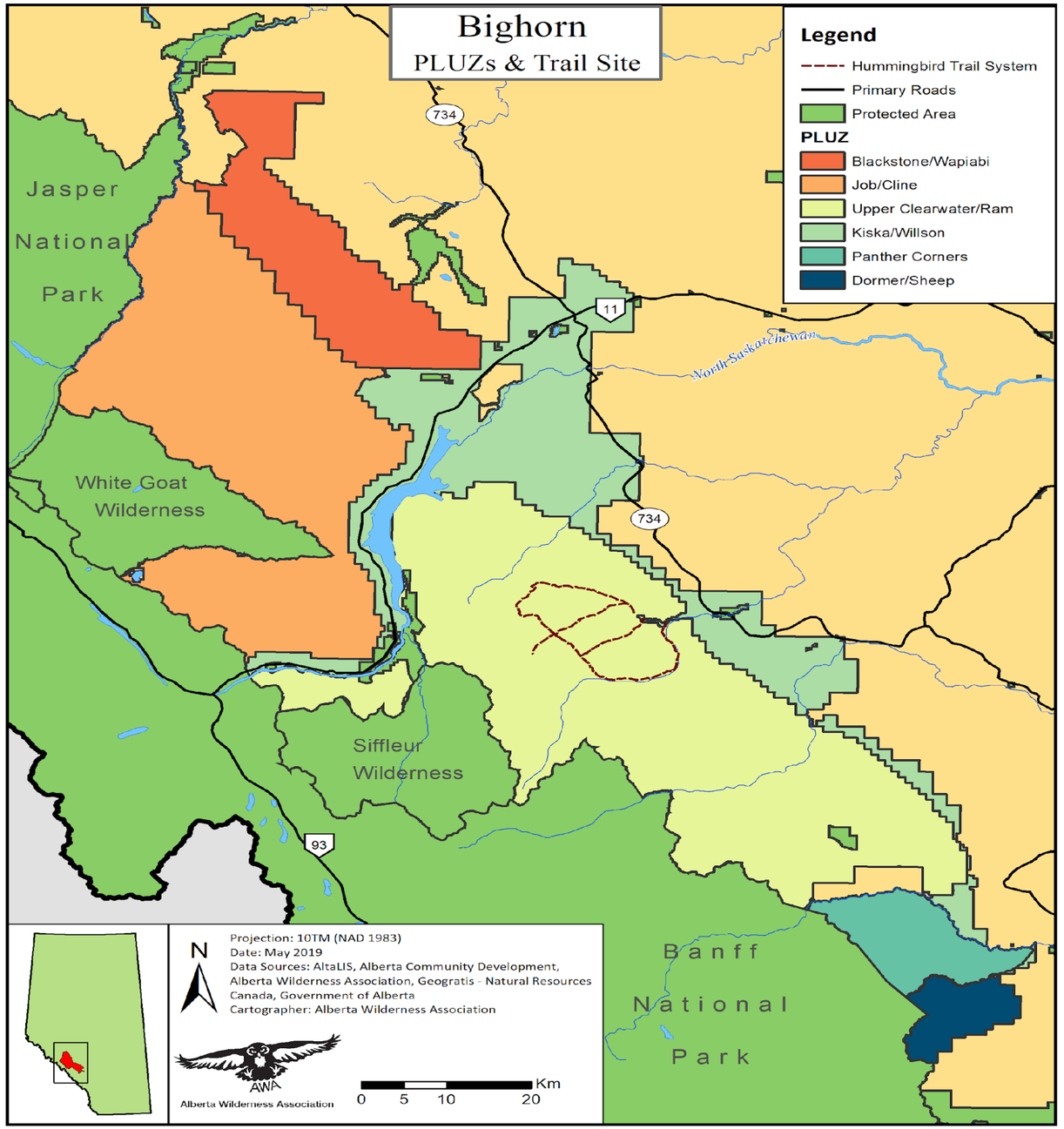
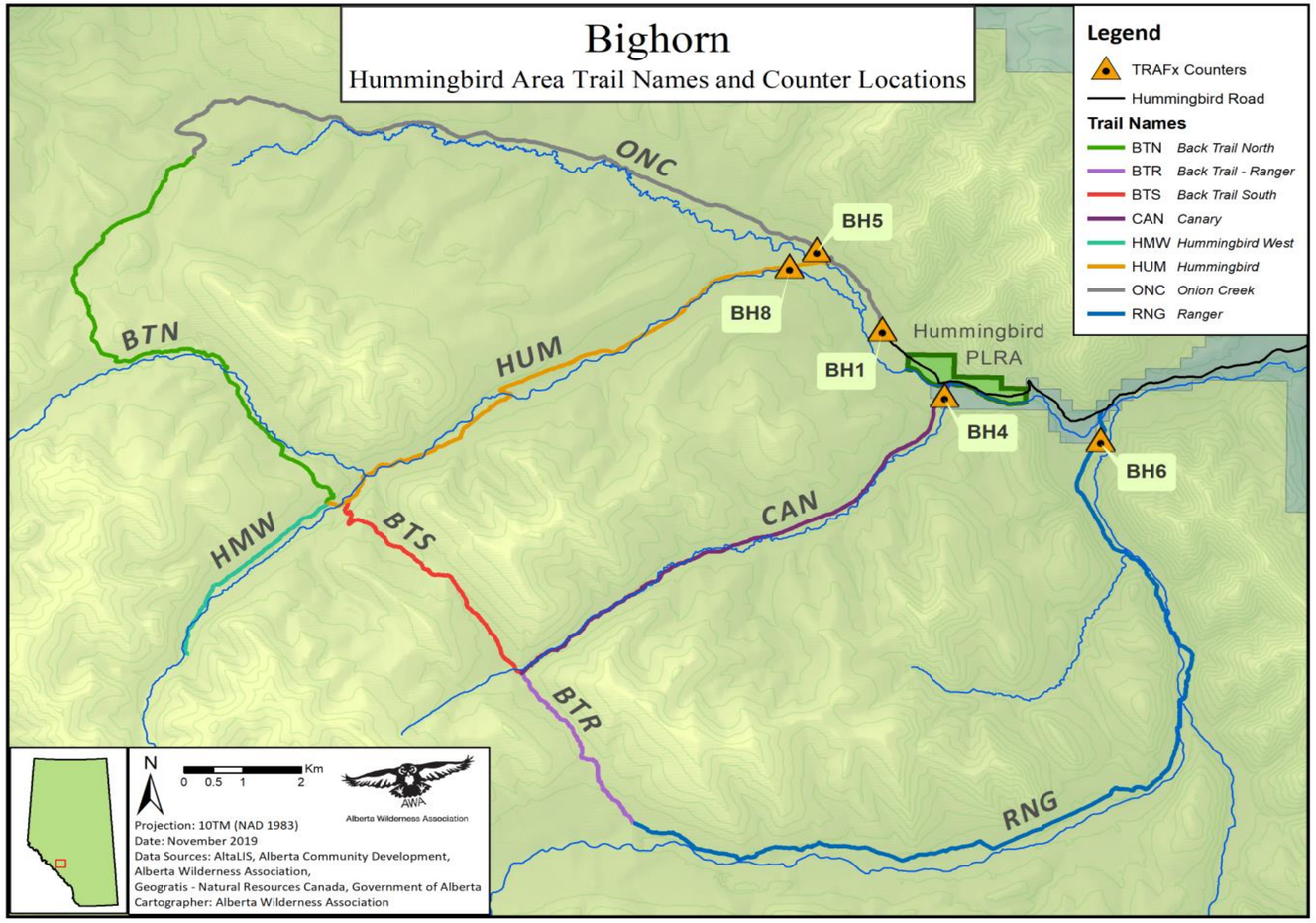
BIGHORN RECREATION AND IMPACT MONITORING PROGRAM: STUDY AREA

The Bighorn Wildland is adjacent to Jasper and Banff National Parks, consisting of approximately 5,000 km^2 of public land. Within the Bighorn, the Upper Clearwater/Ram PLUZ is the largest of the six PLUZs, comprising an area of approximately 2,000 km^2.



SAMPLING LOCATION

The largest OHV trail system established in 2002 under the Bighorn Backcountry Access Management Plan (AMP) was created in the Hummingbird Area of the Upper Clearwater/Ram PLUZ.



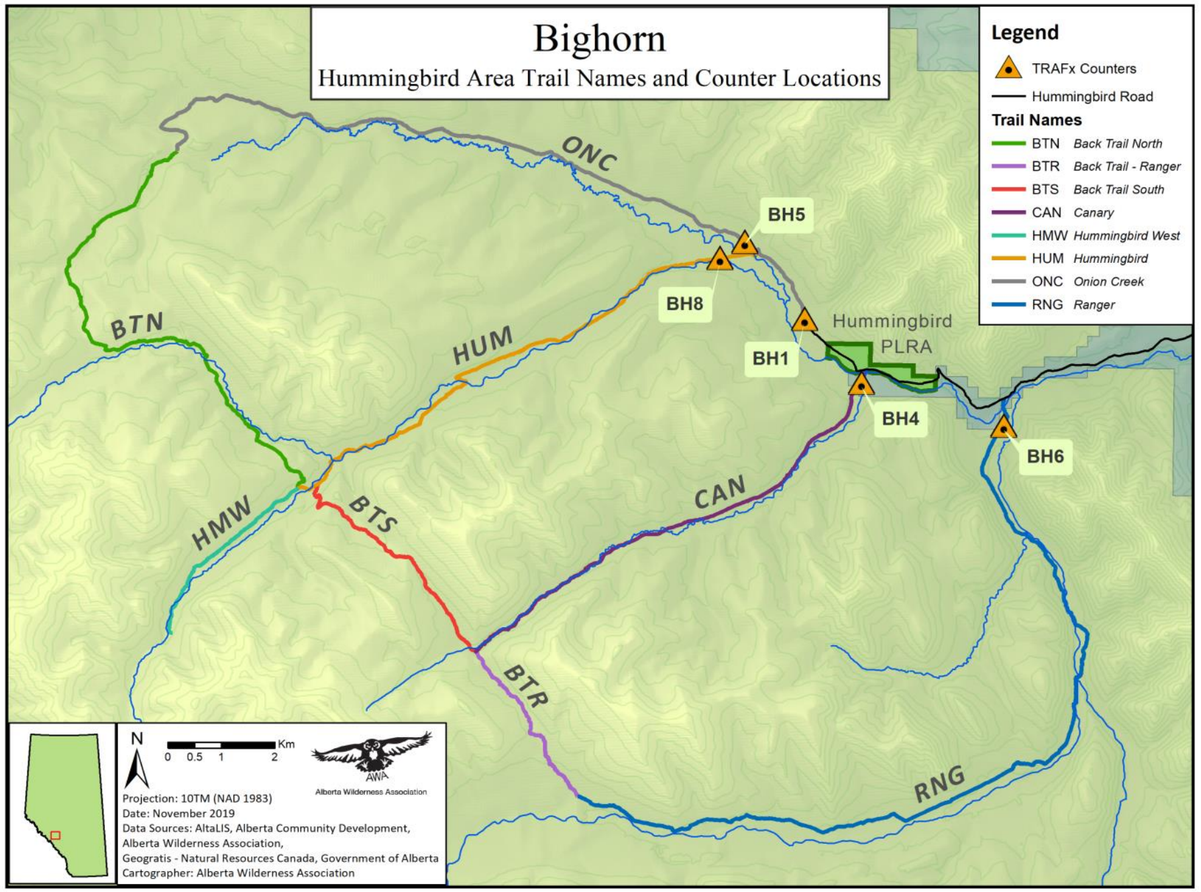
TRAIL MONITORING

- **Trail Damage Observations** – erosion, trail braiding, vegetative damage, off-trail use, crossings, campsites. GPS location, measurements of damage, photographs.
- **Vehicle Traffic Counts** – TRAFx vehicle counters were embedded in the trail at eight strategic spots in the network.

MONITORING LOCATIONS FOR DAMAGE SITE SURVEYS

Monitoring was originally planned to occur in 2003 and 2008. Initial survey took three years, then representative hotspots were monitored starting in 2006, followed by annual monitoring from 2009 – 2017. Beginning in 2012, efficiency improved with new technology and monitoring locations were expanded.

Year	CAN	BTS	BTR	HUM	BTN	HMW	RNG	ONC	Hotspots Only
2003	✗	✗	✗	✗	✗	✗	✓	✓	✗
2004	✗	✗	✗	✓	✗	✓	✗	✗	✗
2005	✓	✓	✓	✗	✓	✗	✓	✗	✗
2006	✗	✗	✗	✓	✗	✗	✗	✓	✗
2007-2011	✗	✗	✗	✗	✗	✗	✗	✗	✓
2012	✓	✓	✓	✗	✗	✗	✗	✗	✗
2013	✓	✓	✗	✗	✗	✗	✗	✗	✗
2014	✓	✓	✓	✓	✗	✗	✗	✗	✗
2015	✓	✓	✗	✓	✓	✓	✗	✗	✗
2016	✓	✓	✓	✓	✓	✗	✗	✗	✗
2017	✓	✓	✓	✓	✓	✗	✗	✗	✗



DAMAGE SITES

Damage site: Part of a designated trail where rutted depth exceeded 5 cm and where vegetation damage exceeded a width of 3 m (except where historic roads resulted in trails already exceeding 3 m width).

Erosion Event: Sites are identified as an erosion event when rut depth is deeper than 25 cm for three meters or more. These were classified by type of tracks present: motorized, equestrian, or mixed.

CHANGES IN SITE CONDITION OVER TIME

A GIS program was developed to correlate and compare observations from the same site over successive years.

The change in a site's condition over time was ranked as "Better", "Worse", "Same", or "N/A" based on:

- Rut depth
- Vegetation/Erosion Progression
- Severity Change

CAN damage site
Taken 2014-08-12
Severity: 2
L: 40m, W: 3m, D: 40cm

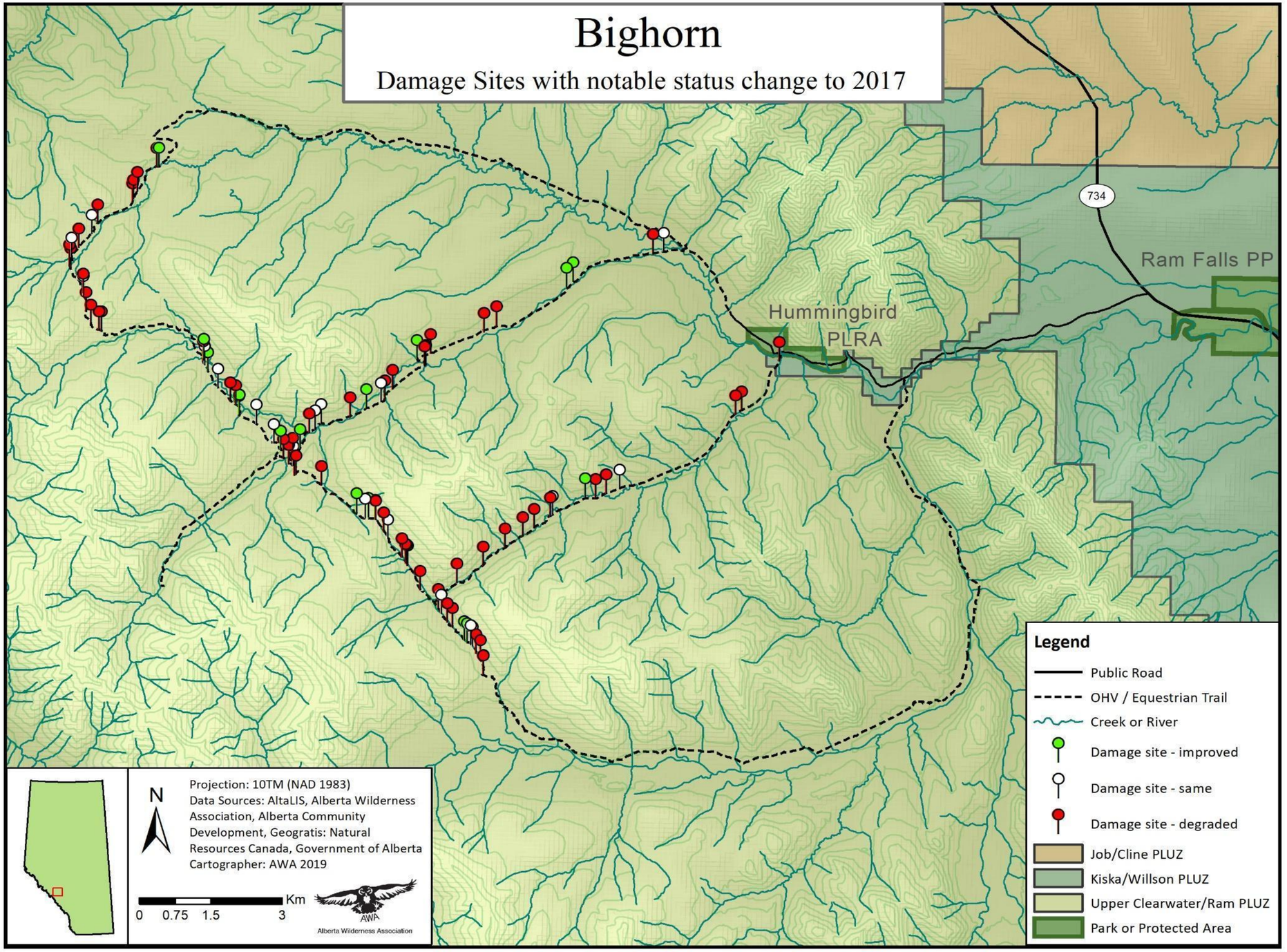
CAN damage site
Taken 2017-07-24
Severity: 5
L: 72m, W: 3m, D: 55cm

DAMAGE SITES AND EROSION EVENTS OVER TIME

Trail	Length (km)	Damage sites per km		Total length of damage sites (m)		Percent of trail damaged	
		2003-2005	2016	2003-2005	2016	2003-2005	2016
CAN	9.68	2.17	11.36	2,983	9,648	31%	100%
HUM	13.15	1.06	9.35	1,684	6,743	13%	51%
BTS	5.12	4.69	4.10	1,188	1,468	23%	29%
BTN	11.04	1.54	4.17	826	5,333	7%	48%

Trail	Length (km)	Erosion events per km		Percent of damage sites with an erosion event	
		2003-2005	2016	2003-2005	2016
CAN	9.68	0.93	7.44	43%	43%
HUM	13.15	0.91	8.06	86%	45%
BTS	5.12	3.13	3.32	67%	22%
BTN	11.04	1.18	3.53	76%	45%

Among all trail segments surveyed, the total length of damaged trail and the number of erosion events went up significantly between the initial 2003-2005 survey, and the final survey years


Bighorn
Damage Sites with notable status change to 2017
734
Ram Falls PP
Hummingbird
PLRA
Legend
Public Road
OHV / Equestrian Trail
Creek or River
Damage site - improved
Damage site - same
Damage site - degraded
Job/Cline PLUZ
Kiska/Willson PLUZ
Upper Clearwater/Ram PLUZ
Park or Protected Area
N
Projection: 10TM (NAD 1983)
Data Sources: AltaLIS, Alberta Wilderness Association, Alberta Community Development, Geogratis: Natural Resources Canada, Government of Alberta
Cartographer: AWA 2019
0 0.75 1.5 3 Km
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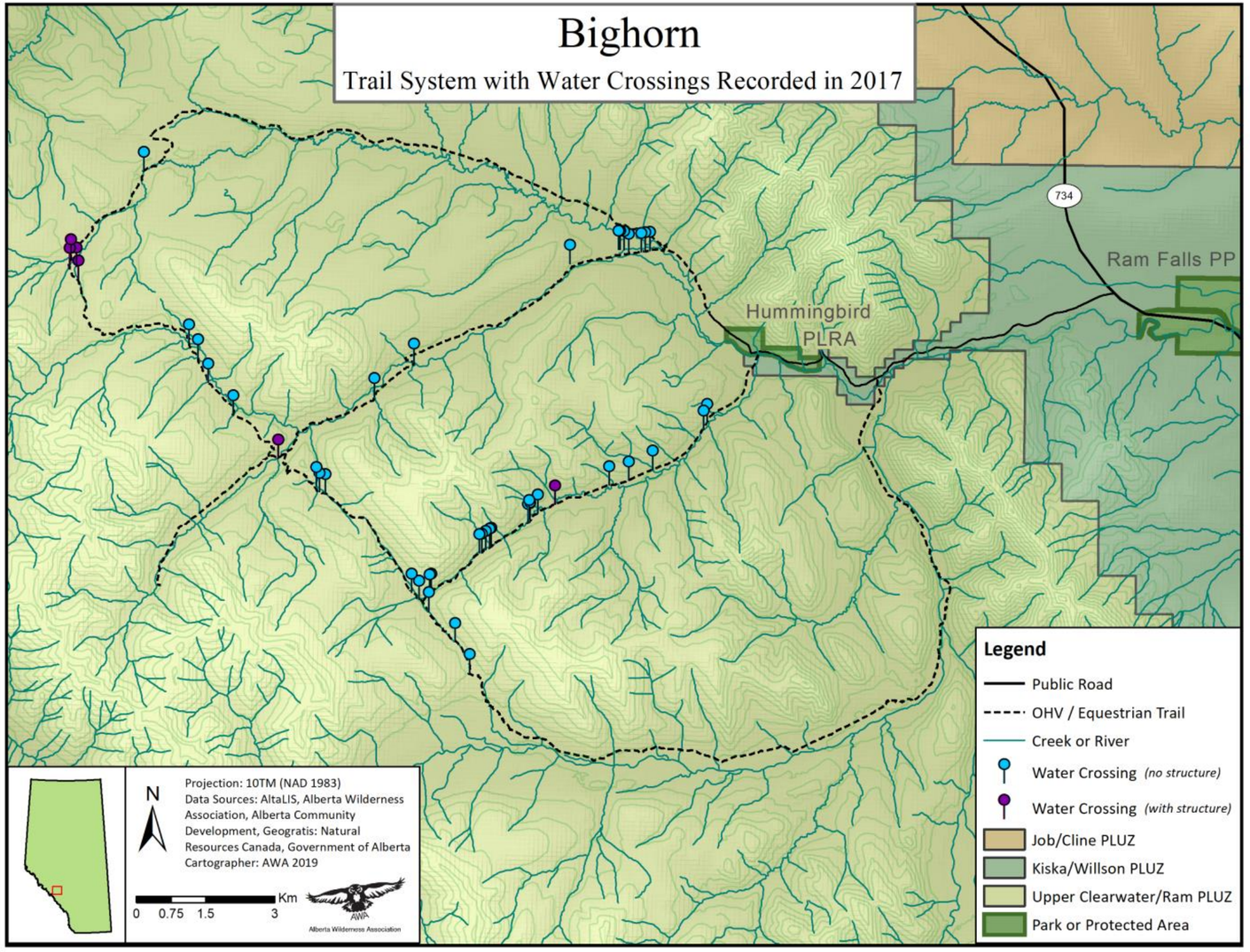
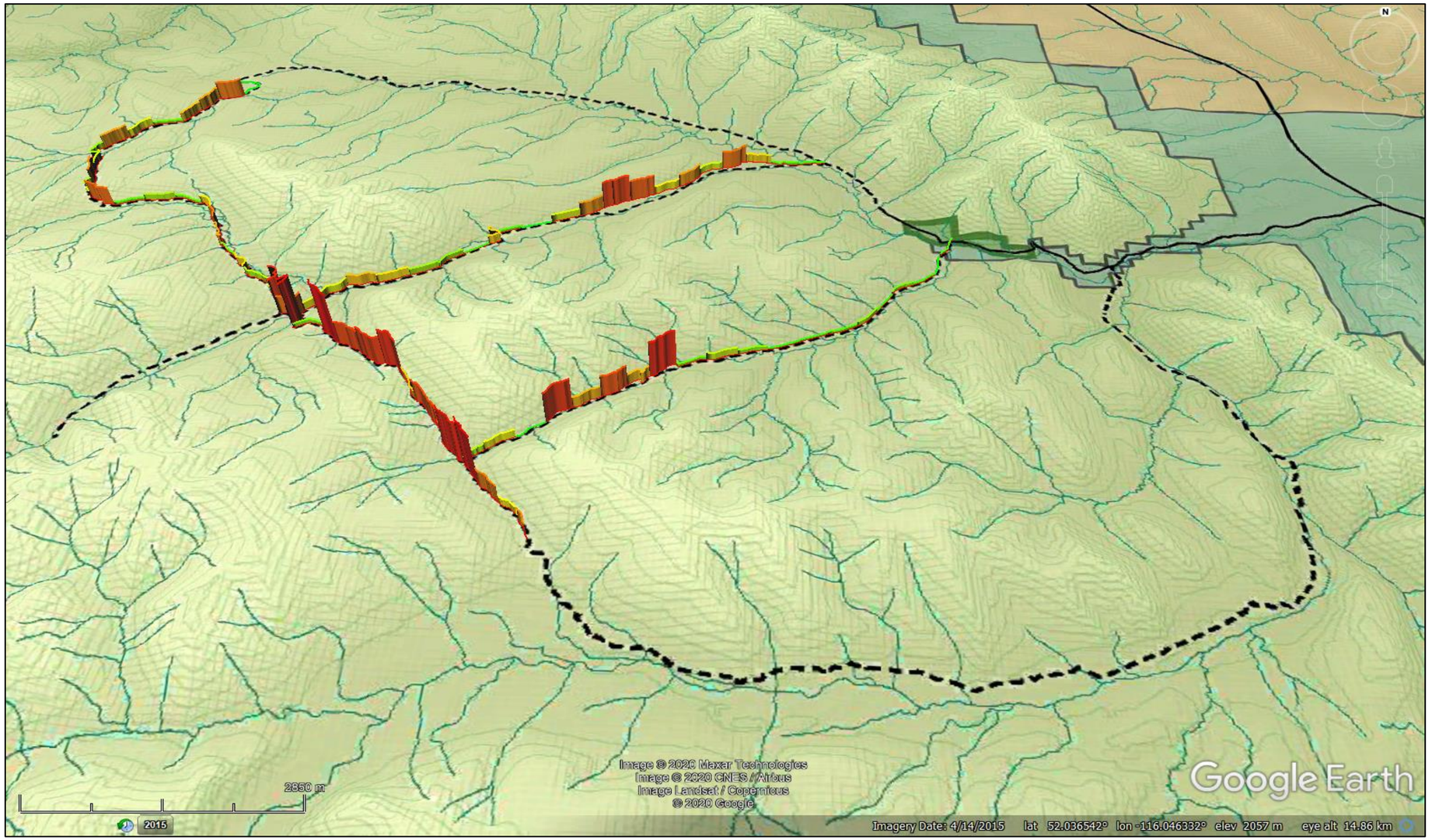
WATER CROSSINGS

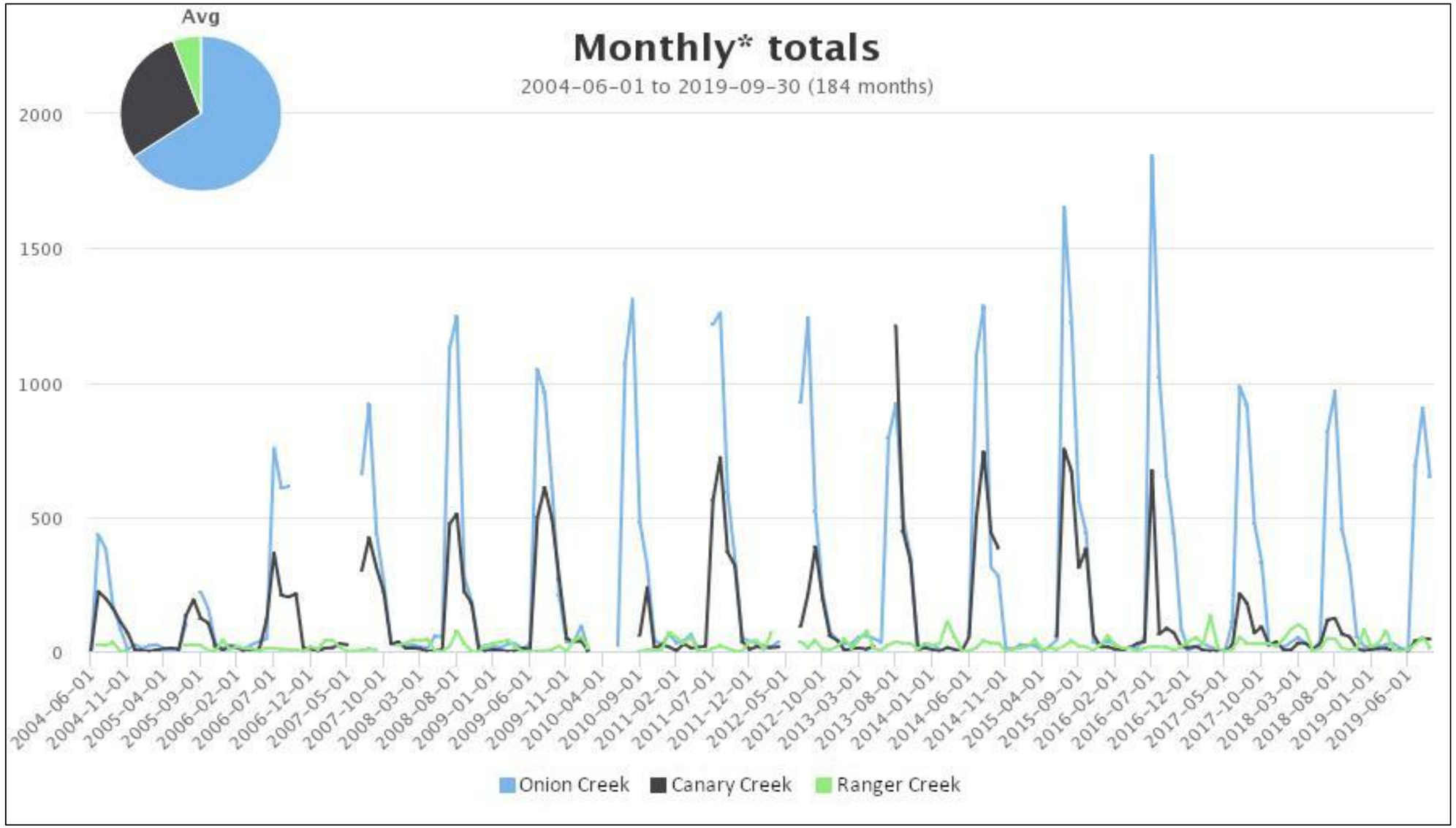
The Hummingbird trail system contains 46 creek crossings, with an average of 1.13 crossings per kilometre of trail. Most of the watercrossings (40/46) encountered contained no bridge structure, requiring OHVs to directly ford the waterbody.



EROSION DEPTHS IN 2016

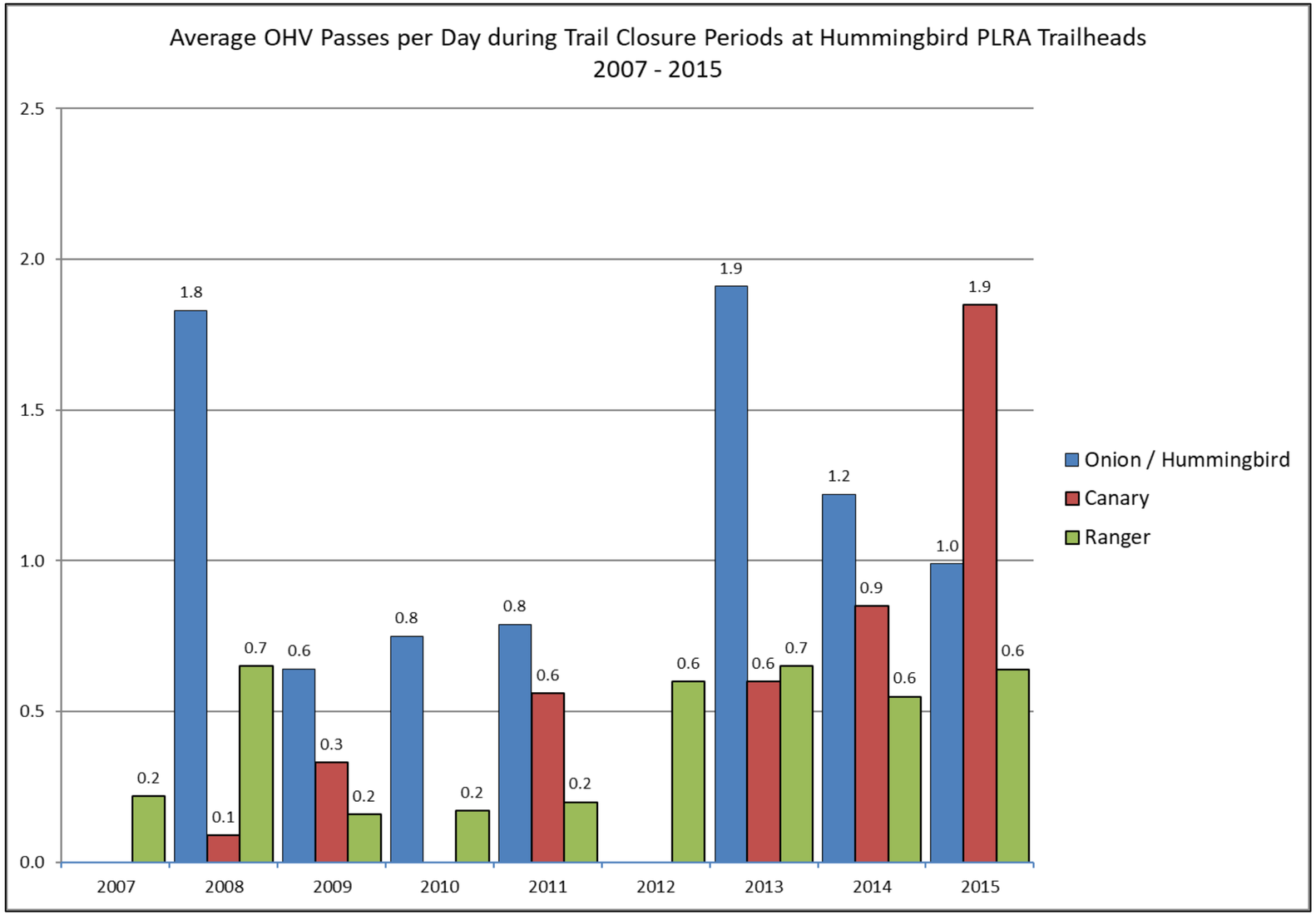


TRAFFIC COUNTS



TRAIL USE DURING CLOSURES

Illegal use of the trail network (defined as vehicle passes during closure periods) continues and is significant. Trail closures need to be accompanied by active enforcement.



HUMMINGBIRD TRAIL SEPTEMBER 2023

TAKEAWAYS

- Steep slopes, wet soils, and frequent water crossings create a sustainability challenge for OHV trails in the bighorn backcountry.
- AWA observed a significant increase in trail damage over the period of monitoring.
- The Bighorn Backcountry is zoned as ‘Prime Protection’ in the Eastern Slopes Policy, and is an important headwaters ecosystem.

LOOKING AHEAD

- Continue informal monitoring on the Hummingbird trail network.
- Looking for sustainable management of cumulative effects of recreation, industrial development etc.

AWA