



BRITISH
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Ministry of
Transportation

WARS 1983-2002

Wildlife Accident
Reporting and Mitigation
in British Columbia

Special Annual Report

Ministry of Transportation

Engineering Branch

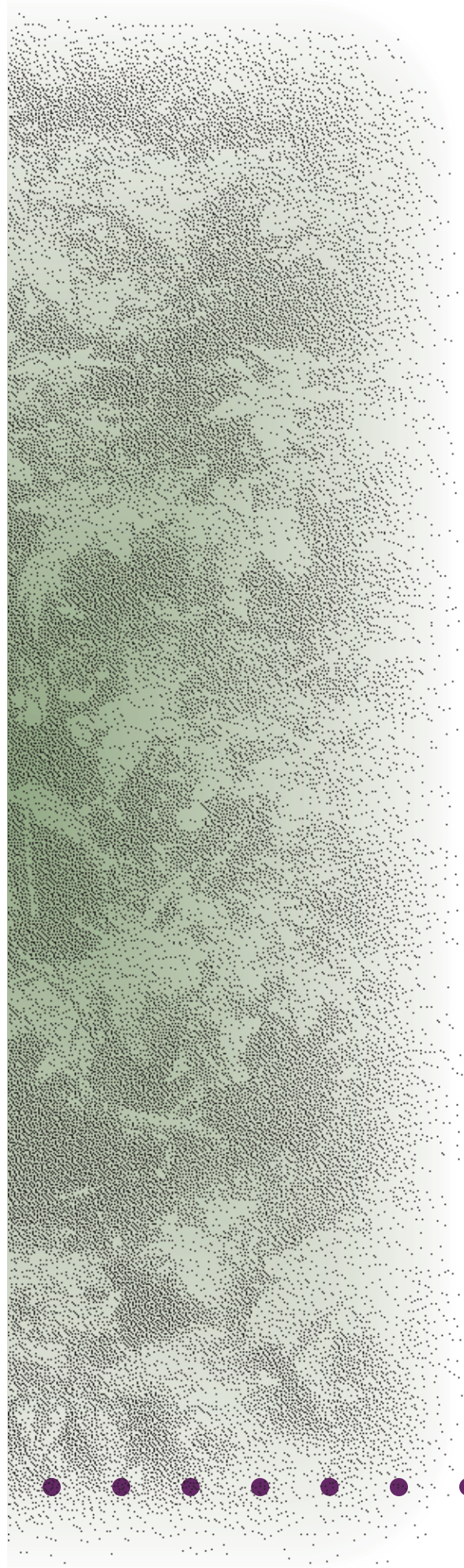
Environmental Management Section

940 Blanshard Street

PO BOX 9850 STN PROV GOVT

Victoria, British Columbia

Canada V8W 9T5



Library and Archives Canadian Cataloguing in Publication Data
Sielecki, Leonard E.

WARS 1983 – 2002: wildlife accident reporting and
mitigation in British Columbia: special annual report.

ISSN 0 - 7726 - 5222 - 8

1. Wildlife Accident Reporting System 2. Traffic safety
and wildlife – British Columbia. 3. Traffic accident
investigation – British Columbia. 4. Roadkills – Economic
aspects – British Columbia. I. British Columbia. Ministry
of Transportation. Environmental Management Section. II.
Title: Wildlife Accident Reporting System 1983 – 2002

HE5620.W54S53 2004 363.12'51'09711 C2004-960119-9

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WARS 1983–2002 Wildlife Accident Reporting and Mitigation in British Columbia Special Annual Report

Author: Leonard E. Sielecki, M.Sc., MCIP, R.P.Bio

Date Published: July 2004

Prepared for: Environmental Management Section
Engineering Branch
British Columbia Ministry of Transportation
Victoria, B.C. Canada

Contact Person: WARS Manager
Environmental Management Section
Engineering Branch
B.C. Ministry of Transportation
4B – 940 Blanshard Street
PO Box 9850 STN PROV GOVT
Victoria, B.C. Canada V8W 9T5

Phone: (250) 387-6931

Abstract: The Wildlife Accident Reporting System (WARS) is designed to collect and store information on wildlife killed on highways in British Columbia. The WARS database contains over 78,000 records collected since 1978. Wildlife accident information is used by the Ministry to:

- 1) Identify accident-prone locations and accident trends;
- 2) direct cost-effective mitigation efforts;
- 3) evaluate the effectiveness of mitigation techniques;
- 4) provide data for highway planning purposes;
- 5) model and forecast accidents;
- 6) analyze traffic and climatic relationships for species-specific accident trends;
- 7) develop species-specific accident risk profiles for highway corridors; and
- 8) establish policies and strategies for accident issues and mitigation initiatives.

The success of the WARS system in British Columbia has made it a model for other agencies seeking to monitor wildlife-related motor vehicle accidents.

Comments: In 2002, Ministry Maintenance Contractors reported finding 5,032 dead wild animals on British Columbia highways. Approximately 80% of the animals reported killed were deer. The number of wildlife accidents reported to the Ministry decreased by 2.7% from 2001.

Keywords: WARS, wildlife, accident, reporting, system, road, kills, statistics, exclusion, fencing, British Columbia, risk, cost, deer, moose, elk, bear, sheep, mitigation, overpass, underpass, road ecology.



EXECUTIVE SUMMARY

The British Columbia Ministry of Transportation (BCMoT) administers the Wildlife Accident Reporting System (WARS). The WARS system is designed to analyze wildlife accident data collected by BCMoT Maintenance Contractors on numbered highways in British Columbia.

Since 1978, over 78,000 wildlife accidents have been reported on provincial highways. More than 90% of the accidents involved deer, moose and elk. Between 1995 and 2000, 13 people were reported killed in wildlife-related motor vehicle accidents in British Columbia. After weather, the Insurance Corporation of British Columbia (ICBC) rates wildlife as the next highest environmental contributing factor for police-attended accidents. Between 1997 and 2002, ICBC spent over \$118 million on wildlife-related motor vehicle accident claims.

In 2002, over 5,000 wildlife-related accidents were reported in British Columbia (table below). Between 2001 and 2002, the number of wildlife-related accidents reported decreased by 2.7%.

Wildlife Accidents by BCMoT Region (Year 2002)

	Region 1	Region 2	Region 3	Total
Wildlife Accidents	1,221	2,871	939	5,031

In 2002, it is estimated wildlife accidents cost the Province over \$20 million in motor vehicle accident claims; \$580,000 in highway accident clean-up costs; \$320,000 in lost provincial hunting license revenues; and \$30 million in lost value to residents and non-residents who view or hunt wildlife.

BCMoT is committed to protect the safety of the motoring public; stem the rising societal cost of human fatalities and injuries, motor vehicle damage, and highway maintenance; and reduce the loss of wildlife on provincial highways. Consequently, BCMoT uses the WARS system to:

- 1) identify accident-prone locations and accident trends;
- 2) direct cost-effective mitigation efforts;
- 3) evaluate the effectiveness of mitigation techniques;
- 4) provide data for highway planning purposes;
- 5) model and forecast accidents;
- 6) analyze traffic and climatic relationships for species-specific accident trends;
- 7) develop species-specific accident risk profiles for highway corridors; and
- 8) establish policies and strategies for accident issues and mitigation initiatives.

The WARS system is becoming an increasingly valuable information resource for BCMoT, and other government agencies, consultants, researchers, wildlife associations, special interest groups and members of the general public. The Ministry of Water, Land and Air Protection uses WARS data to assess provincial wildlife population trends. ICBC uses WARS data for identifying highway locations where joint BCMoT/ICBC initiatives, such as exclusion fencing, warning reflectors, and infrared camera detection systems, can be targeted to reduce wildlife-related motor vehicle collisions. The success of the WARS system in British Columbia has made it a model for other agencies seeking to monitor wildlife-related motor vehicle accidents.



Acknowledgements

In the year 2002, the consistent daily collection of wildlife accident information and submission of the monthly reports, critical for the operation of the WARS system and production of this report, was done by the staff of the following British Columbia Ministry of Transportation Private Maintenance Contractors:

Argo Road Maintenance (South Okanagan) Inc.
Argo Road Maintenance (Thompson) Inc.
Argo Road Maintenance Inc.
Capilano Highways Services Co. Ltd.
Caribou Road Services Ltd.
Emcon Services Inc.
Emil Anderson Maintenance Co. Ltd
HMC Services Inc.
Interior Roads Ltd.
JJM Maintenance Ltd.
Lakes District Maintenance Ltd.
Mainroad Contracting Ltd.
Mainroad East Kootenay Contracting Ltd.
Mainroad Mid-Island Contracting Ltd.
Mainroad North Island Contracting Ltd.
Nechako Northcoast Construction (Burns Lake) of 995 Ventures Ltd.
Nechako Northcoast Construction (Terrace) of 141187 Ventures Ltd.
Nechako Northcoast Construction Ltd.
O'Brien Road and Bridge Maintenance Ltd.
Peace Country Maintenance Ltd.
VSA Highway Maintenance Ltd.
Yellowhead Road & Bridge (Fort George) Ltd.
Yellowhead Road & Bridge (North Peace) Ltd.
Yellowhead Road & Bridge (Vanderhoof) Ltd.

The timely assembly and proofing of the WARS monthly reports, vital for keeping the WARS system current and complete, was done by Ministry's District Staff:

Paul Bebington, District Operations Assistant, Lower Mainland District
Sharon Beck, District Clerk, Cariboo District
Cecil Bianco, District Operations Assistant, Okanagan Shuswap District
Hugh Eberle, District Operations Technician, West Kootenay District
Larry Griffith, Operations Technician, Vancouver Island District
Bob Hickman, Operations Technician, Vancouver Island District
Karen Jeff, District Clerk, Cariboo District
Martin Madelung, Operations Technician, Vancouver Island District
Percy Parent, Area Manager Assistant, Thompson Nicola District
Sue Pauwels, A/Operations Technician, Vancouver Island District
Deveta Roberts, Assistant Area Manager, Selkirk Area – Revelstoke, Rocky Mountain District
Grant Watson, District Operations Technician, Skeena District

Supervision and Direction for the report was provided by:

Mike Kent, Chief Environmental Officer, Environmental Management Section,
Engineering Branch, British Columbia Ministry of Transportation.

Al Planiden, Manager, Roadside Development, Environmental Management Section,
Engineering Branch, British Columbia Ministry of Transportation.

This report was made possible with assistance provided by the following Government of British Columbia staff and contractors:

Gord Bonwick, Senior Avalanche Officer, Snow Avalanche Programs,
British Columbia Ministry of Transportation.

Kim Brunt, Wildlife Biologist, Environmental Stewardship Division, Ministry of Water,
Land and Air Protection

Laura Friis, Species Specialist – Small Mammals and Herpetofauna, Biodiversity Branch,
Ministry of Water, Land and Air Protection.

Lucille Green, RIMS Administrator, Construction Maintenance Branch,
British Columbia Ministry of Transportation.

Ian Hatter, Species Specialist – Ungulates, Biodiversity Branch,
Ministry of Water, Land and Air Protection.

Sharlie Huffman, Bridge Seismic Rehabilitation Standards Engineer
British Columbia Ministry of Transportation

Tammy Liddicoat, Park Information Officer, Planning and Community Relations,
Ministry of Water, Land & Air Protection.

Corrine Merx, Consultant, Environmental Management Section, Engineering Branch,
British Columbia Ministry of Transportation

Daryl Nolan, Manager, Environmental Services, Region 3,
British Columbia Ministry of Transportation

Ray Pengelly, Administrative Assistant, Engineering Branch,
British Columbia Ministry of Transportation

Brent Persello, Manager, Environmental Services, Region 2,
British Columbia Ministry of Transportation

Bev Propp, RISP Administrator, Finance and Administration Section, Engineering Branch,
British Columbia Ministry of Transportation.

Jonathan Robinson, Consultant, Information Systems Branch,
British Columbia Ministry of Transportation

Ed Sabadash, Consultant, Geometric Standards and Design Section, Engineering Branch,
British Columbia Ministry of Transportation.

Gord Smith, Graphics Technician, Engineering Branch,
British Columbia Ministry of Transportation.

Andrew Thornton, GIS Analyst, Business and Information Services Division,
British Columbia Ministry of Sustainable Resource Management.

Dana Squarebriggs, Imagebank Assistant, Image Bank, Tourism British Columbia

Mark Wong, Business Analyst, Information Systems Branch,
British Columbia Ministry of Transportation.

Wayne Yee, Consultant, Geometric Standards and Design Section, Engineering Branch,
British Columbia Ministry of Transportation.

Additional information was provided by the following Wildlife Consultants:

Bill Harper, Osiris Wildlife Consulting, Victoria, British Columbia
Trevor Kinley, Sylvan Consulting Ltd., Invermere, British Columbia
Nancy Newhouse, Sylvan Consulting Ltd., Invermere, British Columbia

The design, layout, and graphic production of this report was provided by:

Beverly van Druten-Blais, Graphic Designer, Bolten Studios, Victoria, British Columbia





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The illustration of this report was made possible with photographs provided by the following Government of British Columbia Ministries, Agencies and staff; and private individuals and organizations:

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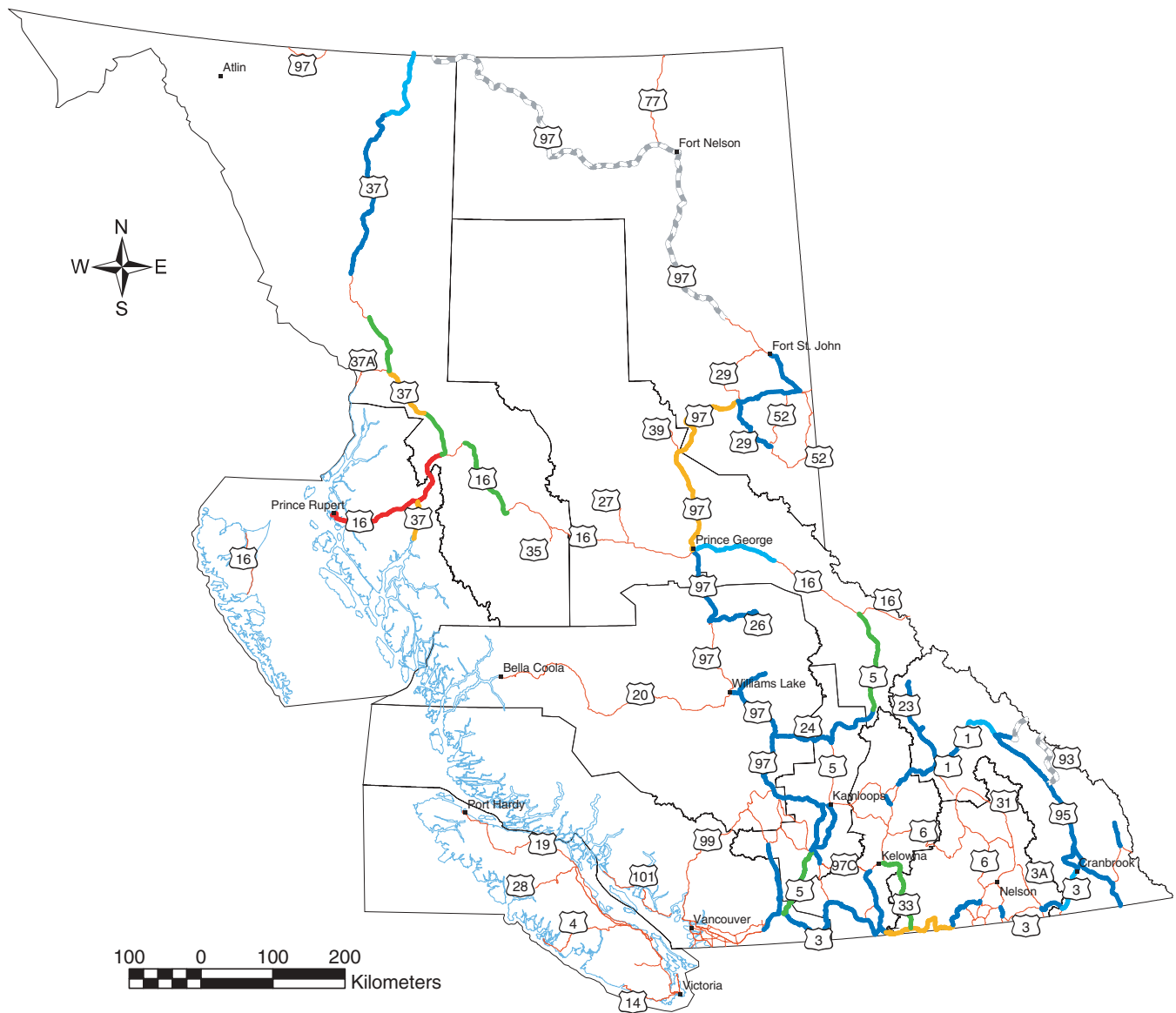




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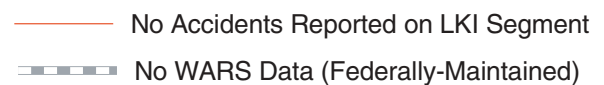




Map 5.27

Total Porcupine Accidents (1983 - 1992)

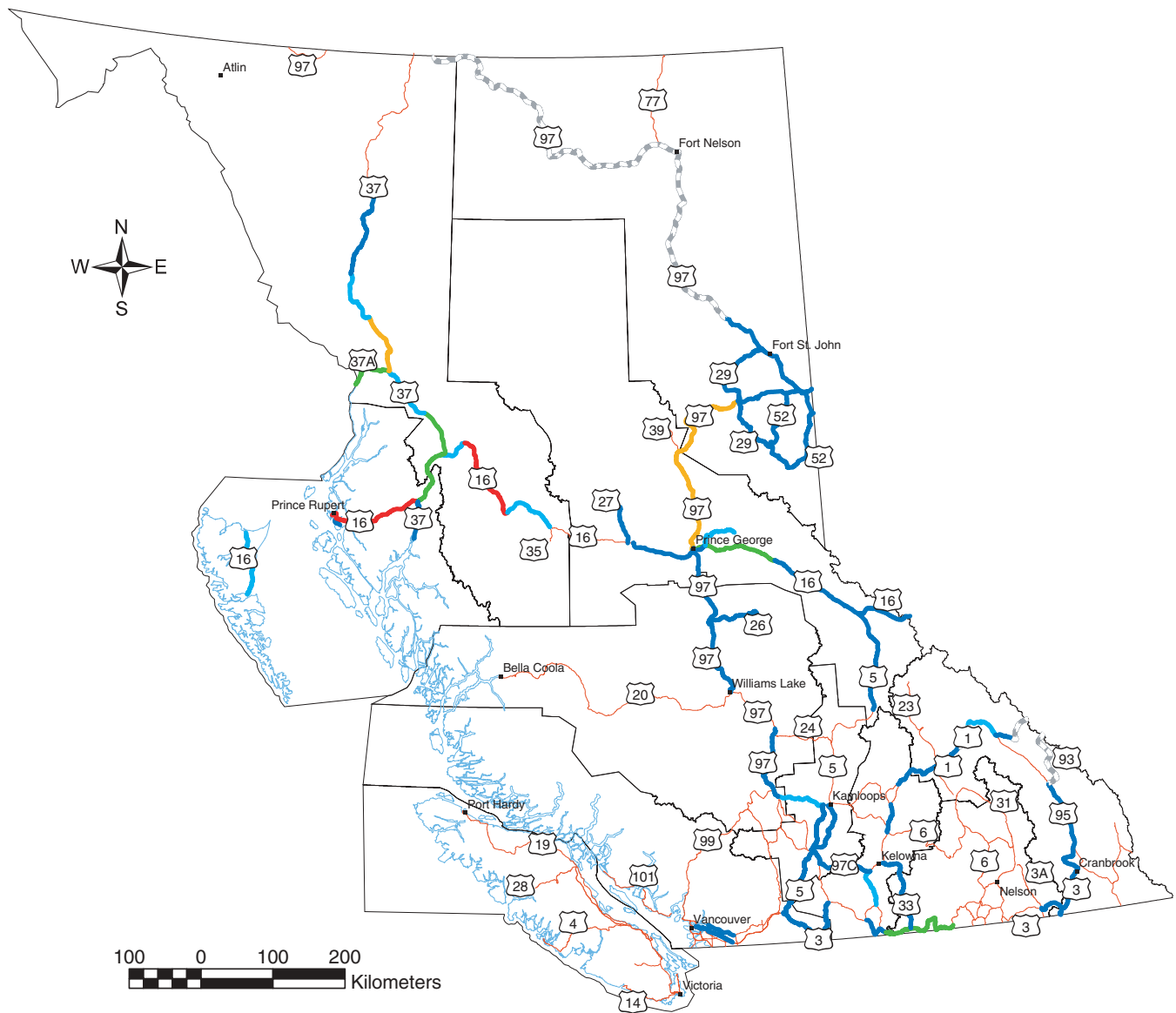
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Notes:

- (1) Reported Species not verified by wildlife specialist.
- (2) Discrepancies between the reported accident location and the normal range of the species may exist.

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British Columbia Ministry of Transportation,
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Map 5.28

Total Porcupine Accidents (1993 - 2002)

Legend

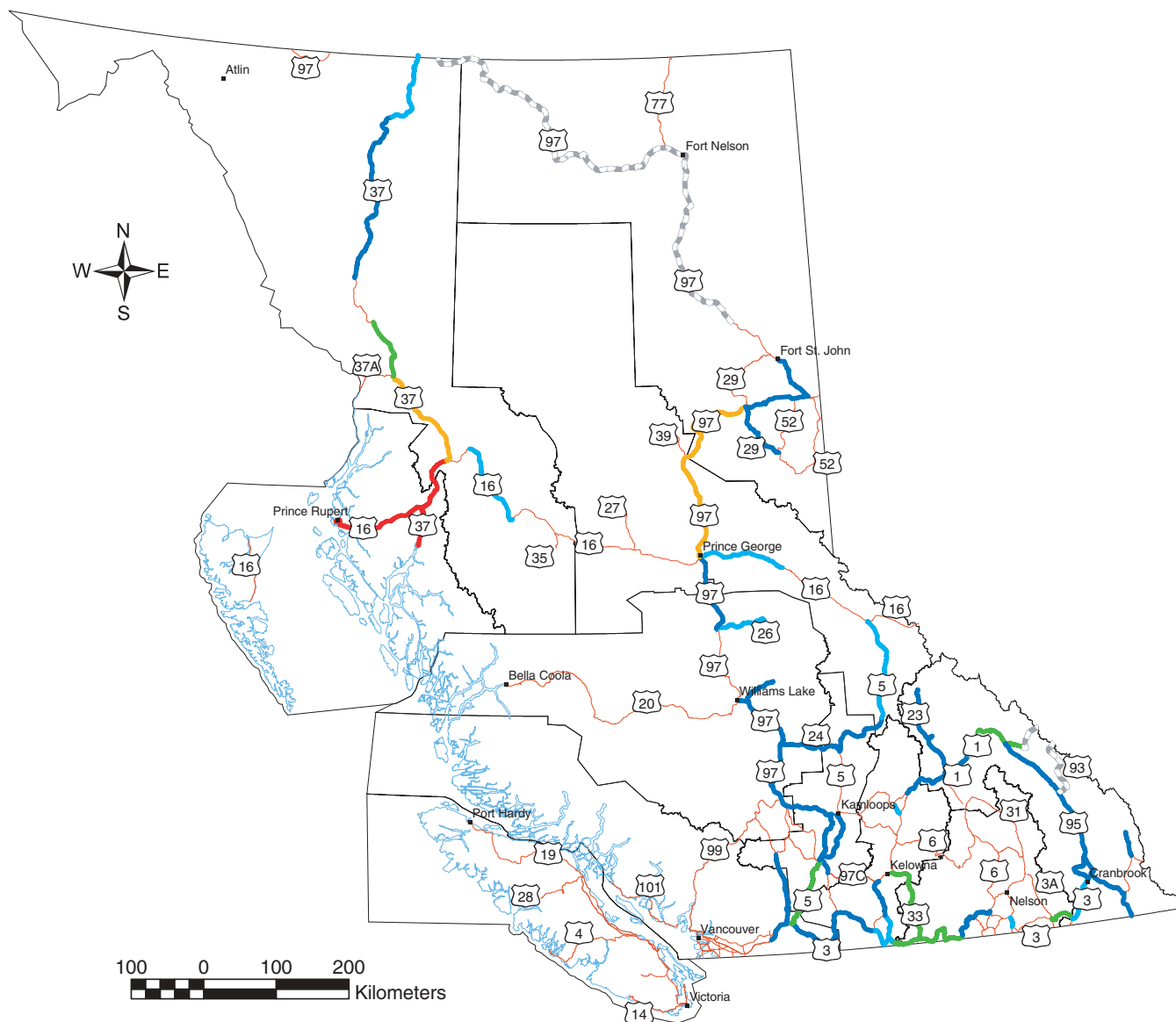


- No Accidents Reported on LKI Segment
- No WARS Data (Federally-Maintained)

Notes:

- (1) Reported Species not verified by wildlife specialist.
- (2) Discrepancies between the reported accident location and the normal range of the species may exist.

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Map 5.29

Porcupine Accidents
per Kilometre per Year
(1983 - 1992)

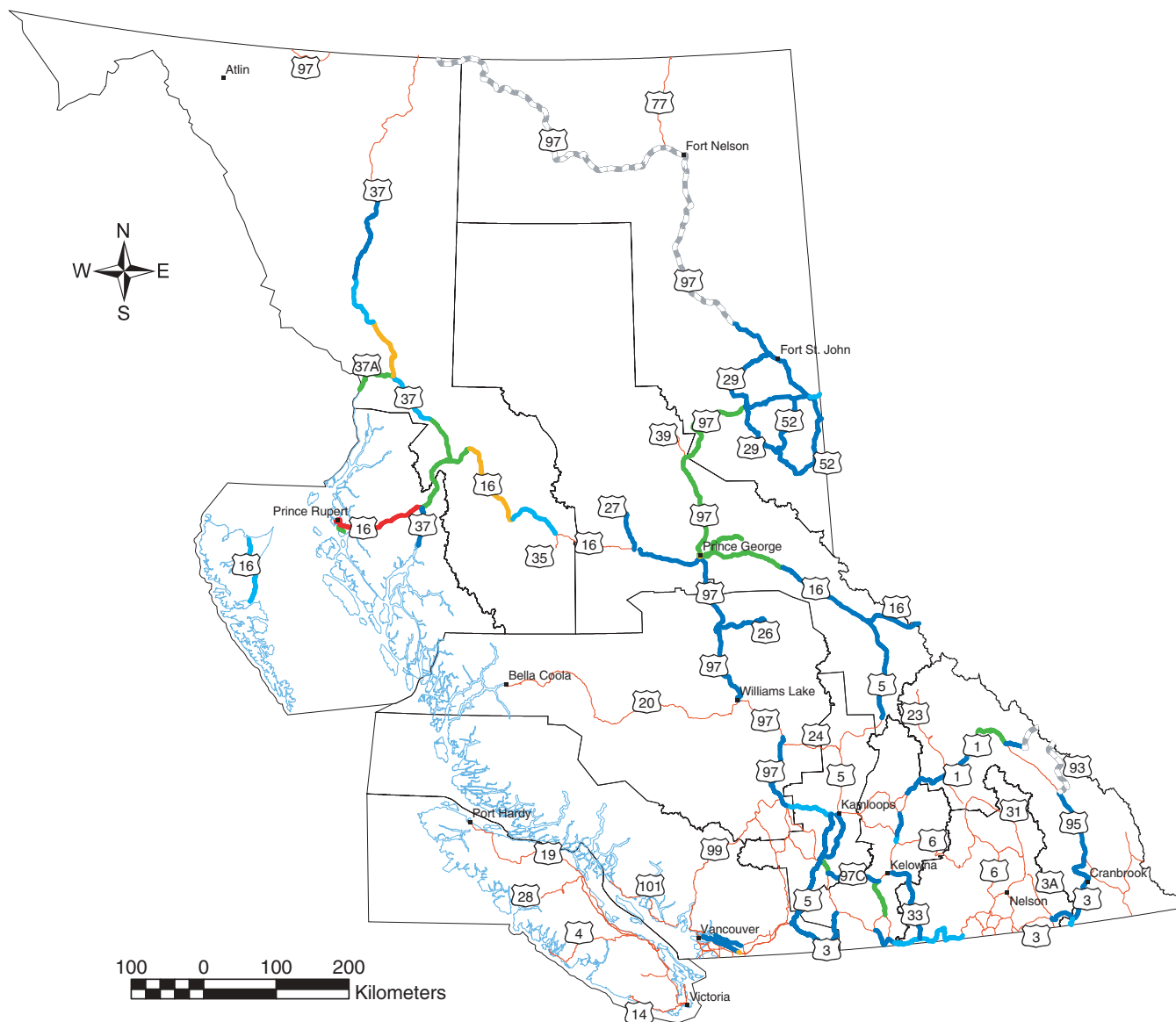
Legend

- 0.001 - 0.005
- 0.006 - 0.010
- 0.011 - 0.020
- 0.021 - 0.050
- 0.051 - 0.175
- No Accidents Reported on LKI Segment
- No WARS Data (Federally-Maintained)

Notes:

- (1) Reported Species not verified by wildlife specialist.
- (2) Discrepancies between the reported accident location and the normal range of the species may exist.

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Map 5.30

Porcupine Accidents
per Kilometre per Year
(1993 - 2002)

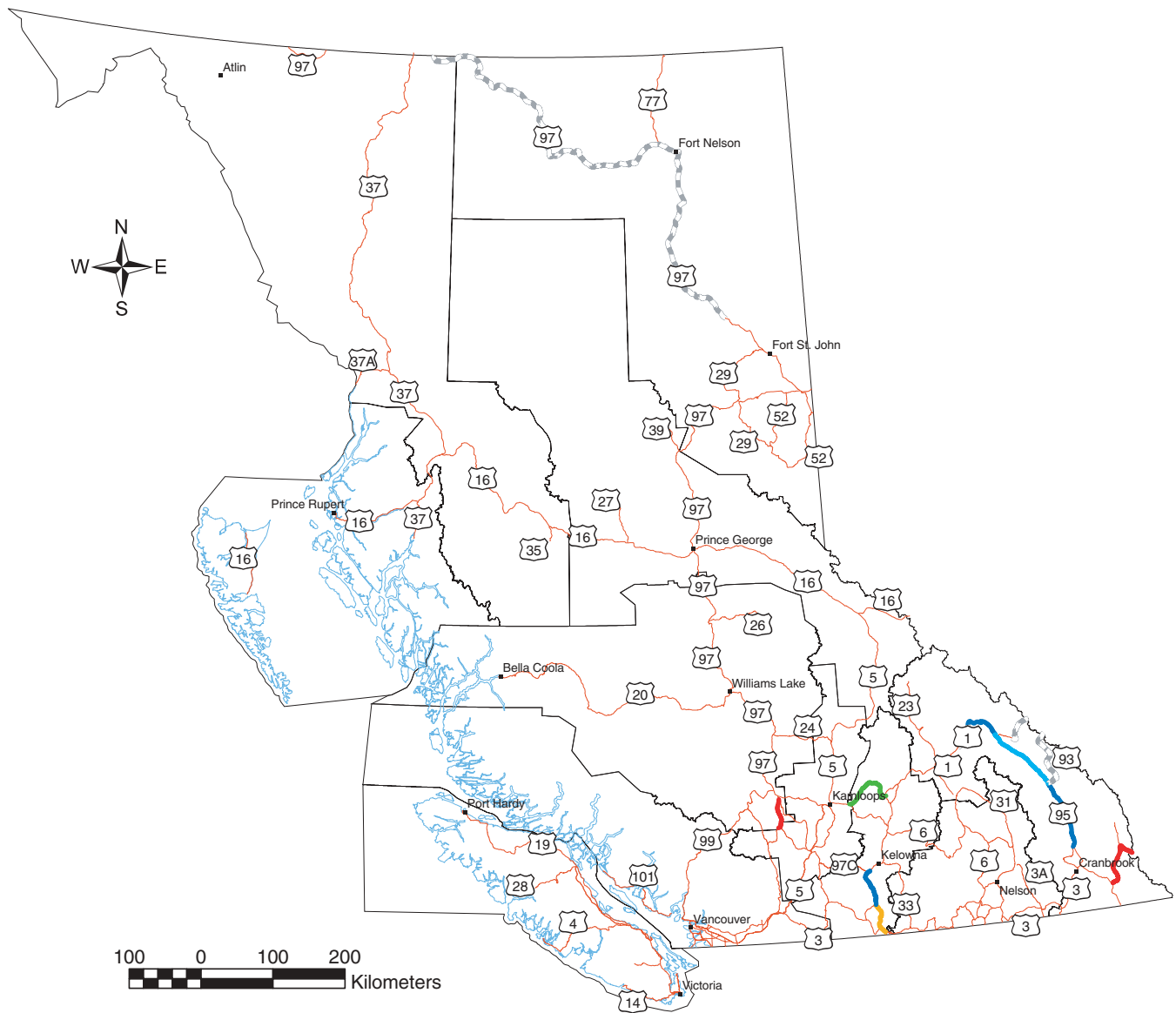
Legend

- 0.001 - 0.005
- 0.006 - 0.010
- 0.011 - 0.020
- 0.021 - 0.050
- 0.051 - 0.175
- No Accidents Reported on LKI Segment
- - - No WARS Data (Federally-Maintained)

Notes:

- (1) Reported Species not verified by wildlife specialist.
- (2) Discrepancies between the reported accident location and the normal range of the species may exist.

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Map 5.31

Total Sheep Accidents (1983 - 1992)

Legend

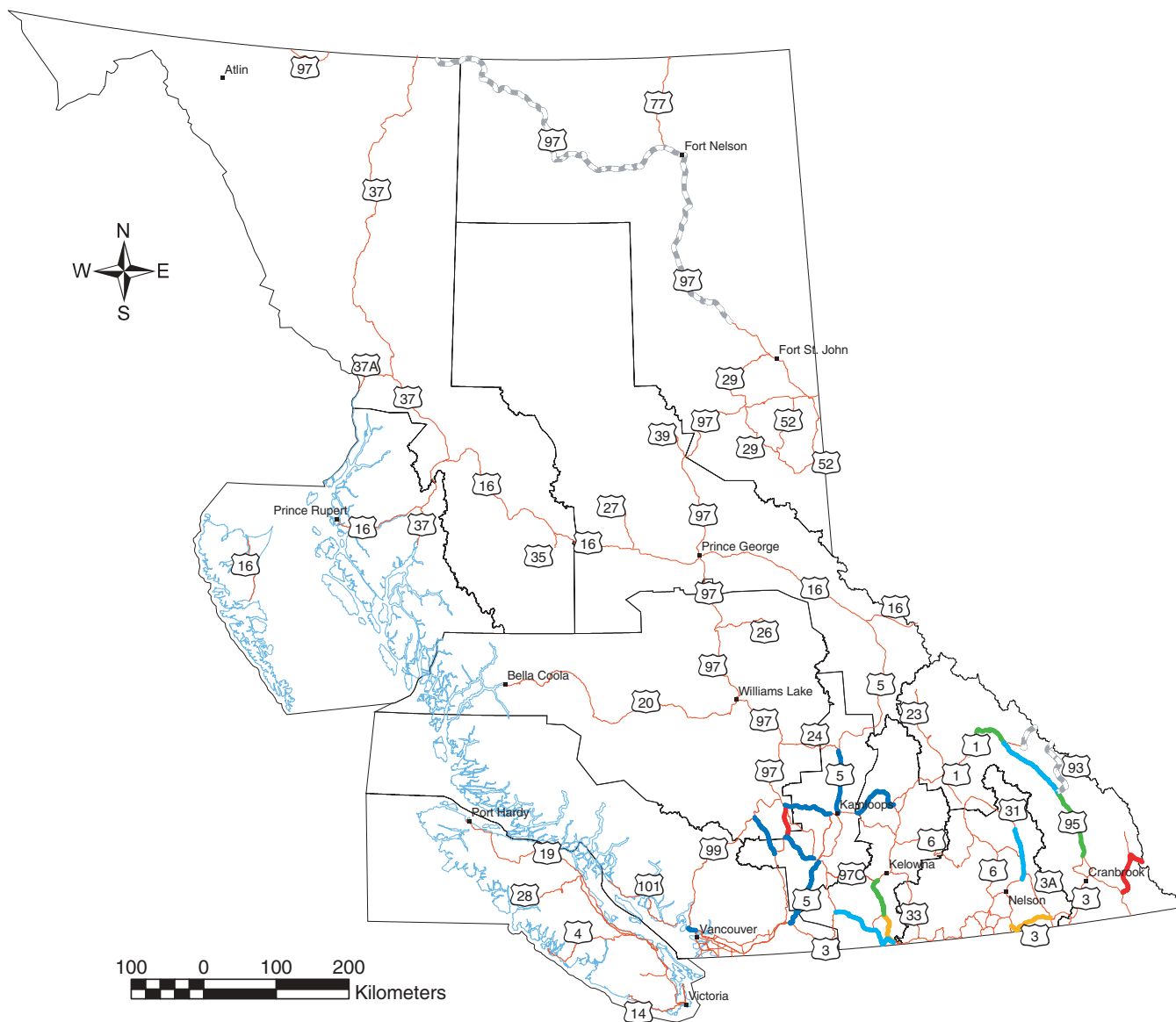


— No Accidents Reported on LKI Segment
 - - - No WARS Data (Federally-Maintained)

Notes:

- (1) Reported Species not verified by wildlife specialist.
- (2) Discrepancies between the reported accident location and the normal range of the species may exist.

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Map 5.32

Total Sheep Accidents (1993 - 2002)

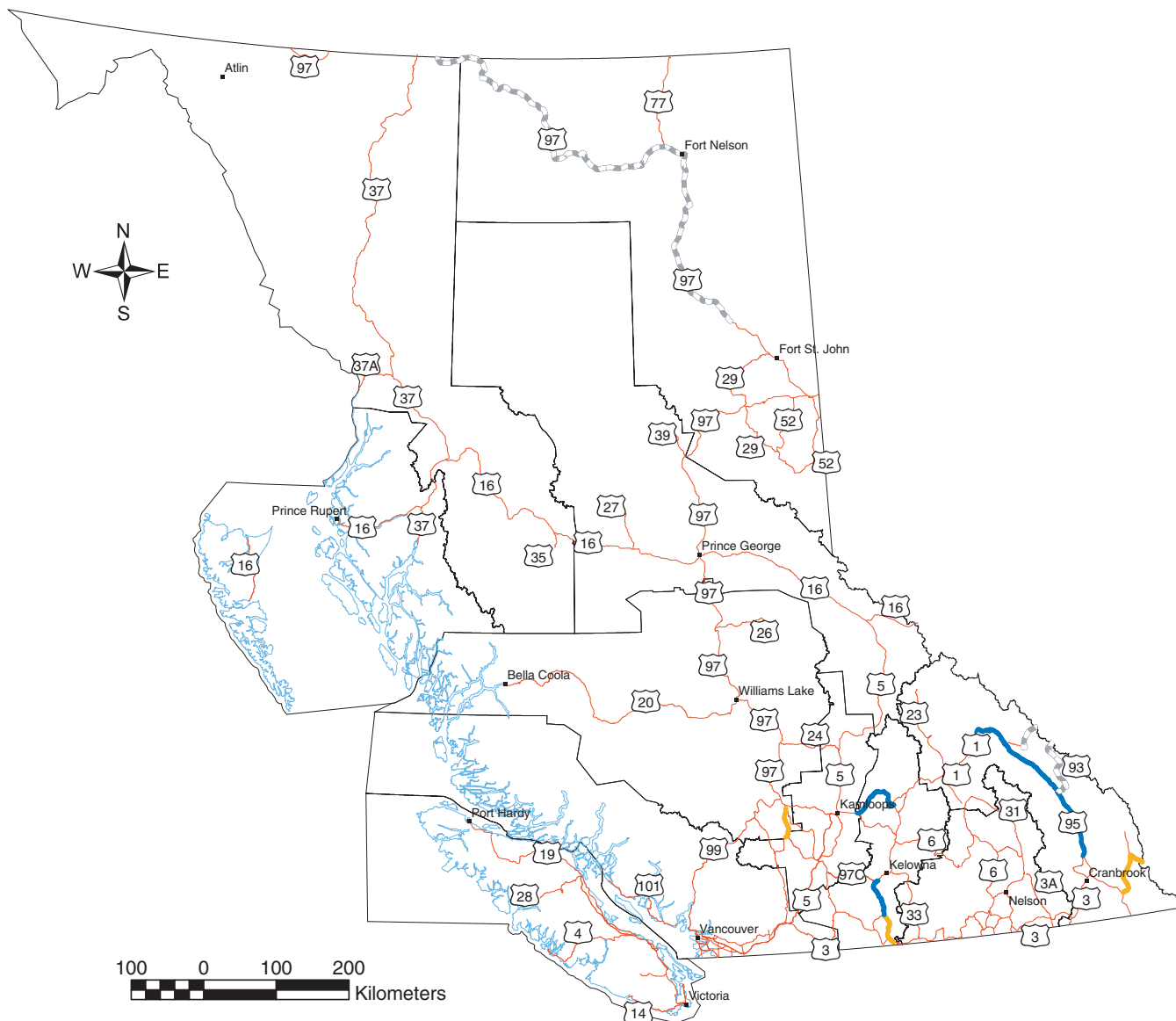
Legend

- 1
- 2 - 3
- 4 - 5
- 6 - 10
- 11 - 30
- No Accidents Reported on LKI Segment
- No WARS Data (Federally-Maintained)

Notes:

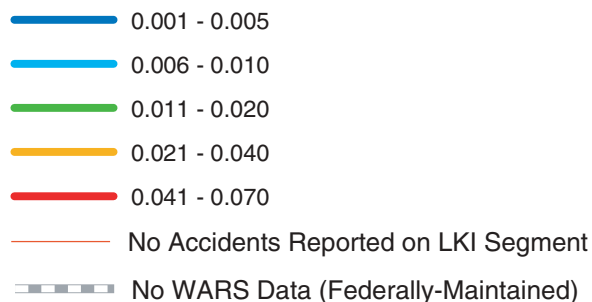
- (1) Reported Species not verified by wildlife specialist.
- (2) Discrepancies between the reported accident location and the normal range of the species may exist.

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Map 5.33
 Sheep Accidents
 per Kilometre per Year
 (1983 - 1992)

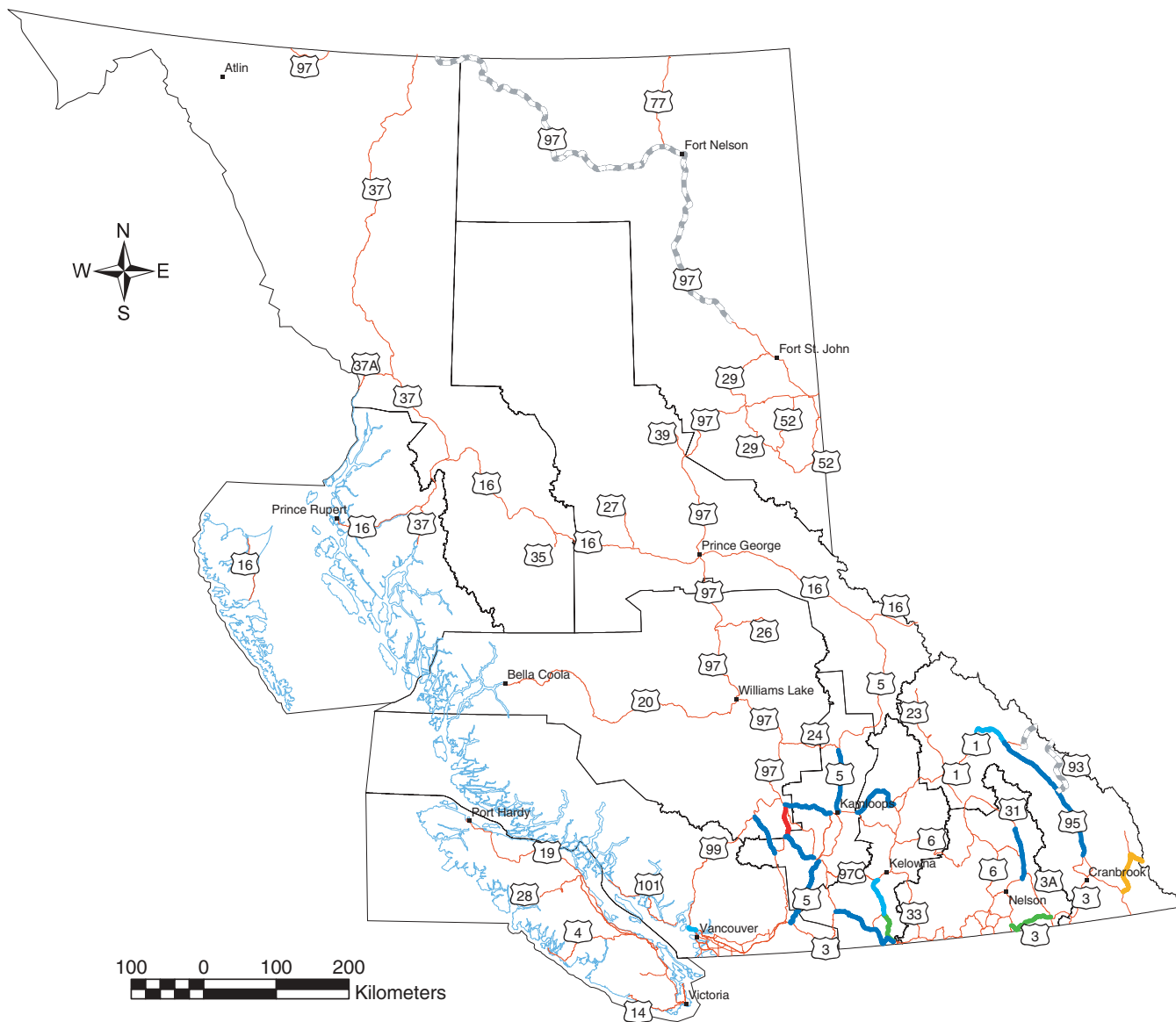
Legend



Notes:

- (1) Reported Species not verified by wildlife specialist.
- (2) Discrepancies between the reported accident location and the normal range of the species may exist.

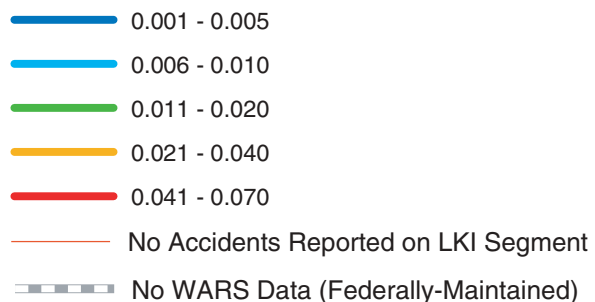
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Map 5.34

Sheep Accidents
per Kilometre per Year
(1993 - 2002)

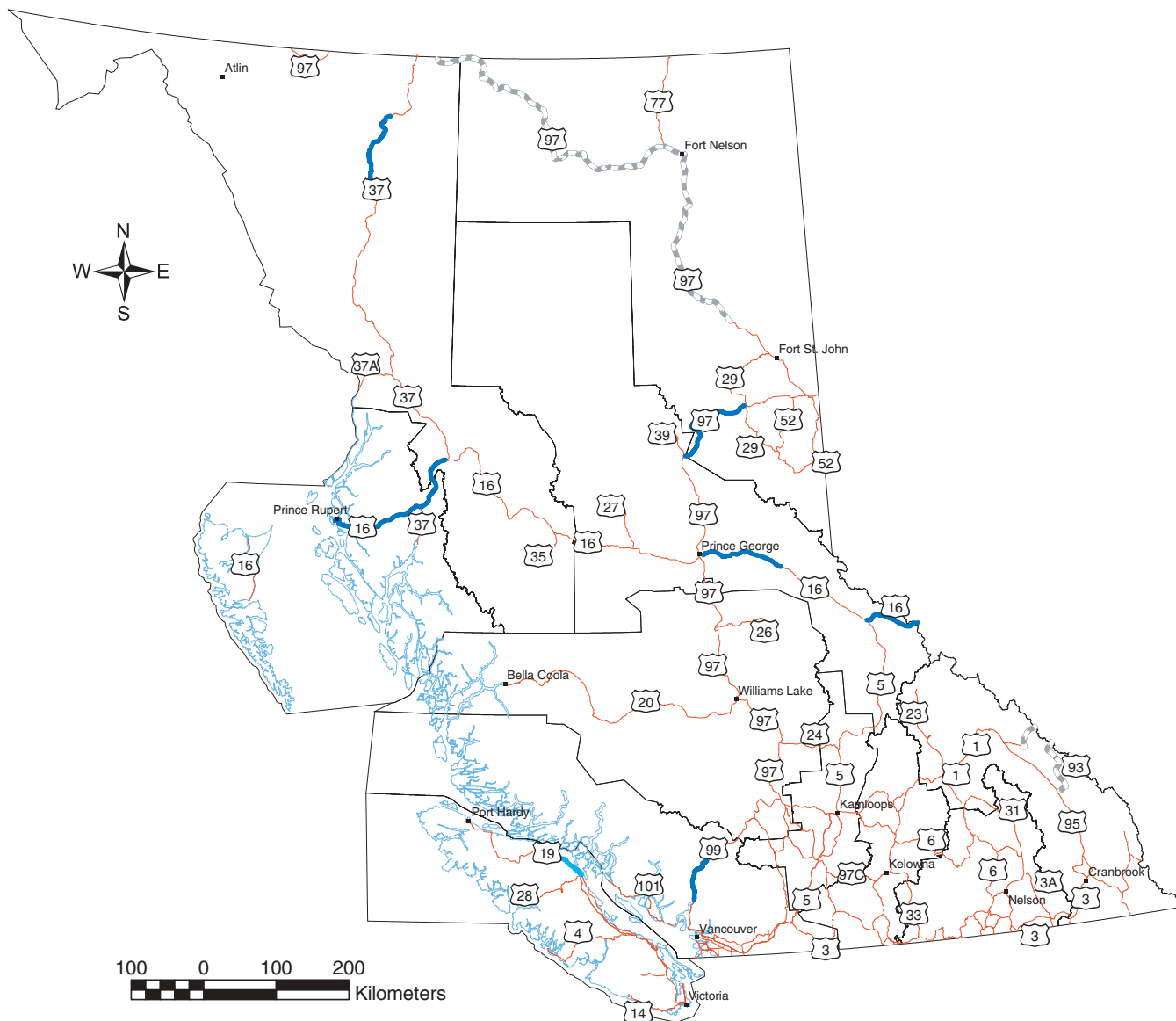
Legend



Notes:

- (1) Reported Species not verified by wildlife specialist.
- (2) Discrepancies between the reported accident location and the normal range of the species may exist.

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Map 5.35

Total Wolf Accidents (1983 - 1992)

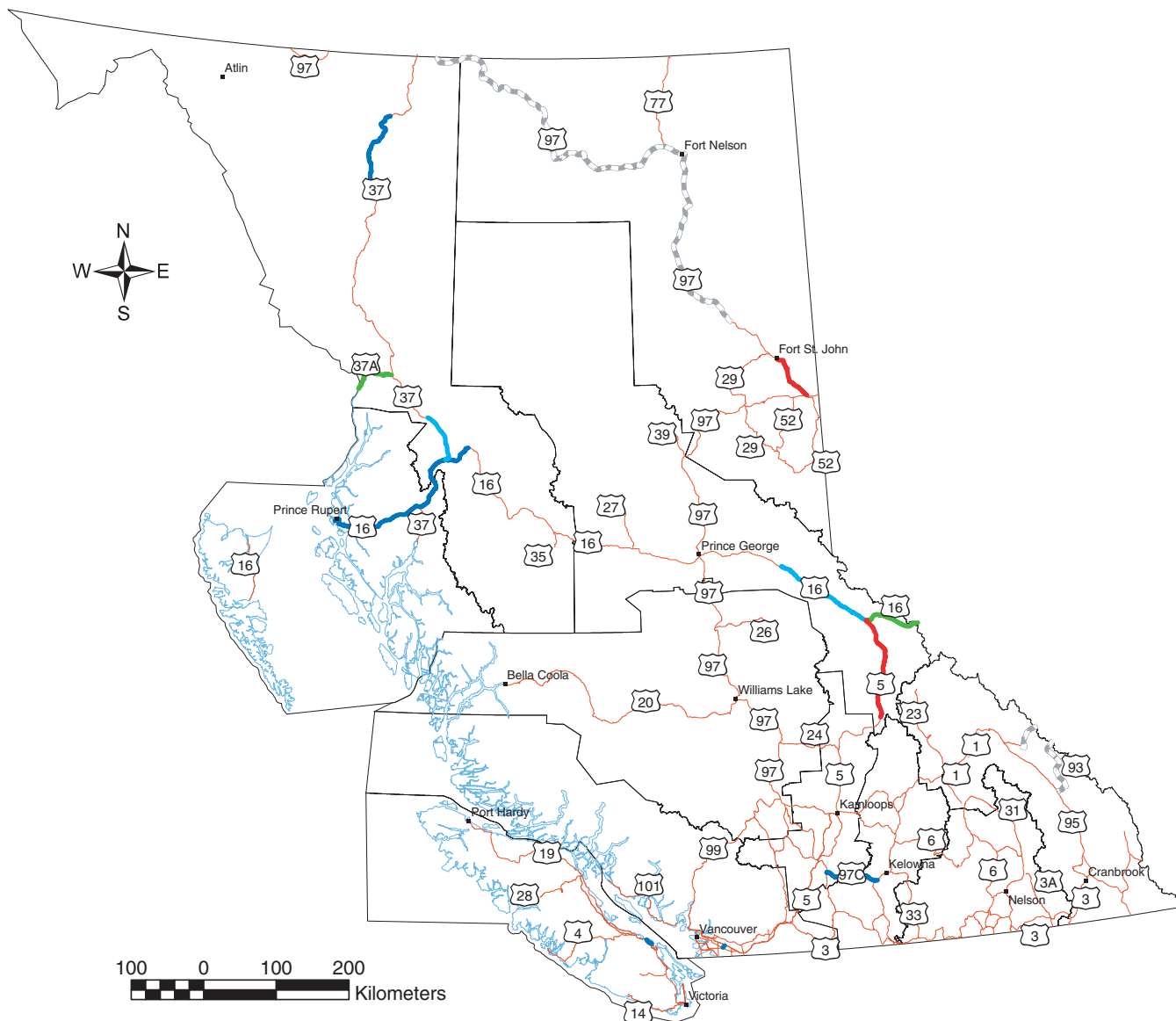
Legend

- 1
- 2
- 3
- 4
- 5 - 6
- No Accidents Reported on LKI Segment
- - - No WARS Data (Federally-Maintained)

Notes:

- (1) Reported Species not verified by wildlife specialist.
- (2) Discrepancies between the reported accident location and the normal range of the species may exist.

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Map 5.36

Total Wolf Accidents (1993 - 2002)

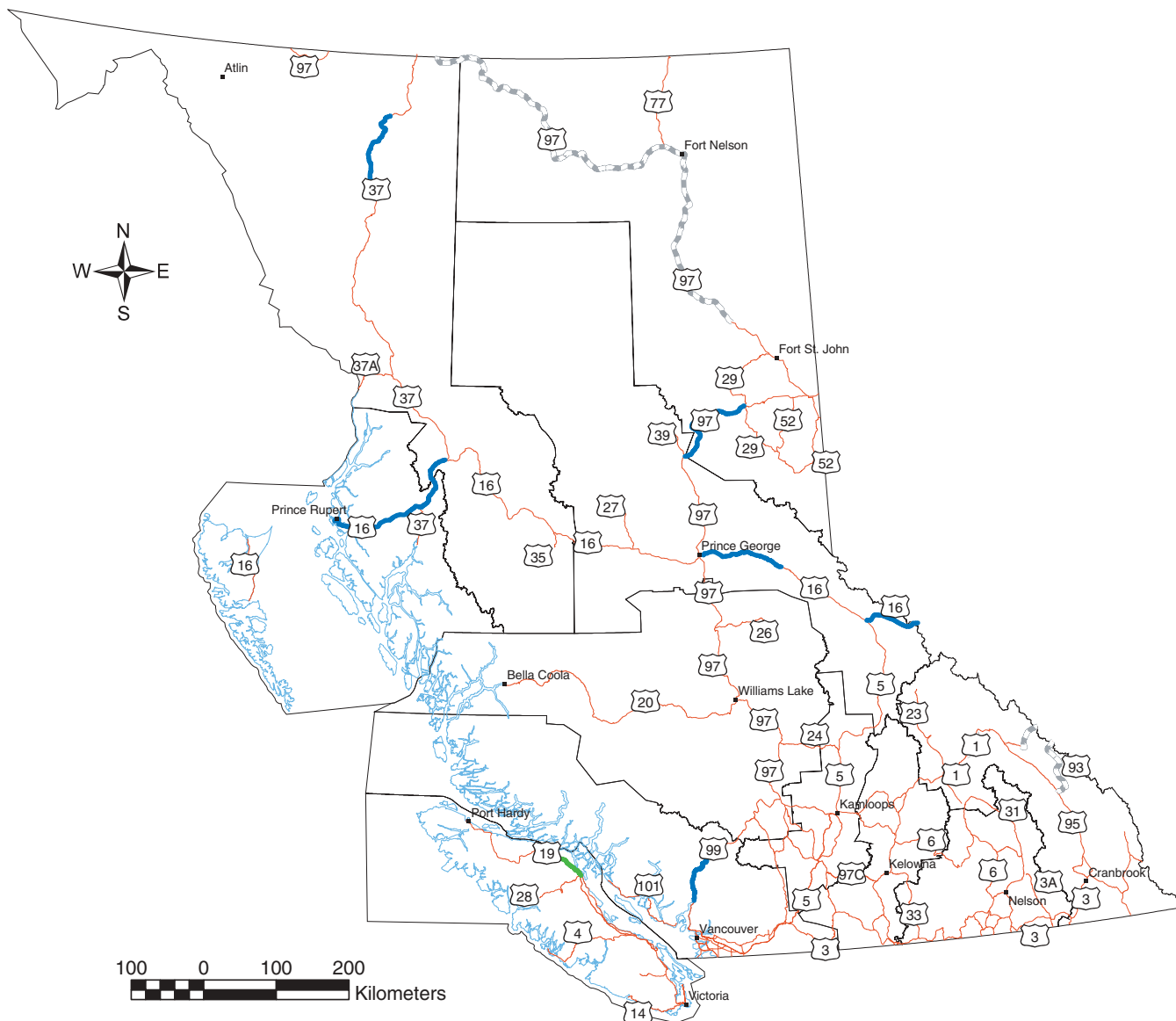
Legend

- 1
- 2
- 3
- 4
- 5 - 6
- No Accidents Reported on LKI Segment
- - - No WARS Data (Federally-Maintained)

Notes:

- (1) Reported Species not verified by wildlife specialist.
- (2) Discrepancies between the reported accident location and the normal range of the species may exist.

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Map 5.37
Wolf Accidents
per Kilometre per Year
(1983 - 1992)

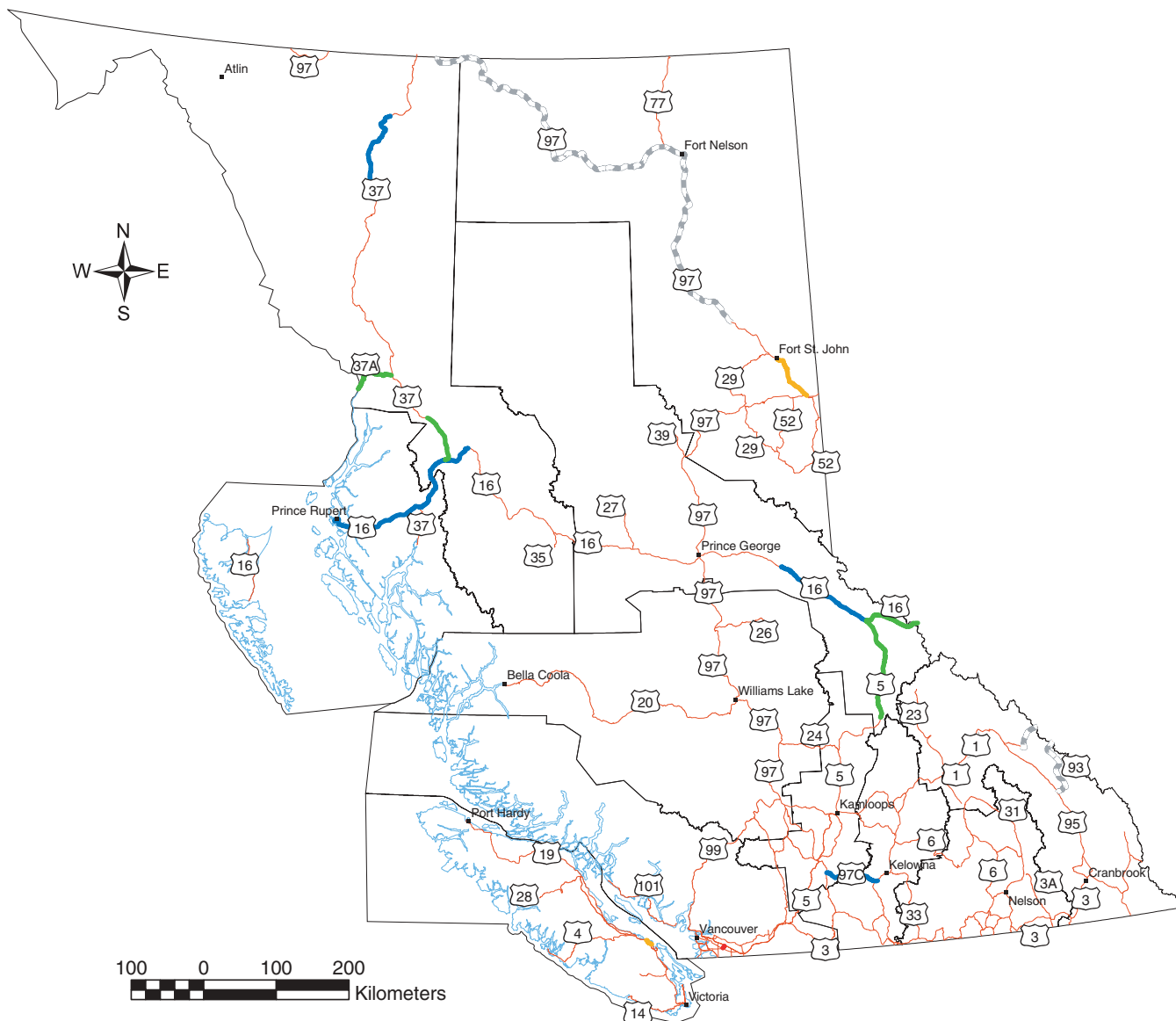
Legend

- 0.001 - 0.002
- 0.003 - 0.005
- 0.006 - 0.010
- 0.011 - 0.030
- No Accidents Reported on LKI Segment
- - - No WARS Data (Federally-Maintained)

Notes:

- (1) Reported Species not verified by wildlife specialist.
- (2) Discrepancies between the reported accident location and the normal range of the species may exist.

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Map 5.38
Wolf Accidents
per Kilometre per Year
(1993 - 2002)

Legend

- 0.001 - 0.002
- 0.003 - 0.005
- 0.006 - 0.010
- 0.011 - 0.030
- No Accidents Reported on LKI Segment
- - - No WARS Data (Federally-Maintained)

Notes:

- (1) Reported Species not verified by wildlife specialist.
- (2) Discrepancies between the reported accident location and the normal range of the species may exist.

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