# 8 Supplemental material

Table S1: Overview of the number of Avalanche Canada avalanche bulletin assessments included in the present analysis.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Region | Mountain Range | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | Total |
| *North Shore\** | *Coast Mtn* | *71* | *120* | *122* | *122* | *122* | *60* | *121* | *0* | *738* |
| *South Coast\** | *Coast Mtn* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *125 A* | *125* |
|  |  |  |  |  |  |  |  |  |  |  |
| South Coast | Coast Mtn | 90 | 119 | 0 | 0 | 0 | 0 | 0 | 0 | 209 |
| Sea-to-Sky | Coast Mtn | 0 | 0 | 123 B | 122 | 122 | 122 | 123 | 127 C | 739 |
| South Coast – Inland | Coast Mtn | 0 | 0 | 123 B | 122 | 122 | 122 | 123 | 125 | 737 |
|  |  |  |  |  |  |  |  |  |  |  |
| Northwest – BC | Coast Mtn | 85 | 118 | 0 | 0 | 0 | 0 | 0 | 0 | 203 |
| Northwest Inland | Coast Mtn | 0 | 0 | 123 D | 122 | 122 | 122 | 121 | 123 | 733 |
| Northwest Coastal | Coast Mtn | 0 | 0 | 122 D | 122 | 122 | 122 | 123 | 123 | 734 |
|  |  |  |  |  |  |  |  |  |  |  |
| *Whistler Blackcomb\** | *Coast Mtn* | *0* | *0* | *2* | *0* | *0* | *0* | *121* | *0* | *123* |
|  |  |  |  |  |  |  |  |  |  |  |
| North Columbia | Columbia Mtn | 98 | 116 | 122 E | 122 | 122 | 122 | 123 | 130 | 955 |
| Cariboos | Columbia Mtn | 0 | 0 | 123 E | 122 | 122 | 122 | 123 | 125 | 737 |
|  |  |  |  |  |  |  |  |  |  |  |
| South Columbia | Columbia Mtn | 87 | 116 | 123 F | 122 | 122 | 122 | 122 | 125 | 939 |
| Purcells | Columbia Mtn | 0 | 0 | 122 F | 121 | 122 | 122 | 123 | 127 | 737 |
|  |  |  |  |  |  |  |  |  |  |  |
| Kootenay Boundary | Columbia Mtn | 85 | 120 | 123 | 122 | 122 | 121 | 123 | 129 | 945 |
|  |  |  |  |  |  |  |  |  |  |  |
| South Rockies | Rocky Mtn | 92 | 118 | 123 G | 122 | 122 | 121 | 122 | 125 | 945 |
| Lizard Range | Rocky Mtn | 0 | 0 | 123 | 122 | 122 | 121 | 123 | 127 | 738 |
|  |  |  |  |  |  |  |  |  |  |  |
| *Bighorn Country – AB\** | *Rocky Mtn* | *6* | *17* | *0* | *0* | *0* | *0* | *0* | *0* | *23* |
|  |  |  |  |  |  |  |  |  |  |  |
| *North Rockies – BC\** | *Rocky Mtn* | *12* | *17* | *0* | *0* | *0* | *0* | *0* | *0* | *29* |
|  |  |  |  |  |  |  |  |  |  |  |
| Kananaskis Country\*\* | Rocky Mtn | 0 | 0 | 72 | 121 | 119 | 114 | 112 | 117 | 655 |
|  |  |  |  |  |  |  |  |  |  |  |
| *Yukon\** | *n/a* | *0* | *0* | *41* | *0* | *36* | *18* | *13* | *0* | *108* |
|  |  |  |  |  |  |  |  |  |  |  |
|  | Total | 626 | 861 | 1586 | 1584 | 1619 | 1531 | 1716 | 1628 | 11152 |

\* Forecast regions excluded from analysis because of inconsistent records

\*\* Bulletins produced by Kananaskis Country, but hosted by Avalanche Canada

A Boundaries of North Shore expanded and renamed to South Coast

B Boundaries of South Coast separated into Sea-to-Sky and South Coast Inland

C Boundaries of Sea-to-Sky reduced to accommodate North Shore expansion

D Boundaries of Northwest – BC separated into Northwest Coastal and Northwest Inland

E Boundaries of North Columbia separated into Cariboo and North Columbia

F Boundaries of South Columbia reduced to accommodate the Purcells

G Boundaries of the South Rockies reduced to accommodate the Lizard Range

Table S2: Overview of the number of Parks Canada public avalanche bulletin assessments included in the analysis.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Region | Mountain Range | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | Total |
| Glacier | Columbia | 0 | 0 | 146 | 178 | 170 | 170 | 172 | 158 | 994 |
|  |  |  |  |  |  |  |  |  |  |  |
| Banff, Yoho and Kootenay | Rocky | 0 | 0 | 140 | 181 | 181 | 175 A | 181 | 169 | 1027 |
| *Little Yoho\** | *Rocky* | *0* | *0* | *0* | *0* | *0* | *136* | *175* | *164* | *475* |
|  |  |  |  |  |  |  |  |  |  |  |
| Jasper | Rocky | 0 | 0 | 144 | 173 | 156 | 151 | 155 | 159 | 938 |
|  |  |  |  |  |  |  |  |  |  |  |
| *Waterton Lakes\** | *Rocky* | *0* | *0* | *40* | *45* | *52* | *44* | *65* | *60* | *306* |
|  |  |  |  |  |  |  |  |  |  |  |
|  | Total | 0 | 0 | 470 | 577 | 559 | 676 | 748 | 710 | 3740 |

\* Forecast regions excluded from analysis because of inconsistent records

A Boundaries of Banff, Yoho, and Kootenay reduced to accommodate Little Yoho

Table S3: Overview of weather data included in the present analysis and number of observations from each station during the study period.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Site name** | **Elevation (relative location)** | **Lat.** | **Long.** | **Source** | **Forecast region** | **2009/10** | **2010/11** | **2011/12** | **2012/13** | **2013/14** | **2014/15** | **2015/16** | **2016/17** |
| **Coastal Mountains** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Whistler Roundhouse | 1835 m (mtn) | 50.07 | -122.95 | EC | Sea-to-Sky | 116 | 120 | NA | NA | 121 | 117 | 116 | 121 |
| Blowdown | 1890 m (mid mtn) | 50.40 | -122.47 | MOTI | South Coast Inland | 121 | 121 | 122 | 121 | 119 | 121 | 122 | 121 |
| Little Bear | 1660 m (mtn) | 49.60 | -121.18 | MOTI | South Coast Inland | 121 | 120 | 120 | 120 | 120 | 112 | 121 | 116 |
| **Columbia Mountains** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sliding Mountain | 1675 m (mtn) | 53.16 | -121.48 | MOTI | Cariboos | 120 | 121 | 122 | 116 | 121 | 121 | 89 | 78 |
| Sun Peaks | 2055 m (mtn) | 50.90 | -119.92 | EC | North Columbia | NA | NA | 117 | 107 | 116 | 113 | 115 | 119 |
| Apex | 1750 m (mid mtn) | 49.40 | -119.90 | MOTI | Kootenay Boundary | 119 | 121 | 122 | 121 | 121 | 121 | 121 | 121 |
| London Ridge | 2070 m (mtn) | 50.04 | -117.24 | MOTI | South Columbia | 119 | 119 | 122 | NA | 121 | 115 | 119 | 117 |
| Whitewater | 1950 m (mtn) | 49.44 | -117.15 | InfoEx | Kootenay Boundary | NA | 104 | 112 | 114 | 108 | 103 | NA | 113 |
| Kootenay Pass | 1780 m (mid mtn) | 49.06 | -117.04 | MOTI | Kootenay Boundary | 120 | 121 | NA | NA | 120 | 117 | NA | 107 |
| **Rocky Mountains** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Chatter Creek | 1615 m (valley) | 51.86 | -117.60 | InfoEx | - | 112 | NA | 108 | 111 | 106 | NA | NA | 113 |
| Panorama | 2356 m (mtn) | 50.43 | -116.20 | InfoEx | Purcells | 114 | 118 | 119 | 113 | 118 | 119 | 121 | 121 |
| Lake Louise | 2200 m (mtn) | 51.46 | -116.12 | InfoEx | Banff, Kootenay Yoho | 79 | 77 | NA | 112 | 99 | 112 | 119 | 119 |
| Kananaskis | 1890 m (valley) | 50.79 | -115.31 | InfoEx | Kananaskis Country | 84 | 101 | 111 | 109 | 89 | 110 | 109 | 112 |

MOTI Ministry of Transportation and Infrastructure  
EC Environment Canada   
NA Forecast regions excluded from analysis because of inconsistent records  
mid mtn Mid-mountain  
mtn Mountain ridgetop