Appendix E

Oregon Deer and Elk Crossing Priority Project (ODECPP) ODOT Highways of Analysis Interest (OHAI) Priority Wildlife Connectivity Area (PWCA) Hexagon Analysis

The Oregon Connectivity Assessment and Mapping Project identified a total of 405,537 Priority Wildlife Connectivity Area (PWCA) hexagons in its final statewide analysis (OCAMP 2023). These hexagons represent the top 1% of priority wildlife habitat across Oregon, as well as the least-cost pathways that define optimal corridors connecting these habitats (OCAMP 2023).

OCAMP classifies PWCAs into three distinct types: Connectors, Regions, and Steppingstones (Table A.E.1) Each hexagon is also assigned one or more conservation action recommendations, Protect, Restore, Transportation Mitigation, and Enhance/Maintain, based on the habitat value of the landscape at a given hexagon (Table A.E. 2).Of the total PWCAs hexagons identified:

- 137,577 are classified as Connectors,
- 267,145 as Regions, and
- 815 as Steppingstones (OCAMP 2023).

Table A.E. 1: Descriptions of the three distinct Priority Wildlife Connectivity Area (PWCA) types as described by the Oregon Connectivity Assessment and Mapping Project (OCAMP). Types of PWCAs include Connectors, Regions, and Steppingstones (OCAMP 2023).

Priority Wildlife Connectivity Areas – Classifications	
Type	**Description**
Region	Vast contiguous habitat areas of high habitat value for facilitating species movement.
Connector	Ideal habitat for movement corridors between regions based on the quality of the surrounding landscape in both disturbed and undisturbed areas.
Steppingstone	Isolated PWCA hexagons representing intact habitat within highly disturbed anthropogenic landscapes.

Table A.E. 2: Priority Wildlife Connectivity Area (PWCA) Conservation Action Recommendations termed by the Oregon Connectivity Assessment and Mapping Project (OCAMP). In addition to PWCA types, each hexagon received a conservation action recommendation which delineated measures for facilitating wildlife movement within a given hexagon. Conservation Action Recommendations include Protect, Restore, Transportation Mitigation, and Enhance/Maintain (OCAMP 2023).

Priority Wildlife Connectivity Areas – Conservation Action Recommendations	
Type	**Description**
Protect	Undeveloped habitat that would benefit from preservation.
Restore	Degraded habitat with movement value necessitating improvement measures.
Transportation Mitigation	Areas of habitat that intersect highway networks with the greatest risk of habitat fragmentation due to roadway characteristics.
Enhance/Maintain	Habitat areas at low risk of degradation and loss but would benefit from limiting alteration.

The Oregon Deer and Elk Crossing Prioritization Project (ODECPP) analyzed seven of Oregon's highways: Pacific, The Dalles-California, Old Oregon Trail, Central Oregon, Oregon Coast, Wallowa Lake, and Santiam, collectively referred to as the ODOT Highways of Analysis Interest (OHAI). These corridors represent Oregon's primary transportation routes with elevated frequencies of deer and elk–vehicle collisions (DEVCs) (ODECPP 2025).

An analysis conducted in ArcGIS Pro 3.4.3 (ESRI 2024) revealed that 1,572 of the 405,537 PWCA hexagons overlap with the seven OHAI. Among these overlapping hexagons, 44.9% (n = 706) are classified as Connectors, 54.1% (n = 851) as Regions, and 0.95% (n = 15) as Steppingstones (ODECPP 2025).

The primary objective of the ODECPP was to identify and prioritize locations for ungulate passage projects using a suite of spatial and ecological factors derived from authoritative datasets provided by state agencies such as ODOT and the Oregon Department of Fish and Wildlife (ODFW) (ODECPP 2025). All analyses were conducted at a 0.10-mile scale, with Top 1% Priority Mileposts (TPMs) aggregated at both 1-mile and 5-mile scales. The 5-mile scale Highway Priority Zones (HPZs) were primarily used for visualization, while the 1-mile scale, referred to as Priority Highway Segments (PHSs), was used for prioritization. PHSs were ranked from high to low priority based on the number of TPMs and the maximum TPM value within each segment (ODECPP 2025).

A total of 81 Priority Highway Segments (PHSs) were identified in the ODECPP analysis. Of these, 76.5% (n = 62) overlapped with at least one OHAI-intersecting PWCA hexagon. Across all OHAI corridors, the mean number of overlapping PWCA hexagons per PHS was 5.11 (SD ± 5.6). Priority Highway Segment CO f, located on the Central Oregon Highway, had the highest overlap with 35 PWCA hexagons.

In general, Priority Highway Segments (PHSs) were located relatively close to Region and Connector PWCA hexagons, with mean distances of 1.7 km (SD ± 3.4) and 0.5 km (SD ± 1.1), respectively. The maximum distance from a Region PWCA hexagon was 14.9 km (TDC J), and 5.2 km for Connectors (OC k).

In contrast, PHSs were, on average, located ≥ 70 km (SD ± 75.1) from Steppingstone PWCA hexagons, with a maximum distance of 228 km.

At least one Region or Connector PWCA hexagon intersected with 50 and 61 PHSs, respectively. A total of 37 PHSs intersected with both Region and Connector PWCA hexagons. No single PHS overlapped with all three PWCA types. In parallel, of the 1,572 PWCA hexagons associated with the OHAI, 402 (25.6%) intersected at least one PHS. A total of 414 PWCA hexagons were counted using the Summarize Within tool in ArcGIS Pro, as some hexagons intersected more than one PHS.

Among the 402 intersecting PWCA hexagons, 188 (46.8%) were classified as Connectors, 213 (52.9%) as Regions, and 1 (0.25%) as a Steppingstone (Figure A.E.1).

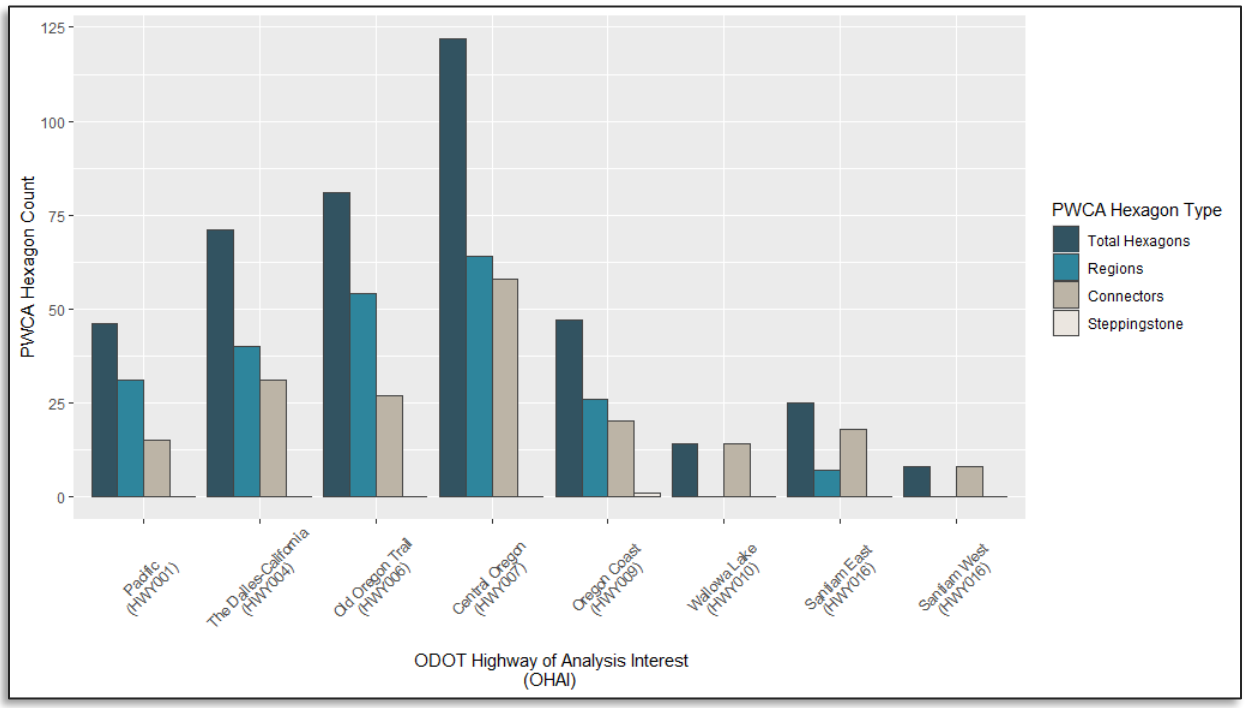


Figure A.E. 1: Priority Wildlife Connectivity Area (PWCA) Hexagon Classification frequency as a function of the ODOT Highways of Analysis Interest (OHAI).

The Central Oregon Highway had the highest number of PWCA hexagon intersections with PHSs, totaling 122. It also ranked second in terms of PWCA density relative to the number of PHSs, with an average of 10.2 PWCA hexagons per segment. The Santiam East corridor had the highest relative density, with 12.5 PWCA hexagons per PHS.

The conservation action recommendations associated with the intersecting PWCA hexagons varied in frequency. The majority were classified as Protect (n = 167), followed by Transportation Mitigation (n = 120) and Restore (n = 103). The least frequent recommendation was Enhance/Maintain (n = 24) (Table A.E.3).

Summary of Key Findings

- Of the 1,572 PWCA hexagons overlapping the ODOT Highways of Analysis Interest (OHAI), 25% (n = 402) intersected a Priority Highway Segment (PHS).
- 62 (76.5%) of the 81 PHSs overlapped with at least one PWCA hexagon.
- The majority (~53%) of overlapping PWCA hexagons were classified as Regions.
- 37 PHSs overlapped with both a Region and Connector PWCA hexagon.
- The most common Conservation Action Recommendation among overlapping hexagons was Protect, followed by Transportation Mitigation, Restore, and Enhance/Maintain.
- Central Oregon Highway had the highest number of PWCA hexagons intersecting PHSs.

Table A.E. 3. Priority Wildlife Connectivity Area (PWCA) Conservation Action Recommendation(s) per Priority Highway Segment (PHS) across all ODOT Highways of Analysis Interest (OHAI).

PWCA Conservation Recommendations per PHS						
Highway Name	PHS Name	Enhance/ Maintain	Protect	Restore	Transportation Mitigation	Grand Total
Pacific	P a	0	0	0	2	2
	P b	0	0	0	0	0
	P c	0	1	2	0	3
	P d	0	0	0	0	0
	P e	1	2	1	0	4
	P f	0	0	0	0	0
	P g	0	0	0	0	0
	P h	0	0	0	0	0
	P i	1	2	6	0	9
	P j	0	1	2	0	3
	P k	0	0	6	0	6
	P l	0	0	0	4	4
	P m	0	0	0	0	0
	P n	0	1	2	0	3
	P o	0	1	5	0	6
	P p	2	0	1	3	6
The Dalles-California	TDC a	0	4	3	0	7
	TDC b	0	0	0	0	0
	TDC c	0	0	0	3	0
	TDC d	0	0	0	0	0
	TDC e	0	0	0	0	0
	TDC f	1	3	4	3	11
	TDC g	0	7	0	7	14
	TDC h	0	0	0	3	3
	TDC i	0	0	4	3	7
	TDC j	0	0	0	0	0
	TDC k	0	0	0	3	3
	TDC l	0	0	0	0	0
	TDC m	0	0	0	4	4
	TDC n	2	1	0	0	3
	TDC o	0	5	0	0	5
	TDC p	1	0	1	0	2
	TDC q	0	0	2	1	3
	TDC r	0	0	6	0	6
Old Oregon Trail	OOT a	0	0	0	0	0
	OOT b	0	0	3	0	0
	OOT c	0	1	1	0	2
	OOT d	0	4	0	0	4
	OOT e	1	5	1	0	7
	OOT f	0	8	0	0	8

Highway Name	PHS Name	Enhance/ Maintain	Protect	Restore	Transportation Mitigation	Grand Total
Old Oregon Trail	OOT g	0	5	0	0	5
	OOT h	0	8	0	5	13
	OOT i	0	0	1	4	5
	OOT j	0	1	6	0	7
	OOT k	1	5	2	0	8
	OOT l	0	0	0	0	0
	OOT m	0	1	4	0	5
	OOT n	0	13	1	0	14
	OOT o	0	0	0	0	0
Central Oregon	CO a	0	0	0	3	3
	CO b	0	2	0	5	7
	CO c	0	0	0	3	3
	CO d	0	0	0	2	2
	CO e	1	6	2	10	19
	CO f	1	25	1	8	35
	CO g	0	13	1	0	14
	CO h	0	0	6	0	6
	CO i	0	2	1	12	15
	CO j	0	0	0	7	7
	CO k	0	0	2	4	6
	CO l	0	0	0	5	5
Oregon Coast	OC a	0	0	0	3	3
	OC b	0	1	2	0	3
	OC c	0	0	7	0	7
	OC d	0	3	1	0	4
	OC e	0	0	1	1	2
	OC f	0	0	0	0	0
	OC g	1	0	0	1	2
	OC h	3	1	3	0	7
	OC i	0	0	0	0	0
	OC j	0	6	0	0	6
	OC k	0	1	0	0	1
	OC l	0	5	0	7	12
Wallowa Lake	WL a	0	0	0	0	0
	WL b	0	6	8	0	14
	WL c	0	0	0	0	0
	WL d	0	0	0	0	0
Santiam East	SE a	5	9	0	4	18
	SE b	3	2	2	0	7
Santiam West	SW a	0	0	1	0	1
	SW b	0	6	1	0	7
Grand Total		24	167	103	120	414

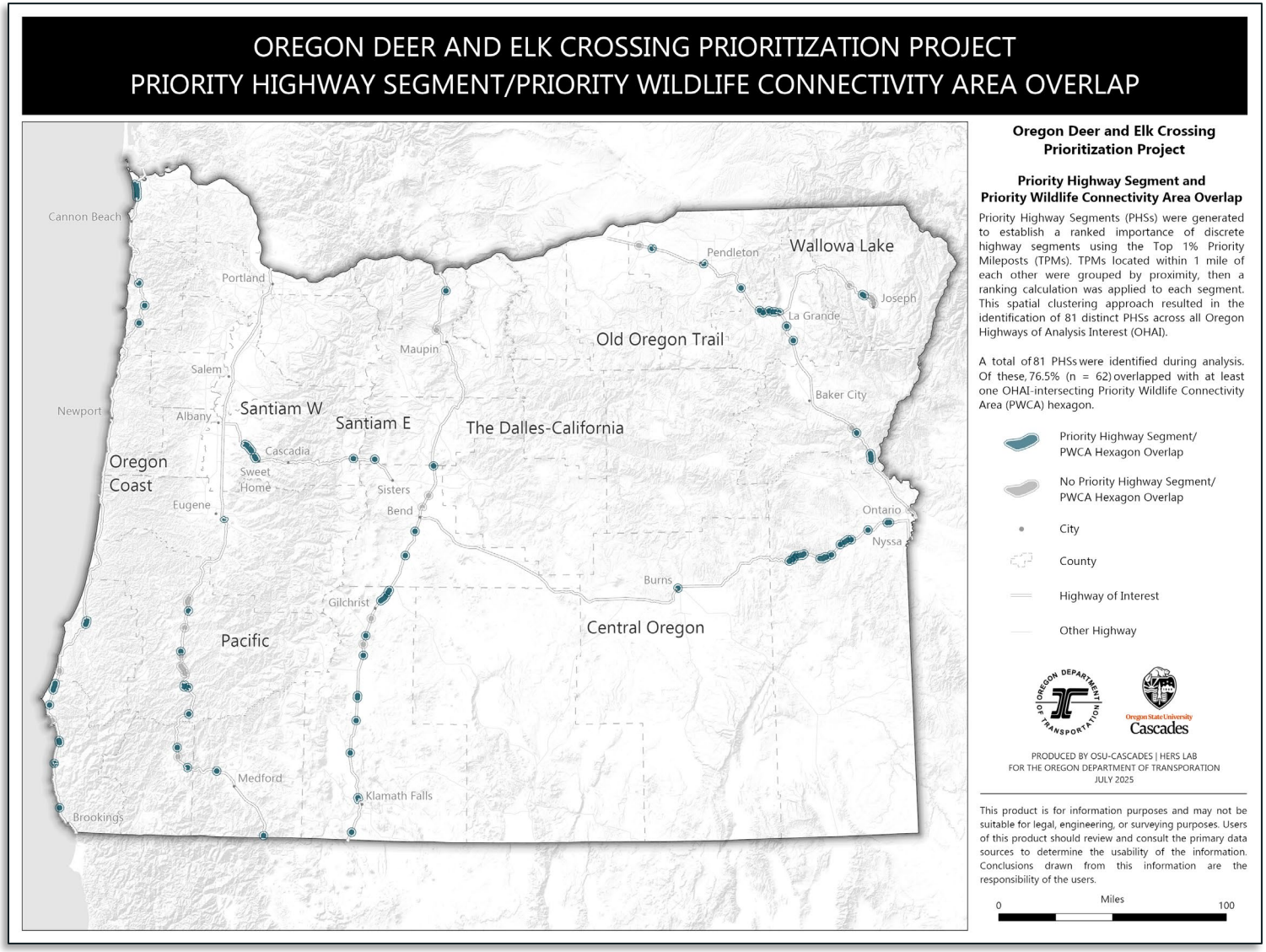


Figure A.E. 2. Areas of overlap between Oregon Deer and Elk Crossing Prioritization Project (ODECPP) Priority Highway Segments (PHSs) and Oregon Connectivity Assessment and Mapping Project (OCAMP) Priority Wildlife Connectivity Area (PWCA) hexagons within Oregon Department of Transportation (ODOT) Highways of Analysis Interest (OHAI).

References

Oregon Connectivity Assessment and Mapping Project. 2023. Executive Summary. Oregon Department of Fish and Wildlife. Salem, OR.

ESRI. 2024. ArcGIS Pro v. 3.4.3. ESRI, Redlands, CA.