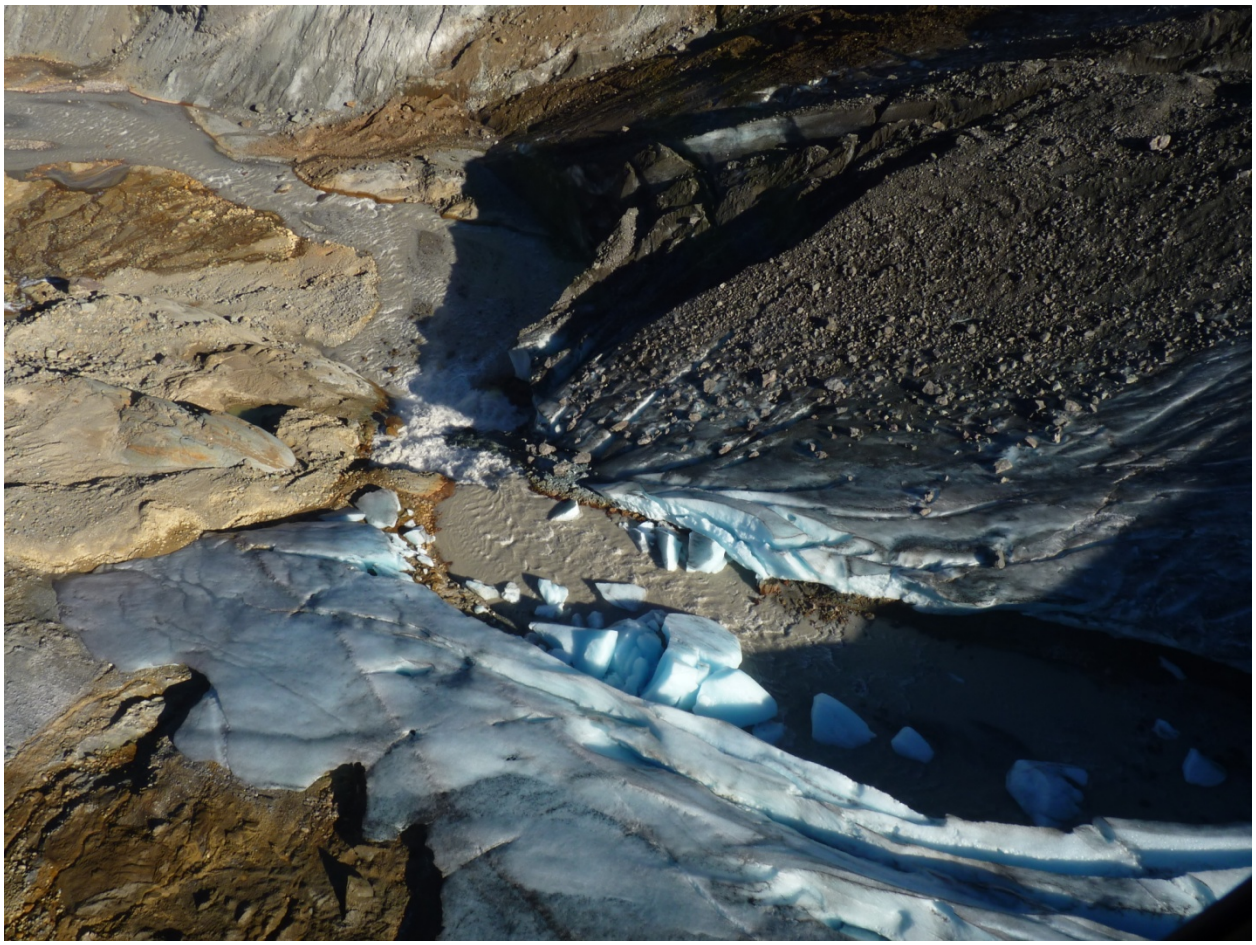
Streamflow Trends in the Skeena Region



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Abstract:

Trends were calculated for 23 streamflow variables of interest, for up to 55 Water Survey of Canada hydrometric stations, and for four periods of varying length. Statistical significance was determined for each trend value. Trends were plotted against basin area, basin median elevation, percent glaciated area of basin and median glacial elevation. Trends for all 23 variables were mapped for each of the four periods analysed. Trends were not uniformly significant for all Skeena-region rivers considered, and we emphasize that site-specific evaluation is necessary. Nevertheless, on the basis of cases where statistically significant trends were identified, we can identify some broad patterns:

- Trends in average flows are somewhat mixed but show some tendency toward increases, consistent with other work in southern BC;
- There is a general but not universal tendency toward increasing winter minimum flows and declining summer flows, consistent with prior work in BC;
- Most glaciated basins are experiencing reductions in median August flows;
- We also see evidence for a general trend toward earlier freshets, consistent with prior work across much of western North America, and;
- Most variables maintained the same trend direction at a given station for all periods analysed, but the statistical significance of the trends varied depending on the period.

This report is intended to improve the ability of the proponents of major projects (e.g., mines, run-of-river power projects) and the responsible regulatory agencies to address the potential impacts to the project resulting from streamflow regime changes. In particular, the report focuses on variables of interest for future water balance estimates and the necessary authorizations (e.g., minimum annual 7-day average low flow, median annual discharge).

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1.0 Introduction:

Many regulatory decisions related to water quantity, and secondarily water quality (e.g., loading calculations) are based on limited site specific streamflow data. These data are often linked to regional hydrometric stations with longer record periods to provide estimates of pertinent streamflow variables (e.g., mean annual runoff, 7-day low flows, and peak flow magnitudes). This requires two important assumptions; the regional streamflow record(s) are transferable to the site being studied, and the regional (and site specific) data are of sufficient length to adequately represent long-term variability. The latter assumption often implies that the streamflow records being utilized are statistically stationary. In other words, a metric calculated from the historic record will retain the same value when re-calculated from future data. As the understanding of anthropogenic and climatic influences on streamflow improves, it is apparent that this assumption is often not valid. As some of these regulatory decisions are expected to be valid for decades, some consideration of ongoing changes in streamflow is necessary before an authorization is issued. Therefore, an assessment of the potential influence of long-term change in streamflow metrics should be undertaken to ensure that estimates of future streamflow conditions are as robust as possible.

This analysis focuses on the Skeena Region in northwestern British Columbia, an area where large scale industrial development is currently increasing – most of which requires highly detailed knowledge of the regional streamflow regime. The intent of this analysis is to present the current trends in several (n = 23) streamflow variables of interest to statutory decision makers, the public, industry and other stakeholders. Four time periods of increasing length are examined to determine the effect of record length on the identified trend magnitude, direction and significance. Trends are presented by median basin elevation, basin area, percent glacier coverage and median glacial elevation (within the basin of interest).

This document is intended to provide information on baseline trends in streamflow to proponents and regulators to assist in the assessment of the potential impacts of a changing streamflow regime on a given authorization. It is important to note that current trends cannot be extrapolated into the future with a high degree of confidence. The existence (or lack thereof) of trends in the historical record does not mean that the same will hold true in the future.

2.0 Objectives:

The objectives of this analysis are as follows:

1. Calculate trends in various streamflow variables for the Skeena Region;
2. Determine whether they are statistically significant;
3. Identify the existence of spatial patterns in the trends (related to median basin elevation, basin area, percent of basin with glacier cover, and median elevation of glaciated portion of each basin).

3.0 Limitations:

The results presented in this report are intended to provide the reader with a scoping level assessment of changes in streamflow in the Skeena Region. It is important to note that a trend analysis (as presented herein) is only one of several possible methods that can be used (collectively or independently) to assess current and future changes in streamflow regimes. Depending on the nature of the site, analysis, regulatory context; magnitude of current or expected change and relative risk introduced by non-stationarity, more detailed analyses of the inter-annual variability in streamflow may be required. Users of this document are encouraged to contact the agencies responsible for reviewing work that may include consideration of future changes to streamflow to obtain guidance on the necessary level of detail for a given study.

While every attempt has been made to ensure that the identified trends are reflective of long-term changes in streamflow, trends can be influenced by several factors, including, but not limited to:

- Land cover change (e.g., urbanization, forestry, linear development, etc.);
- Large scale climate cycles (e.g., Pacific Decadal Oscillation [PDO], El Niño Southern Oscillation [ENSO]; Cayan and Peterson, 1989; Stewart *et al*., 2005), and;
- Changes in measurement techniques, QA/QC practices, rating curves, etc.

It is incumbent on the reader to exercise their professional judgement when assessing the potential relevance and impact of an identified trend on the streamflow analysis being conducted.

4.0 Methods:

Streamflow records of average daily discharge were downloaded from HYDAT (WSC, 2013). Out of 206 hydrometric stations in the study area, 55 stations (Table 1; Figure 1) met the following criteria:

- Station active as of 2010;
- Record period of >10 consecutive years;
- Basin is non-regulated (i.e., no major diversions or impoundments).

Missing data or incomplete records were accounted for using the following methods:

- Discharge time-series were truncated to ensure annual time-series was continuous (i.e., a minimum of 5 years of data was present before and after a missing year, gaps greater than one year were disallowed);
- Where a month had > 5 days of missing data, this month was removed from the time-series, and;
- No missing data were estimated or infilled.

Basin areas and median elevations were taken from the Inventory of Streamflow in the Skeena Region (Ahmed and Jackson, 2013). As discussed in that report, the updated basin areas may not match the values provided in the HYDAT database. The region has extensive glacier cover. In general, glaciers can be an important control on watershed hydrology and hydroclimatic change

(e.g., Meier, 1969; Jansson *et al.*, 2003; Moore *et al.*, 2009; O'Neel *et al*., 2014). In particular, glaciers have been shown to influence trends in annual flow volume in northwest BC and southwest Yukon (Fleming and Clarke, 2003) and summer baseflows throughout BC (Stahl and Moore, 2006). Glacial polygons were obtained for the study area from the Global Land Ice Measurements from Space (GLIMS) database (Raup *et al*., 2007; Bolch *et al.*, 2010; GLIMS, 2014). Median glacier elevation was calculated from the overlay of the polygon on the BC TRIM DEM data (25 m cell size). The glacier polygons were overlaid on the updated basin polygons to calculate percent glacier cover for all basins (in Table 1, no glacial cover is represented by 'NA').

The following 23 variables were calculated from the daily average discharge time-series data:

Variable[1]	Description	Units	Table
MIN_Q	minimum annual average daily discharge	m^3/s	2
AVG_Q	average annual average daily discharge (calendar year)	m^3/s	4
MED_Q	median annual average daily discharge (calendar year)	m^3/s	4
AVG_WAT_YR	average water year discharge (Oct. 1 - Sept. 30)	m^3/s	5
MED_WAT_YR	median water year discharge (Oct. 1 - Sept. 30	m^3/s	5
PULSE_DATE	date of freshet pulse initiation	Julian Day	3
DATE_CM	date of hydrograph centre of mass - calendar year	Julian Day	3
ANN_7Q_MIN	annual minimum 7-day average low flow	m^3/s	2
ANN_30Q_MIN	annual minimum 30-day average low flow	m^3/s	2
JUN-SEP_7Q_MIN	annual June-September minimum 7-day average low flow	m^3/s	6
JUN-SEP_30Q_MIN	annual June-September minimum 30-day average low flow	m^3/s	6
JANUARY	January median daily discharge	m^3/s	7
FEBRUARY	February median daily discharge	m^3/s	7
MARCH	March median daily discharge	m^3/s	7
APRIL	April median daily discharge	m^3/s	8
MAY	May median daily discharge	m^3/s	8
JUNE	June median daily discharge	m^3/s	8
JULY	July median daily discharge	m^3/s	9
AUGUST	August median daily discharge	m^3/s	9
SEPTEMBER	September median daily discharge	m^3/s	9
OCTOBER	October median daily discharge	m^3/s	10
NOVEMBER	November median daily discharge	m^3/s	10
DECEMBER	December median daily discharge	m^3/s	10

[1]All variables calculated from the mean daily discharge values provided in the HYDAT database.

The following streamflow timing metrics were calculated in addition to the various discharge metrics:

- PULSE_DATE – The date of freshet initiation calculated as the day when the cumulative departure from that years mean annual discharge is most negative (Cayan *et al.*, 2001). The cut-off date is set as August 31, to ensure that autumn rain events in mixed pluvial/nival regimes are not inadvertently counted as the freshet date.
- DATE_CM – Date of centre of hydrograph mass (calendar year), calculated following Stewart *et al.* (2005).

Changes in annual streamflow volume were assessed using average and median calendar year discharge, and average and median water year discharge. Median values allow shifts in the

centroid of the distribution to be assessed, and are less prone to the skewness present in some discharge time-series resulting from large peak flow events.

Many regulatory decisions must assess the potential impact of an authorization on (or during) periods of low flow, where the aquatic ecosystem may be under greater stress. Low flows are most commonly assessed for two periods; annual (usually representative of winter flows in nival and glacial regimes) and June-September. These indices are commonly based on a rolling 7-day average of discharge (7Q) or, less commonly, a rolling 30-day average (30Q) (Smakhtin, 2001). The minimum 7- or 30-day averages are then tabulated on an annual basis, and recurrence interval analyses conducted (e.g., $7Q_{10}$). Time series of these four low flow indices were examined, to determine whether authorizations may need to consider potential shifts in these metrics over time.

Trends in peak flows (daily or instantaneous) were not assessed, as there are many factors that influence peak flows that can be highly variable between basins (e.g., changes in land cover, elevation distribution, storm tracks, etc.). Peak flow analysis is better undertaken on a project specific basis, and the APEGBC document "*Professional Practice Guidelines – Legislated Flood Assessments in a Changing Climate in BC*" (June 2012) provides guidance on accounting for trends when estimating peak flows.

Many of the stations that represent small, high-elevation catchments also have the shortest record periods, relative to the larger drainages. These small catchments are of greatest interest when trying to find surrogate catchments for proposed major industrial projects (e.g., mines, IPPs). In order to determine whether trends calculated for larger watersheds (with longer record periods) were still present at the same temporal scale as the small watersheds, the records were split into the following four periods:

- 1961-2010 (19 stations)
- 1971-2010 (32 stations)
- 1981-2010 (37 stations)
- 1997-2010 (55 stations)

Due to periods of hydrometric network expansion and contraction, there is a significant step change in the number of records that extend prior to 1961. For similar reasons, and due to the expansion of the WSC network into smaller headwater basins in the late 1990s, most of the records for basins less than 100 km^2 in area begin in 1997 (9 stations out of 13).

Annual time-series of these parameters were analyzed for trend using the 'zyp' package in R (Bronaugh and Werner, 2013). Initial trend slopes were estimated using the Theil-Sen approach. To address serial correlation effects on statistical hypothesis tests for trend, if a trend was noted, the time-series was detrended using the slope (Yue *et al*., 2002). The trend and residuals are then blended, and the Mann-Kendall's test for trend significance (p-value) is then applied. The 'zyp' package reinflates the values that trend significance are calculated from by dividing by (1-AR(1)). All trends are presented as annual values (i.e., rate of change per year in the variable of interest). However, Fleming and Weber (2010) found that the basic conclusions drawn from

analyses of water supply trends in British Columbia were not strongly sensitive to the methodology employed.

Discharge trends (calculated in m^3/s) were converted to unit runoff (in $L/s/km^2$) to account for the influence of basin area on relative trend magnitude. The calculated trends are presented for each variable, for the four time periods, and for all stations in Tables 2-10. All trends are presented as an annual increment in $L/s/km^2/yr$, and those that are significant at $p<0.10$ are shown in bold.

5.0 Results:

All results are plotted for each variable against median elevation (m asl) in Appendix 1 as follows. Trends that are significant at $p< 0.10$ are depicted by black points:

- Figures 1 – 23 (1961-2010);
- Figures 47-69 (1971-2010);
- Figures 93-115 (1981-2010), and;
- Figures 139-161 (1997-2010).

All results are plotted for each variable against basin area (km^2 in log scale) in Appendix 1 as follows. Trends that are significant at $p< 0.10$ are depicted by black points:

- Figures 24-46 (1961-2010);
- Figures 70-92 (1971-2010);
- Figures 116-138 (1981-2010), and;
- Figures 162-184 (1997-2010).

The influence of basin glacial cover (percent coverage and median glacial elevation) is plotted against median August discharge for all four periods in Figures 185-192.

Maps showing trends for all periods are presented in Appendix 2 as follows:

- Figures 1 – 23 (1961-2010);
- Figures 24-46 (1971-2010);
- Figures 47-69 (1981-2010), and;
- Figures 70-92 (1997-2010).

The presence of a significant trend is indicated by a black triangle, and non-significant trends by a grey symbol. Positive trends are shown by upward facing triangles, and negative trends by downward facing triangles. Neutral, or zero trends are indicated by a grey circle. Trends are categorized by magnitude into four classes. Depending on the dominance of negative (or positive trends), the categories may not be evenly distributed.

If the calculated trends presented here are to be used at more than the scoping level, the potential influence of larger scale patterns of climatic variability should be assessed in more detail. Some potentially useful resources in or near this region include Neal *et al*. (2002), Fleming and Whitfield (2010), and Whitfield *et al*. (2010). Similarly, the ‘field significance’ (e.g., Burn and Hag Elnur, 2002) of these trends was not assessed, and this may be a necessary step if attempting to regionalize the trends presented here for an ungauged basin. However, field significance tests

were originally devised in the meteorological community for application to spatial point data (Livezey and Chen, 1983), and their applicability to watershed-based streamflow data may be unclear, particularly in geophysically heterogeneous regions (Fleming and Weber, 2010). While the historical trends presented here cannot be assumed to continue indefinitely into the future, a question which would require site-specific model-based studies to address (e.g., Whitfield *et al*., 2002; Morrison *et al.*, 2002; Stahl *et al.*, 2008; Bennett *et al.*, 2012; Shrestha *et al.*, 2012; Jost *et al.*, 2012), they clearly underline the fact that the non-stationarity assumption does not hold in many cases.

6.0 Summary:

Trends were not uniformly significant for all Skeena-region rivers considered, and we emphasize that site-specific evaluation is necessary. Nevertheless, on the basis of cases where statistically significant trends were identified, we can identify some broad patterns:

- Trends in average flows are somewhat mixed but show some tendency toward increases, consistent with other work in southern BC;
- There is a general but not universal tendency toward increasing winter minimum flows and declining summer flows, consistent with prior work in BC;
- Most glaciated basins are experiencing reductions in median August flows;
- We also see evidence for a general trend toward earlier freshets, consistent with prior work across much of western North America, and;
- Most variables maintained the same trend direction at a given station for all periods analysed, but the statistical significance of the trends varied depending on the period.

As guidance, MOE suggests that a project with a projected lifespan of greater than 20 years should consider potential climate change impacts on the streamflow regime, regardless of the current stationarity of the streamflow record. This is based on the latest climate projections from the IPCC AR5 report (IPCC, 2013; Annex I, Supplementary Material RCP8.5; Fig. AI.SM8.5.28), which, depending on the scenario, indicate that the temperatures in western North America are expected to increase above the range of historical variability from 20-50 years hence. Projections are much less certain for precipitation, but precipitation phase, snow melt timing and storm tracks (among other climate system attributes) are all related to changes in temperature.

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Tables

Table 1: Hydrometric station metadata

The glacier metrics are calculated as of 2007 (Bolch *et al.*, 2010), and depending on the glacier attributes, inter-annual changes in area relative to basin area can be substantial. It is important to note that the glacier area as a percentage of basin area and the median glacial elevation are not temporal constants.

Hydro-logic Zone	Watershed		Record Period	Station Co-ordinates		Drainage Area (km^2)	Median Basin Elev. (m asl)	Glacial Area (%)	Median Glacier Elev. (m asl)
	River	Hydrometric Station		Latitude	Longitude				
1	Stikine - Wrangell	08CF003	1984-2010	56.70195	-132.141114	50,808	1,313	6.64	1,691
1	Iskut - Johnson	08CG001	1959-2010	56.737191	-131.674618	9,504	1,270	12.01	1,642
1	Surprise	08DA005	1967-2010	56.121693	-129.483597	219	1,290	17.21	1,672
1	Nass	08DB001	1929-2010	55.263519	-129.087601	18,295	1,119	6.22	1,675
1	Ansedagan	08DB013	1997-2010	55.133342	-129.357376	26.3	881	NA	NA
1	Ksedin	08DB014	1997-2010	55.017532	-129.343384	17.8	1,142	NA	NA
1	Kispiox	08EB004	1963-2010	55.43348	-127.71655	1,862	768	0.20	1,777
2	Alsek - Bates	08AB001	1974-2010	60.118309	-137.97775	15,109	1,246	NA	NA
2	Alsek - Yakutat	08AB002	1993-2010	60.118309	-137.97775	28,024	1,124	7.82	1,380
2	Takhanne	08AC001	1984-2010	60.113441	-136.92764	363	1,386	NA	NA
2	Tatshenshini	08AC002	1989-2010	60.118969	-137.08464	1,710	1,295	1.73	1,733
2	Taku nr Juneau	08BB005	1988-2010	58.52252	-133.804868	16,842	1,110	6.11	1,675
2	Tuya	08CD001	1962-2010	58.07248	-130.825439	3,552	1,211	NA	NA
2	Stikine - Telegraph	08CE001	1954-2010	57.900768	-131.157074	28,946	1,357	0.40	1,991
2	Kelly	08DA012	1997-2010	56.290279	-129.22972	6.4	774	NA	NA
2	Atlin	09AA006	1950-2010	59.597003	-133.819977	6,845	1,050	8.68	1,758
2	Wheaton	09AA012	1955-2010	60.127781	-134.88361	874	1,484	NA	NA
2	Tutshi	09AA013	1956-2010	59.946455	-134.326161	987	1,204	1.37	1,761
2	Takhini	09AC001	1948-2010	60.850971	-135.74113	7,138	1,289	1.53	1,820
2	Ibex	09AC007	1989-2010	60.72575	-135.48625	641	1,358	NA	NA
2	Swift	09AE003	1956-2010	59.930561	-131.76778	3,405	1,274	NA	NA
2	Cottonwood	10AC005	1964-2010	59.116727	-129.826281	874	1,376	NA	NA
3	Liard - Upper Crossing	10AA001	1960-2010	60.049999	-128.89999	31,958	1,166	NA	NA
3	Rancheria	10AA004	1985-2010	60.20417	-129.55	5,286	1,250	NA	NA
3	Big Creek	10AA005	1989-2010	60.158329	-129.70277	1,003	1,176	NA	NA
3	Frances	10AB001	1962-2010	60.473888	-129.1189	13,013	1,164	NA	NA
3	Liard - Lower Crossing	10BE001	1944-2010	59.412492	-126.097218	104,328	1,151	0.10	2,203
8	Babine	08EC013	1972-2010	55.426682	-126.697563	6,732	973	0.02	1,974
8	Goathorn	08EE008	1960-2010	54.649021	-127.122505	122	1,164	0.42	2,032
8	Simpson	08EE012	1969-2010	54.809861	-127.205093	13.2	1,311	NA	NA
8	Buck	08EE013	1973-2010	54.398513	-126.653389	567	1,114	NA	NA
8	Stellako	08JB002	1929-2010	54.009064	-125.006699	4,001	941	0.04	1,993
8	Nautley	08JB003	1950-2010	54.085521	-124.600838	6,574	927	0.02	1,995
8	North Beach	08JB013	1998-2010	54.127187	-125.92858	7.1	1,143	NA	NA
8	Driftwood	08JD006	1979-2010	55.969078	-126.642532	400	1,115	0.14	2,003
8	Stuart	08JE001	1929-2010	54.41663	-124.271149	14,235	900	0.04	1,933
8	Tsilcoh	08JE004	1975-2010	54.610115	-124.246124	438	835	NA	NA

Hydro-logic Zone	Watershed		Record Period	Station Co-ordinates		Drainage Area (km^2)	Median Basin Elev. (m asl)	Glacial Area (%)	Median Glacier Elev. (m asl)
	River	Hydrometric Station		Latitude	Longitude				
9	Compass	08EB006	1997-2010	55.458328	-127.8525	18.7	1,139	NA	NA
9	Nanika	08ED001	1950-2010	53.930199	-127.45163	720	1,248	NA	NA
9	Morice	08ED002	1961-2010	54.117374	-127.425888	1,889	1,200	4.67	1,775
9	Thautil	08ED004	1997-2010	54.256111	-127.34889	3.9	1,223	NA	NA
9	Bulkley	08EE004	1930-2010	54.618267	-126.899284	7,339	1,028	1.22	1,782
9	Telkwa	08EE020	1975-2010	54.605572	-127.487587	368	1,365	5.84	1,961
9	Skeena	08EF001	1928-2010	54.630326	-128.430445	42,266	1,086	0.84	1,910
9	Zymoetz	08EF005	1963-2010	54.477887	-128.251923	2,847	1,147	3.28	1,899
9	M3	08EF006	1997-2010	54.777779	-127.46806	9.5	1,331	NA	NA
9	Laventie	08JA015	1976-2010	53.6525	-127.53694	81.4	1,393	6.18	1,790
9	Whitesail	08JA029	1997-2010	53.66333	-126.98972	7.7	1,375	NA	NA
10	Exchamsiks	08EG012	1962-2010	54.361002	-129.312547	370	916	8.61	1,429
10	Clarence	08EG018	1997-2010	54.992222	-128.80611	4.7	925	NA	NA
10	Kemano	08FE003	1971-2010	53.564171	-127.953186	556	1,228	8.91	1,731
10	Kitimat	08FF001	1964-2010	54.049274	-128.689911	2,000	837	2.22	1,773
10	Hirsch	08FF002	1966-2010	54.063902	-128.60211	353	987	0.66	1,652
10	Little Wedeene	08FF003	1966-2010	54.135505	-128.690918	181	753	0.33	1,411
10	Renegade	08FF006	1997-2010	53.948891	-128.73611	2.9	532	NA	NA

Table 2: MIN_Q, ANN_7Q_MIN and ANN_30Q_MIN
Annual minimum daily average discharge, 7-day annual minimum and 30 day annual minimum discharge. Trend values in bold are significant at p<0.10.

Hydro-logic Zone	Watershed		MIN_Q				ANN_7Q_MIN				ANN_30Q_MIN			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)				(L/s/km^2/yr)			
1	Stikine - Wrangell	08CF003				0.091				0.088				0.077
1	Iskut - Johnson	08CG001	0.012	**0.032**	0.023	0.018	**0.026**	**0.032**	0.014	0.014	**0.032**	**0.042**	0.019	0.039
1	Surprise	08DA005		0.020	-0.015	0.005		0.027	-0.015	-0.030		0.034	-0.017	-0.041
1	Nass	08DB001	**0.046**	**0.068**	0.028	-0.011	**0.036**	**0.064**	0.011	-0.027	**0.037**	**0.066**	0.018	-0.013
1	Ansedagan	08DB013				-0.060				-0.053				-0.060
1	Ksedin	08DB014				0.056				0.056				**0.134**
1	Kispiox	08EB004		**0.030**	0.018	0.002		0.028	0.007	-0.003		**0.040**	0.011	0.012
2	Alsek - Bates	08AB001			0.009	0.008			0.012	0.036			0.007	0.026
2	Alsek - Yakutat	08AB002				0.021				-0.008				-0.015
2	Takhanne	08AC001				0.049				0.049				0.048
2	Tatshenshini	08AC002				0.053				0.034				0.029
2	Taku nr Juneau	08BB005				0.031				0.039				0.029
2	Tuya	08CD001	0.002	0.002	-0.005	0.007	0.004	0.000	-0.009	0.007	0.006	0.002	-0.009	0.012
2	Stikine - Telegraph	08CE001	**0.006**	**0.008**	**0.004**	0.021	**0.006**	**0.009**	0.004	0.022	**0.008**	**0.010**	**0.007**	0.016
2	Kelly	08DA012												
2	Atlin	09AA006	0.003	0.005	-0.017	**0.017**	0.004	0.004	-0.018	**0.021**	0.004	0.004	-0.018	**0.016**
2	Wheaton	09AA012	-0.001	0.006	0.010	0.022	0.003	0.006	0.009	0.015	0.003	0.006	0.008	0.020
2	Tutshi	09AA013		0.004	-0.007	0.014		0.005	-0.005	0.014		0.005	-0.003	0.022
2	Takhini	09AC001	0.003	0.005	0.002	0.019	0.002	0.005	0.002	0.018	0.002	0.004	0.001	0.018
2	Ibex	09AC007				0.011				0.011				0.011
2	Swift	09AE003	0.007	**0.019**	**0.020**	**0.085**	**0.009**	**0.020**	**0.021**	**0.102**	**0.009**	**0.020**	**0.021**	**0.097**
2	Cottonwood	10AC005		0.007	**0.026**	0.049		0.009	**0.027**	**0.051**		0.013	**0.032**	0.064
3	Liard - Upper Crossing	10AA001	**0.011**	**0.017**	**0.028**	**0.094**	**0.012**	**0.017**	**0.025**	**0.094**	**0.013**	**0.018**	**0.024**	**0.092**
3	Rancheria	10AA004				**0.061**				**0.054**				**0.059**
3	Big Creek	10AA005				**0.116**				**0.095**				**0.104**
3	Frances	10AB001	0.003	0.009	0.007	**0.051**	**0.006**	0.009	0.008	**0.049**	**0.007**	**0.010**	**0.010**	**0.055**
3	Liard - Lower Crossing	10BE001	**0.014**	**0.024**	**0.031**	**0.096**	**0.015**	**0.024**	**0.030**	**0.087**	**0.017**	**0.025**	**0.032**	**0.088**
8	Babine	08EC013		-0.011	0.010	-0.035		-0.003	**0.014**	-0.010		-0.002	**0.016**	-0.023
8	Goathorn	08EE008	-0.001	0.005	0.006	**-0.007**	0.000	0.005	0.005	-0.006	0.000	0.005	0.006	-0.010
8	Simpson	08EE012		**0.011**	**0.019**	**0.061**		0.015	0.017	**0.076**		**0.018**	**0.019**	**0.083**
8	Buck	08EE013		0.003	0.005	-0.014		0.001	0.003	-0.015		0.005	0.007	-0.019
8	Stellako	08JB002	0.000	0.004	**0.012**	-0.009	-0.006	0.003	**0.014**	-0.029	-0.007	0.003	**0.014**	-0.029
8	Nautley	08JB003	-0.005	0.000	**0.008**	-0.003	**-0.007**	-0.004	0.005	-0.007	-0.006	-0.001	**0.008**	-0.002
8	North Beach	08JB013												
8	Driftwood	08JD006			-0.002	**-0.076**			0.000	-0.066			0.002	**-0.052**
8	Stuart	08JE001	0.006	0.014	**0.027**	-0.047	0.008	**0.019**	**0.030**	-0.041	0.007	**0.020**	**0.030**	-0.037
8	Tsilcoh	08JE004			**0.014**	-0.003			**0.012**	-0.011			**0.016**	-0.009

Hydro-logic Zone	Watershed Stream	Hydrometric Station	MIN_Q 1961-	MIN_Q 1971-	MIN_Q 1981-	MIN_Q 1997-	ANN_7Q_MIN 1961-	ANN_7Q_MIN 1971-	ANN_7Q_MIN 1981-	ANN_7Q_MIN 1997-	ANN_30Q_MIN 1961-	ANN_30Q_MIN 1971-	ANN_30Q_MIN 1981-	ANN_30Q_MIN 1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)				(L/s/km^2/yr)			
9	Compass	08EB006				-0.029								
9	Nanika	08ED001		0.017	0.003	-0.076		0.027	-0.003	-0.067		0.025	-0.003	-0.068
9	Morice	08ED002	-0.020	0.013	0.035	0.054	-0.021	0.012	0.029	0.048	-0.019	0.010	0.009	0.035
9	Thautil	08ED004												
9	Bulkley	08EE004	0.002	**0.022**	0.014	-0.017	0.001	**0.022**	0.010	-0.011	0.002	**0.024**	0.014	-0.012
9	Telkwa	08EE020			**0.037**	**0.063**			**0.022**	**0.051**			0.012	**0.050**
9	Skeena	08EF001	0.009	**0.017**	**0.017**	0.012	0.006	**0.016**	-0.002	0.004	0.003	0.016	-0.006	-0.001
9	Zymoetz	08EF005		0.015	0.028	0.098		0.008	0.006	0.075		0.016	0.004	0.054
9	M3	08EF006												
9	Laventie	08JA015			**0.041**	0.144			**0.043**	0.184			**0.051**	0.102
9	Whitesail	08JA029												
10	Exchamsiks	08EG012	0.037	0.014	-0.098	-0.149	**0.045**	0.058	-0.052	-0.170	**0.102**	**0.139**	0.031	-0.200
10	Clarence	08EG018												
10	Kemano	08FE003		0.038	0.000	**-0.162**		0.027	0.021	-0.039		0.058	0.029	0.040
10	Kitimat	08FF001		**0.108**	0.042	-0.257		**0.122**	**0.082**	-0.201		**0.180**	0.053	-0.334
10	Hirsch	08FF002		0.075	-0.109	**-0.245**		0.073	-0.003	**-0.281**		**0.162**	0.015	-0.247
10	Little Wedeene	08FF003		0.094	-0.083	-0.237		0.063	-0.027	-0.137		0.141	-0.023	-0.257
10	Renegade	08FF006				-0.377				-0.361				-0.773

Table 3: PULSE_DATE and DATE_CM

Date of freshet initiation and date of centre of hydrograph mass. Trend values in bold are significant at p<0.10.

Hydro-logic Zone	Watershed		PULSE_DATE				DATE_CM			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(days/yr)				(days/yr)			
1	Stikine - Wrangell	08CF003				-0.56				-1.00
1	Iskut - Johnson	08CG001	-0.11	-0.06	0.12	0.00	**-0.16**	**-0.20**	-0.13	0.00
1	Surprise	08DA005		-0.02	0.00	0.00		-0.13	0.00	0.50
1	Nass	08DB001	**-0.25**	-0.13	-0.07	-0.38	**-0.20**	**-0.22**	0.00	-0.22
1	Ansedagan	08DB013				-0.38				0.00
1	Ksedin	08DB014				0.33				0.08
1	Kispiox	08EB004		-0.25	-0.08	0.33		-0.25	0.00	-0.33
2	Alsek - Bates	08AB001			-0.22	**-0.83**			**-0.16**	0.00
2	Alsek - Yakutat	08AB002				0.00				0.00
2	Takhanne	08AC001				-0.20				0.00
2	Tatshenshini	08AC002				0.00				-0.29
2	Taku nr Juneau	08BB005				-0.10				-0.60
2	Tuya	08CD001	-0.06	0.00	0.00	-0.11	-0.08	-0.19	-0.14	-0.50
2	Stikine - Telegraph	08CE001	-0.09	0.00	0.00	0.00	**-0.13**	**-0.21**	-0.18	-0.71
2	Kelly	08DA012								
2	Atlin	09AA006	**-0.15**	-0.25	-0.13	-0.50	**-0.08**	**-0.08**	-0.07	-0.22
2	Wheaton	09AA012	-0.09	-0.22	-0.17	-1.60	**-0.20**	**-0.25**	-0.24	-1.00
2	Tutshi	09AA013		**-0.20**	0.00	-0.25		**-0.30**	**-0.33**	0.00
2	Takhini	09AC001	**-0.15**	**-0.30**	**-0.29**	-0.46	**-0.13**	**-0.22**	-0.15	0.00
2	Ibex	09AC007				-0.71				-1.21
2	Swift	09AE003	**-0.18**	-0.12	-0.12	**-1.06**	**-0.12**	-0.14	-0.11	-1.00
2	Cottonwood	10AC005		-0.11	-0.14	-0.40		**-0.24**	-0.19	0.00
3	Liard - Upper Crossing	10AA001	**-0.15**	-0.13	-0.07	-0.67	-0.07	-0.04	0.00	-0.60
3	Rancheria	10AA004				-0.50				0.38
3	Big Creek	10AA005				-0.83				-1.00
3	Frances	10AB001	-0.11	0.00	0.00	-0.33	-0.11	0.00	0.00	-1.08
3	Liard - Lower Crossing	10BE001	-0.07	-0.09	-0.18	**-1.00**	-0.06	-0.08	-0.06	-0.40
8	Babine	08EC013		-0.06	-0.06	-0.25		-0.22	-0.16	-0.38
8	Goathorn	08EE008	**-0.32**	-0.27	-0.23	0.00	**-0.17**	**-0.26**	0.00	-0.22
8	Simpson	08EE012		0.13	0.17	-0.14		-0.46	0.00	-0.75
8	Buck	08EE013		-0.16	0.00	0.00		0.00	0.14	-0.57
8	Stellako	08JB002	**-0.15**	**-0.21**	-0.21	-0.07	0.00	-0.19	-0.27	-0.45
8	Nautley	08JB003	**-0.20**	**-0.21**	-0.18	-0.08	-0.06	-0.20	-0.18	-0.50
8	North Beach	08JB013								
8	Driftwood	08JD006			-0.16	0.00			-0.11	**-0.94**
8	Stuart	08JE001	**-0.18**	-0.17	-0.13	0.00	**-0.17**	-0.26	-0.25	-0.40
8	Tsilcoh	08JE004			-0.13	0.33			-0.04	0.00

Hydro-logic Zone	Watershed		PULSE_DATE				DATE_CM			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(days/yr)				(days/yr)			
9	Compass	08EB006								
9	Nanika	08ED001		0.00	0.00	-0.10		-0.36	0.06	0.38
9	Morice	08ED002	-0.13	-0.06	0.00	-0.14	**-0.20**	**-0.23**	0.00	0.50
9	Thautil	08ED004								
9	Bulkley	08EE004	**-0.24**	-0.24	-0.20	-0.33	**-0.20**	**-0.23**	0.00	-0.17
9	Telkwa	08EE020			0.00	-0.13			-0.06	0.00
9	Skeena	08EF001	**-0.22**	-0.19	-0.17	0.17	**-0.21**	**-0.30**	-0.15	-0.63
9	Zymoetz	08EF005		-0.04	0.00	0.00		**-0.27**	0.00	0.11
9	M3	08EF006								
9	Laventie	08JA015			0.06	-0.50			-0.08	-0.40
9	Whitesail	08JA029				-0.55				-0.80
10	Exchamsiks	08EG012	-0.12	0.09	0.17	0.50	-0.09	-0.17	0.08	0.25
10	Clarence	08EG018								
10	Kemano	08FE003		0.11	0.29	0.50		-0.18	0.21	0.88
10	Kitimat	08FF001		-0.11	-0.14	-0.25		-0.23	0.18	0.00
10	Hirsch	08FF002		-0.10	-0.17	0.78		-0.21	0.22	0.55
10	Little Wedeene	08FF003		-0.04	0.00	0.05		-0.15	0.36	0.50
10	Renegade	08FF006								-2.54

Table 4: MED_Q and AVG_Q

Median annual discharge and mean annual discharge. Trend values in bold are significant at p<0.10.

Hydro-logic Zone	Watershed		MED_Q				AVG_Q			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)			
1	Stikine - Wrangell	08CF003				0.106				0.090
1	Iskut - Johnson	08CG001	0.035	0.102	0.023	0.152	0.054	0.129	0.082	0.197
1	Surprise	08DA005		0.253	0.270	0.000		**0.358**	**0.310**	0.186
1	Nass	08DB001	0.055	0.143	0.161	-0.040	-0.010	0.054	0.049	-0.005
1	Ansedagan	08DB013				-0.152				-0.085
1	Ksedin	08DB014				-0.039				0.220
1	Kispiox	08EB004		0.058	0.105	-0.206		0.043	0.084	-0.274
2	Alsek - Bates	08AB001			**0.071**	**0.119**			**0.121**	0.128
2	Alsek - Yakutat	08AB002				0.328				**0.614**
2	Takhanne	08AC001				-0.055				0.080
2	Tatshenshini	08AC002				0.242				0.117
2	Taku nr Juneau	08BB005				**0.331**				0.365
2	Tuya	08CD001	-0.006	-0.003	0.002	0.075	-0.015	-0.021	0.048	0.290
2	Stikine - Telegraph	08CE001	0.000	-0.017	-0.047	**-0.117**	0.011	0.002	-0.021	0.110
2	Kelly	08DA012								
2	Atlin	09AA006	0.002	0.013	-0.035	0.048	**0.036**	0.044	0.031	0.042
2	Wheaton	09AA012	0.003	0.007	-0.026	**0.098**	0.001	0.002	-0.033	0.225
2	Tutshi	09AA013		-0.011	-0.041	0.041		-0.009	-0.049	0.146
2	Takhini	09AC001	0.004	0.006	0.000	0.011	-0.006	0.000	0.000	0.044
2	Ibex	09AC007				0.013				-0.003
2	Swift	09AE003	0.019	0.025	0.070	**0.367**	-0.020	0.023	0.096	**0.656**
2	Cottonwood	10AC005		0.043	0.039	-0.029		0.038	**0.116**	0.391
3	Liard - Upper Crossing	10AA001	**0.037**	**0.054**	**0.070**	**0.188**	-0.015	0.014	0.063	0.276
3	Rancheria	10AA004				**0.163**				**0.465**
3	Big Creek	10AA005				**0.169**				**0.243**
3	Frances	10AB001	**0.042**	**0.061**	**0.085**	0.096	-0.010	0.005	0.069	0.274
3	Liard - Lower Crossing	10BE001	**0.030**	**0.055**	**0.052**	**0.115**	-0.017	0.022	0.050	**0.245**
8	Babine	08EC013		0.001	**0.036**	-0.124		-0.001	**0.034**	-0.014
8	Goathorn	08EE008	-0.016	-0.024	0.035	0.001	-0.029	-0.011	-0.031	-0.091
8	Simpson	08EE012		-0.040	0.042	0.069		0.003	-0.007	-0.037
8	Buck	08EE013		0.009	0.018	-0.029		-0.001	**0.035**	-0.151
8	Stellako	08JB002	**-0.016**	0.000	**0.031**	0.018	**-0.032**	-0.012	**0.040**	-0.053
8	Nautley	08JB003	**-0.012**	0.006	**0.028**	0.009	-0.021	-0.004	**0.051**	0.012
8	North Beach	08JB013								
8	Driftwood	08JD006			0.064	-0.290			**0.089**	-0.017
8	Stuart	08JE001	-0.016	0.001	0.056	-0.141	-0.006	0.013	**0.049**	-0.154
8	Tsilcoh	08JE004			**0.027**	0.002			**0.041**	-0.034

Hydro-logic Zone	Watershed		MED_Q				AVG_Q			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)			
9	Compass	08EB006								
9	Nanika	08ED001		-0.012	0.107	0.250		-0.008	0.030	-0.142
9	Morice	08ED002	0.043	0.066	0.159	0.029	-0.047	0.028	0.083	-0.223
9	Thautil	08ED004								
9	Bulkley	08EE004	-0.032	-0.004	0.068	0.043	-0.032	0.009	**0.063**	-0.041
9	Telkwa	08EE020			0.149	0.024			-0.008	-0.130
9	Skeena	08EF001	0.002	0.038	**0.072**	-0.118	-0.029	0.015	0.021	-0.201
9	Zymoetz	08EF005		0.106	0.193	0.248		-0.010	0.065	-0.080
9	M3	08EF006								
9	Laventie	08JA015			0.307	0.193			**0.259**	-0.469
9	Whitesail	08JA029								
10	Exchamsiks	08EG012	0.060	0.133	-0.054	0.927	0.130	0.178	0.293	0.545
10	Clarence	08EG018								
10	Kemano	08FE003		0.071	0.120	0.225		0.246	0.504	-0.435
10	Kitimat	08FF001		0.031	0.204	-0.029		0.073	**0.278**	-0.483
10	Hirsch	08FF002		0.109	0.110	-0.142		0.043	0.145	-0.584
10	Little Wedeene	08FF003		0.199	0.317	0.111		0.268	0.613	-0.091
10	Renegade	08FF006				**-1.601**				0.259

Table 5: MED_WAT_YR and AVG_WAT_YR

Median water year (Oct. 1 – Sept. 30) discharge and mean water year discharge. Trend values in bold are significant at p<0.10.

Hydro-logic Zone	Watershed		MED_WAT_YR				AVG_WAT_YR			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)			
1	Stikine - Wrangell	08CF003				0.197				-0.035
1	Iskut - Johnson	08CG001	-0.030	0.055	-0.149	0.246	0.085	0.117	0.005	0.244
1	Surprise	08DA005		0.110	-0.057	-0.137		**0.376**	**0.306**	0.058
1	Nass	08DB001	0.055	0.128	-0.035	-0.261	-0.018	0.078	0.084	0.181
1	Ansedagan	08DB013				-0.019				0.094
1	Ksedin	08DB014				-0.323				0.270
1	Kispiox	08EB004		0.049	0.098	-0.277		0.006	0.068	-0.105
2	Alsek - Bates	08AB001			0.063	**0.156**			**0.130**	0.138
2	Alsek - Yakutat	08AB002				0.225				**0.465**
2	Takhanne	08AC001				0.087				0.076
2	Tatshenshini	08AC002				**0.295**				0.137
2	Taku nr Juneau	08BB005				0.340				0.347
2	Tuya	08CD001	-0.004	-0.013	-0.011	0.059	0.010	-0.019	0.034	**0.340**
2	Stikine - Telegraph	08CE001	-0.003	-0.024	-0.076	-0.006	0.015	0.002	-0.030	0.094
2	Kelly	08DA012								
2	Atlin	09AA006	0.018	0.027	-0.016	0.175	0.037	0.048	0.020	0.132
2	Wheaton	09AA012	0.010	0.013	-0.025	**0.154**	0.000	0.010	-0.032	0.291
2	Tutshi	09AA013		-0.016	-0.086	0.101		-0.026	-0.054	0.168
2	Takhini	09AC001	0.008	0.012	-0.001	0.058	-0.004	0.006	0.009	0.033
2	Ibex	09AC007				0.021				-0.026
2	Swift	09AE003	0.010	0.026	**0.064**	**0.340**	-0.014	0.030	**0.095**	0.561
2	Cottonwood	10AC005		0.036	0.029	0.172		0.034	**0.109**	0.459
3	Liard - Upper Crossing	10AA001	**0.039**	**0.050**	**0.069**	**0.235**	-0.016	0.009	0.064	0.300
3	Rancheria	10AA004				0.128				0.409
3	Big Creek	10AA005				**0.131**				**0.202**
3	Frances	10AB001	**0.038**	**0.068**	**0.077**	**0.234**	0.008	0.005	0.066	0.239
3	Liard - Lower Crossing	10BE001	**0.032**	**0.046**	0.042	**0.180**	-0.003	0.015	0.046	**0.280**
8	Babine	08EC013		-0.010	**0.035**	-0.065		0.007	**0.034**	-0.067
8	Goathorn	08EE008	-0.010	-0.020	-0.014	-0.125	-0.018	-0.002	-0.032	-0.081
8	Simpson	08EE012		-0.091	-0.015	-0.022		-0.010	-0.016	0.007
8	Buck	08EE013		0.019	**0.026**	-0.026		4.848	**0.038**	-0.088
8	Stellako	08JB002	**-0.014**	-0.007	0.006	-0.017	-0.030	-0.010	**0.047**	0.035
8	Nautley	08JB003	-0.008	0.006	**0.019**	0.000	-0.018	0.010	**0.061**	0.024
8	North Beach	08JB013								
8	Driftwood	08JD006			0.024	**-0.326**			0.076	0.075
8	Stuart	08JE001	-0.010	0.004	**0.067**	-0.141	-0.008	0.014	**0.062**	-0.115
8	Tsilcoh	08JE004			**0.022**	-0.005			**0.037**	-0.052

Hydro-logic Zone	Watershed		MED_WAT_YR				AVG_WAT_YR			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)			
9	Compass	08EB006								
9	Nanika	08ED001		0.013	0.031	-0.013		0.036	0.043	-0.142
9	Morice	08ED002	-0.015	0.073	-0.003	-0.141	-0.055	0.019	0.042	-0.336
9	Thautil	08ED004								
9	Bulkley	08EE004	**-0.046**	-0.017	-0.014	-0.139	-0.035	0.002	0.048	-0.065
9	Telkwa	08EE020			0.000	-0.116			-0.009	-0.106
9	Skeena	08EF001	-0.010	0.024	0.012	-0.156	-0.031	0.003	0.010	-0.163
9	Zymoetz	08EF005		0.095	0.070	0.197		-0.035	0.027	-0.091
9	M3	08EF006								
9	Laventie	08JA015			0.158	-0.031			**0.259**	-0.459
9	Whitesail	08JA029								
10	Exchamsiks	08EG012	0.165	0.239	-0.011	1.352	0.108	0.239	0.311	1.547
10	Clarence	08EG018								
10	Kemano	08FE003		0.174	0.150	0.559		0.257	0.344	-0.234
10	Kitimat	08FF001		0.017	0.165	0.000		0.102	0.220	-0.249
10	Hirsch	08FF002		0.116	0.103	0.113		0.071	0.075	-0.320
10	Little Wedeene	08FF003		**0.256**	**0.351**	0.277		0.259	0.287	-0.703
10	Renegade	08FF006				**-2.267**				0.547

Table 6: JUN-SEP_7Q_MIN and JUN-SEP_30Q_MIN

Annual minimum June-September 7-day average discharge and annual minimum June-September 30-day average discharge. Trend values in bold are significant at p<0.10.

Hydro-logic Zone	Watershed		JUN-SEP_7Q_MIN				JUN-SEP_30Q_MIN			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)			
1	Stikine - Wrangell	08CF003				-0.347				-0.069
1	Iskut - Johnson	08CG001	0.102	0.193	0.084	-0.586	0.196	**0.292**	0.322	0.283
1	Surprise	08DA005		0.470	**0.757**	0.048		**0.634**	**0.954**	1.884
1	Nass	08DB001	-0.025	0.086	0.240	-0.538	0.035	0.125	0.222	-0.062
1	Ansedagan	08DB013				0.222				0.031
1	Ksedin	08DB014				0.101				0.337
1	Kispiox	08EB004		-0.032	0.132	-0.448		0.000	0.190	**-0.388**
2	Alsek - Bates	08AB001			0.025	0.034			0.045	**0.177**
2	Alsek - Yakutat	08AB002				-0.293				0.243
2	Takhanne	08AC001				0.034				0.232
2	Tatshenshini	08AC002				0.233				0.265
2	Taku nr Juneau	08BB005				0.359				0.282
2	Tuya	08CD001	0.008	0.011	0.060	0.088	0.020	0.021	0.074	0.133
2	Stikine - Telegraph	08CE001	0.005	-0.003	0.039	-0.040	0.021	0.008	0.048	-0.059
2	Kelly	08DA012				-0.122				-0.307
2	Atlin	09AA006	0.022	0.036	0.006	**0.226**	0.028	0.049	0.034	**0.237**
2	Wheaton	09AA012	-0.013	0.017	-0.010	0.209	-0.023	0.003	-0.040	0.147
2	Tutshi	09AA013		-0.012	-0.036	0.226		-0.012	-0.042	**0.305**
2	Takhini	09AC001	0.039	**0.082**	0.049	**0.264**	**0.049**	**0.108**	**0.093**	**0.290**
2	Ibex	09AC007				0.013				-0.010
2	Swift	09AE003	-0.036	-0.010	0.065	0.137	-0.025	0.019	0.096	0.299
2	Cottonwood	10AC005		0.029	0.149	0.233		0.025	0.140	0.140
3	Liard - Upper Crossing	10AA001	0.010	0.054	0.100	0.188	0.007	0.050	0.088	0.291
3	Rancheria	10AA004				0.147				0.253
3	Big Creek	10AA005				**0.127**				0.130
3	Frances	10AB001	0.022	0.062	0.078	0.077	0.021	**0.075**	0.108	0.246
3	Liard - Lower Crossing	10BE001	0.022	0.049	0.086	0.185	0.005	0.048	0.084	**0.364**
8	Babine	08EC013		-0.023	0.011	-0.087		-0.023	0.018	-0.082
8	Goathorn	08EE008	-0.025	-0.049	0.022	-0.070	-0.037	-0.075	0.007	-0.120
8	Simpson	08EE012		-0.072	0.067	-0.157		-0.122	0.051	-0.010
8	Buck	08EE013		-0.003	0.006	-0.015		-0.005	0.010	-0.023
8	Stellako	08JB002	**-0.019**	**-0.022**	-0.005	-0.022	**-0.020**	**-0.021**	-0.004	-0.022
8	Nautley	08JB003	**-0.009**	-0.008	0.008	-0.027	**-0.012**	-0.010	0.010	-0.012
8	North Beach	08JB013				0.048				0.038
8	Driftwood	08JD006			0.056	-0.160			0.069	-0.266
8	Stuart	08JE001	-0.023	-0.032	0.012	-0.189	-0.025	-0.026	0.007	-0.201
8	Tsilcoh	08JE004			**0.012**	0.003			0.016	-0.015

Hydro-logic Zone	Watershed		JUN-SEP_7Q_MIN				JUN-SEP_30Q_MIN			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)			
9	Compass	08EB006				-0.294				**-0.403**
9	Nanika	08ED001		-0.060	0.131	-0.060		-0.093	0.048	-0.305
9	Morice	08ED002	-0.076	-0.043	0.108	-0.361	**-0.140**	-0.093	0.037	-0.200
9	Thautil	08ED004				-0.126				-0.236
9	Bulkley	08EE004	-0.033	-0.027	0.050	-0.024	**-0.061**	-0.038	0.020	-0.077
9	Telkwa	08EE020			0.062	-0.416			0.048	0.096
9	Skeena	08EF001	**-0.058**	-0.035	0.029	-0.230	-0.055	-0.038	0.004	-0.272
9	Zymoetz	08EF005		0.012	**0.211**	-0.005		-0.036	0.102	-0.093
9	M3	08EF006				-0.052				-0.059
9	Laventie	08JA015			0.199	**-0.765**			0.333	-0.561
9	Whitesail	08JA029				0.064				0.089
10	Exchamsiks	08EG012	-0.236	0.035	0.537	2.994	-0.077	0.087	**0.616**	2.047
10	Clarence	08EG018				-0.241				-0.487
10	Kemano	08FE003		-0.033	**0.502**	0.644		0.065	0.866	-0.198
10	Kitimat	08FF001		-0.039	**0.316**	-0.099		-0.141	0.301	-0.587
10	Hirsch	08FF002		-0.063	0.200	-0.053		-0.143	0.235	-0.726
10	Little Wedeene	08FF003		-0.099	0.310	**-1.373**		-0.142	0.407	-1.668
10	Renegade	08FF006				-0.522				-0.750

Table 7: MED_JAN, MED_FEB and MED_MAR

Median discharge for January, February and March. Trend values in bold are significant at p<0.10.

Hydro-logic Zone	Watershed Stream	Hydrometric Station	MED_JAN 1961-	MED_JAN 1971-	MED_JAN 1981-	MED_JAN 1997-	MED_FEB 1961-	MED_FEB 1971-	MED_FEB 1981-	MED_FEB 1997-	MED_MAR 1961-	MED_MAR 1971-	MED_MAR 1981-	MED_MAR 1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)				(L/s/km^2/yr)			
1	Stikine - Wrangell	08CF003				0.000				0.000				0.090
1	Iskut - Johnson	08CG001	**0.051**	0.071	0.012	0.084	**0.033**	0.056	0.009	0.090	0.019	0.032	-0.011	0.088
1	Surprise	08DA005		0.058	-0.013	0.042		0.041	-0.023	0.041		0.035	-0.036	0.020
1	Nass	08DB001	0.035	**0.118**	**0.055**	0.118	0.017	**0.079**	-0.002	0.011	**0.059**	**0.087**	-0.028	0.080
1	Ansedagan	08DB013				-0.132				0.068				0.299
1	Ksedin	08DB014				0.128				**0.196**				**0.075**
1	Kispiox	08EB004		**0.048**	0.040	0.089		0.046	0.021	0.107		0.059	0.011	0.095
2	Alsek - Bates	08AB001			0.016	0.027			0.007	0.032			-0.007	0.013
2	Alsek - Yakutat	08AB002				-0.040				-0.041				0.054
2	Takhanne	08AC001				0.048				0.038				0.037
2	Tatshenshini	08AC002				0.039				0.078				0.048
2	Taku nr Juneau	08BB005				0.042				-0.002				0.038
2	Tuya	08CD001	0.008	0.002	-0.007	0.005	0.010	0.005	0.001	0.052	0.008	0.001	-0.005	0.014
2	Stikine - Telegraph	08CE001	**0.012**	**0.014**	-0.002	**0.022**	**0.011**	**0.012**	**0.007**	**0.027**	**0.008**	**0.010**	0.005	0.017
2	Kelly	08DA012												
2	Atlin	09AA006	-0.005	-0.005	-0.039	0.044	-0.006	-0.003	-0.033	0.051	-0.004	-0.003	-0.033	0.035
2	Wheaton	09AA012	0.001	0.002	0.002	0.023	0.003	0.006	0.010	0.017	0.001	0.003	0.008	0.019
2	Tutshi	09AA013		0.010	-0.015	-0.003		0.011	0.003	0.053		0.007	-0.002	0.033
2	Takhini	09AC001	0.006	0.008	0.000	0.018	0.001	0.004	-0.003	0.021	0.000	0.003	-0.004	0.017
2	Ibex	09AC007				0.029				0.020				0.010
2	Swift	09AE003	0.011	**0.027**	**0.034**	**0.125**	0.009	**0.022**	**0.026**	**0.107**	0.007	**0.020**	**0.024**	**0.089**
2	Cottonwood	10AC005		0.006	0.011	0.015		0.011	**0.032**	0.092		0.010	**0.018**	0.076
3	Liard - Upper Crossing	10AA001	0.010	**0.023**	**0.025**	**0.110**	**0.014**	**0.022**	**0.034**	**0.099**	**0.013**	**0.019**	**0.028**	**0.099**
3	Rancheria	10AA004				**0.114**				**0.081**				**0.065**
3	Big Creek	10AA005				**0.124**				**0.112**				0.064
3	Frances	10AB001	**0.016**	**0.025**	**0.022**	0.092	**0.012**	**0.017**	**0.018**	**0.074**	**0.006**	**0.010**	0.011	**0.068**
3	Liard - Lower Crossing	10BE001	**0.020**	**0.031**	**0.038**	**0.128**	**0.018**	**0.031**	**0.042**	**0.096**	**0.019**	**0.029**	**0.036**	**0.104**
8	Babine	08EC013		0.001	**0.026**	-0.031		0.000	**0.022**	-0.047		0.001	**0.017**	-0.050
8	Goathorn	08EE008	0.002	0.014	**0.016**	**0.040**	0.000	0.011	**0.013**	0.010	-0.004	0.004	0.000	**-0.033**
8	Simpson	08EE012		**0.033**	**0.035**	**0.084**		0.015	0.018	**0.104**		0.019	0.014	**0.130**
8	Buck	08EE013		0.013	**0.013**	0.023		0.003	0.001	-0.010		-0.001	-0.007	-0.021
8	Stellako	08JB002	-0.006	0.006	**0.016**	-0.011	-0.006	0.006	**0.015**	-0.015	-0.009	0.002	**0.012**	-0.026
8	Nautley	08JB003	-0.007	0.004	**0.016**	0.005	-0.009	-0.001	**0.013**	0.004	-0.006	-0.003	0.010	0.001
8	North Beach	08JB013												
8	Driftwood	08JD006			0.012	**-0.061**			**0.015**	-0.003			0.006	-0.057
8	Stuart	08JE001	-0.006	0.016	**0.053**	-0.152	0.002	0.020	**0.044**	-0.100	0.006	**0.019**	**0.031**	-0.054
8	Tsilcoh	08JE004			**0.030**	0.007			**0.020**	0.001			0.014	0.003

Hydro-logic Zone	Watershed Stream	Hydrometric Station	MED_JAN 1961-	MED_JAN 1971-	MED_JAN 1981-	MED_JAN 1997-	MED_FEB 1961-	MED_FEB 1971-	MED_FEB 1981-	MED_FEB 1997-	MED_MAR 1961-	MED_MAR 1971-	MED_MAR 1981-	MED_MAR 1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)				(L/s/km^2/yr)			
9	Compass	08EB006												
9	Nanika	08ED001		**0.065**	**0.070**	0.038		0.033	0.000	-0.028		0.019	-0.043	-0.046
9	Morice	08ED002	-0.008	0.042	0.039	0.000	-0.038	0.005	-0.028	-0.012	-0.030	-0.002	-0.004	0.026
9	Thautil	08ED004												
9	Bulkley	08EE004	0.004	**0.047**	**0.045**	0.068	-0.012	**0.025**	0.010	0.025	0.001	0.021	0.001	-0.007
9	Telkwa	08EE020			0.035	0.018			0.020	**0.088**			-0.006	0.014
9	Skeena	08EF001	-0.006	0.019	0.014	0.051	-0.005	0.020	-0.006	0.047	0.007	0.015	-0.018	-0.003
9	Zymoetz	08EF005		**0.068**	0.046	0.029		0.019	0.003	0.077		0.002	-0.027	0.094
9	M3	08EF006												
9	Laventie	08JA015			0.071	0.246			**0.063**	0.048			0.026	0.123
9	Whitesail	08JA029												
10	Exchamsiks	08EG012	**0.243**	**0.280**	-0.143	0.000	**0.198**	0.250	-0.052	0.208	**0.284**	0.326	-0.135	0.610
10	Clarence	08EG018												
10	Kemano	08FE003		0.166	-0.024	0.074		0.140	-0.041	0.184		0.140	-0.073	0.595
10	Kitimat	08FF001		**0.282**	-0.050	0.106		0.139	-0.272	0.139		0.233	0.029	0.558
10	Hirsch	08FF002		**0.270**	-0.073	-0.028		0.183	-0.039	0.126		0.179	-0.077	0.051
10	Little Wedeene	08FF003		**0.390**	0.000	0.895		0.210	-0.088	**0.859**		0.441	-0.306	0.665
10	Renegade	08FF006				2.195				-0.370				0.058

Table 8: MED_APR, MED_MAY and MED_JUN
Median discharge for April, May and June. Trend values in bold are significant at p<0.10.

Hydro-logic Zone	Watershed		MED_APR				MED_MAY				MED_JUN			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)				(L/s/km^2/yr)			
1	Stikine - Wrangell	08CF003				0.043				0.179				0.731
1	Iskut - Johnson	08CG001	-0.001	0.047	-0.072	0.047	**0.297**	0.304	0.277	0.561	**0.421**	**0.689**	0.557	0.468
1	Surprise	08DA005		0.163	-0.061	0.036		**1.081**	0.457	-0.914		**1.271**	0.930	-2.605
1	Nass	08DB001	0.103	0.156	-0.012	0.079	**0.393**	0.169	-0.036	0.344	-0.087	0.205	0.450	0.390
1	Ansedagan	08DB013				-0.495				0.285				-1.166
1	Ksedin	08DB014				0.062				0.140				2.285
1	Kispiox	08EB004		0.190	0.074	-0.206		-0.114	-0.207	-0.207		-0.290	0.013	0.013
2	Alsek - Bates	08AB001			0.029	**0.148**			**0.165**	0.162			**0.495**	0.114
2	Alsek - Yakutat	08AB002				0.008				-0.087				0.714
2	Takhanne	08AC001				0.064				0.069				-1.102
2	Tatshenshini	08AC002				0.035				-0.034				0.585
2	Taku nr Juneau	08BB005				0.019				0.356				0.870
2	Tuya	08CD001	0.007	0.008	-0.016	0.000	0.212	0.045	-0.099	-0.642	-0.282	**-0.371**	-0.239	-0.032
2	Stikine - Telegraph	08CE001	0.008	**0.017**	0.000	0.011	0.129	0.024	-0.076	-0.069	-0.035	0.035	-0.012	0.605
2	Kelly	08DA012				-0.845				-0.571				-1.245
2	Atlin	09AA006	0.000	0.000	-0.020	**0.004**	0.016	0.016	-0.007	0.077	0.047	0.091	0.079	**0.429**
2	Wheaton	09AA012	**0.008**	**0.008**	**0.018**	**0.028**	0.000	0.018	-0.003	0.130	**0.114**	**0.226**	0.165	-0.165
2	Tutshi	09AA013		0.004	-0.003	0.023		0.054	-0.055	0.208		0.382	0.217	0.494
2	Takhini	09AC001	0.002	**0.005**	0.005	0.024	0.007	0.013	0.019	0.036	**0.116**	**0.234**	**0.238**	0.319
2	Ibex	09AC007				**0.022**				0.159				-0.007
2	Swift	09AE003	**0.015**	**0.023**	0.017	**0.068**	0.083	0.073	0.117	0.382	-0.192	-0.006	0.429	1.442
2	Cottonwood	10AC005		0.014	0.006	0.057		0.289	0.247	0.190		-0.029	0.483	1.365
3	Liard - Upper Crossing	10AA001	**0.013**	**0.017**	**0.031**	**0.106**	0.089	0.042	0.083	0.241	-0.169	-0.080	0.252	1.207
3	Rancheria	10AA004				**0.073**				0.307				1.125
3	Big Creek	10AA005				0.759				0.612				0.025
3	Frances	10AB001	**0.008**	**0.012**	0.009	0.050	0.081	0.038	0.091	0.275	-0.016	-0.037	0.399	**1.137**
3	Liard - Lower Crossing	10BE001	**0.017**	**0.025**	**0.026**	**0.081**	0.036	0.031	0.092	0.415	-0.131	-0.034	0.111	0.815
8	Babine	08EC013		0.009	0.016	-0.044		0.026	0.019	-0.198		0.000	0.057	0.107
8	Goathorn	08EE008	0.029	0.049	0.003	-0.126	0.039	-0.033	-0.144	0.033	-0.049	-0.068	-0.051	-0.401
8	Simpson	08EE012		-0.027	0.000	-0.101		0.186	-0.188	0.615		0.179	0.109	-0.246
8	Buck	08EE013		0.043	-0.041	-0.060		-0.029	0.177	-0.076		-0.199	-0.010	-0.407
8	Stellako	08JB002	-0.005	0.006	0.012	-0.018	-0.008	0.013	0.158	-0.075	**-0.126**	-0.061	**0.122**	0.105
8	Nautley	08JB003	-0.001	0.010	0.022	0.018	-0.001	0.002	0.232	0.173	**-0.104**	-0.062	0.057	0.052
8	North Beach	08JB013								1.233				**-0.652**
8	Driftwood	08JD006			0.030	0.030			0.000	0.787			0.125	-0.999
8	Stuart	08JE001	0.011	**0.026**	0.027	-0.027	0.048	0.062	**0.109**	-0.053	0.019	0.073	**0.168**	0.035
8	Tsilcoh	08JE004			0.158	0.055			0.067	0.042			0.036	-0.228

Hydro-logic Zone	Watershed		MED_APR				MED_MAY				MED_JUN			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)				(L/s/km^2/yr)			
9	Compass	08EB006				-0.266				0.055				0.675
9	Nanika	08ED001		0.037	-0.010	-0.081		0.069	-0.513	0.278		0.289	0.106	-0.952
9	Morice	08ED002	-0.004	0.022	0.005	0.042	0.429	0.167	0.083	-0.496	0.165	**0.402**	0.265	-1.271
9	Thautil	08ED004				0.102				2.684				1.723
9	Bulkley	08EE004	0.034	0.076	0.015	0.019	0.110	-0.006	0.082	-0.727	-0.126	-0.082	0.037	0.027
9	Telkwa	08EE020			0.023	-0.090			0.155	0.737			0.330	0.271
9	Skeena	08EF001	0.035	0.065	0.018	-0.041	**0.224**	0.058	0.000	0.039	-0.142	-0.053	0.039	-0.375
9	Zymoetz	08EF005		0.149	-0.011	-0.016		0.272	0.092	0.552		-0.513	-0.105	-1.366
9	M3	08EF006				0.170				**2.291**				1.112
9	Laventie	08JA015			0.035	0.080			0.530	2.158			0.965	-1.638
9	Whitesail	08JA029				0.040				**1.353**				0.150
10	Exchamsiks	08EG012	0.465	0.460	0.045	0.180	**0.705**	**0.625**	0.219	-1.454	**-0.515**	-0.326	0.483	-0.541
10	Clarence	08EG018				0.674				1.628				4.088
10	Kemano	08FE003		0.096	-0.090	-0.040		0.456	-0.221	-0.944		0.509	0.849	-3.941
10	Kitimat	08FF001		0.017	0.029	-0.121		-0.016	0.029	0.000		-0.374	0.197	-1.300
10	Hirsch	08FF002		0.180	-0.150	-0.560		0.153	0.252	-0.236		-0.702	-0.033	-1.559
10	Little Wedeene	08FF003		0.194	-0.173	-0.519		0.277	0.020	0.609		-0.767	0.497	-1.939
10	Renegade	08FF006				0.544				-1.740				-2.284

Table 9: MED_JUL, MED_AUG and MED_SEP
Median discharge for July, August and September. Trend values in bold are significant at p<0.10.

Hydro-logic Zone	Watershed		MED_JUL				MED_AUG				MED_SEP			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)				(L/s/km^2/yr)			
1	Stikine - Wrangell	08CF003				-0.492				-0.262				-0.180
1	Iskut - Johnson	08CG001	-0.156	-0.111	-0.463	0.421	-0.145	-0.185	0.040	0.316	0.178	**0.263**	0.255	-0.079
1	Surprise	08DA005		0.481	0.432	0.000		**0.785**	**1.246**	1.942		**0.762**	**1.018**	2.389
1	Nass	08DB001	**-0.384**	-0.367	-0.283	-1.015	**-0.219**	-0.223	0.040	-0.619	0.073	0.195	**0.263**	-0.683
1	Ansedagan	08DB013				-0.634				0.176				-0.481
1	Ksedin	08DB014				0.318				-0.044				-0.348
1	Kispiox	08EB004		-0.272	-0.019	-0.304		-0.130	0.107	-0.276		0.064	0.284	-0.443
2	Alsek - Bates	08AB001			0.241	0.000			**0.331**	0.246			0.092	**0.520**
2	Alsek - Yakutat	08AB002				**1.071**				**1.998**				0.079
2	Takhanne	08AC001				0.491				0.099				0.043
2	Tatshenshini	08AC002				0.322				0.143				0.380
2	Taku nr Juneau	08BB005				-0.356				0.223				**0.759**
2	Tuya	08CD001	0.012	-0.015	0.078	0.422	0.006	0.005	0.063	0.134	-0.021	-0.017	0.018	0.016
2	Stikine - Telegraph	08CE001	-0.035	-0.100	-0.027	0.069	**-0.075**	**-0.112**	-0.053	-0.094	0.026	0.007	-0.005	-0.047
2	Kelly	08DA012				-0.233				-0.187				**-0.662**
2	Atlin	09AA006	**0.101**	**0.146**	0.146	0.243	**0.157**	**0.175**	**0.205**	**0.347**	**0.079**	**0.110**	**0.161**	**0.438**
2	Wheaton	09AA012	-0.095	-0.125	-0.093	0.067	-0.083	-0.110	-0.057	0.227	-0.048	-0.025	-0.036	0.175
2	Tutshi	09AA013		**-0.364**	-0.362	0.145		**-0.235**	-0.228	-0.135		**-0.063**	-0.134	0.203
2	Takhini	09AC001	-0.038	-0.045	-0.047	-0.163	**-0.080**	**-0.125**	-0.148	-0.175	-0.035	-0.039	-0.022	**0.140**
2	Ibex	09AC007				-0.179				**-0.057**				0.070
2	Swift	09AE003	-0.157	-0.173	-0.037	0.716	-0.064	-0.062	0.046	0.267	-0.058	0.033	0.088	0.628
2	Cottonwood	10AC005		-0.268	0.141	0.772		-0.114	0.067	0.343		-0.003	0.112	0.296
3	Liard - Upper Crossing	10AA001	**-0.124**	-0.101	-0.022	0.031	**-0.063**	-0.059	0.053	-0.070	-0.004	0.060	**0.095**	0.297
3	Rancheria	10AA004				0.466				0.147				0.366
3	Big Creek	10AA005				0.076				0.159				**0.004**
3	Frances	10AB001	-0.132	-0.111	-0.030	0.000	-0.068	-0.061	0.026	-0.412	0.035	**0.100**	0.066	0.144
3	Liard - Lower Crossing	10BE001	-0.051	-0.048	0.044	0.016	-0.034	-0.022	0.029	0.024	0.000	0.047	0.062	0.335
8	Babine	08EC013		-0.040	-0.003	-0.271		-0.015	-0.001	-0.076		-0.022	0.010	-0.099
8	Goathorn	08EE008	-0.091	-0.134	-0.164	-0.526	**-0.079**	-0.119	-0.044	**-0.247**	-0.026	-0.066	0.033	-0.048
8	Simpson	08EE012		-0.286	-0.091	-1.173		-0.275	-0.066	-0.587		-0.123	0.037	0.064
8	Buck	08EE013		-0.026	-0.022	-0.177		-0.006	-0.005	-0.007		0.004	0.022	-0.016
8	Stellako	08JB002	**-0.080**	-0.071	-0.005	-0.012	**-0.048**	**-0.053**	-0.027	-0.006	**-0.027**	**-0.032**	-0.014	-0.027
8	Nautley	08JB003	**-0.061**	-0.060	-0.007	-0.096	**-0.028**	-0.024	0.001	-0.030	**-0.014**	-0.010	0.006	-0.010
8	North Beach	08JB013				-0.024				0.039				-0.045
8	Driftwood	08JD006			-0.125	-0.888			0.062	-0.302			0.169	-0.229
8	Stuart	08JE001	-0.043	-0.047	0.042	-0.316	-0.033	-0.042	0.000	-0.249	-0.026	-0.033	0.009	-0.176
8	Tsilcoh	08JE004			0.011	-0.028			**0.018**	0.003			0.022	0.000

Hydro-logic Zone	Watershed		MED_JUL				MED_AUG				MED_SEP			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)				(L/s/km^2/yr)			
9	Compass	08EB006				-0.074				-0.383				-0.203
9	Nanika	08ED001		-0.550	-0.430	-0.139		**-0.413**	-0.217	-0.660		-0.069	0.075	-0.200
9	Morice	08ED002	**-0.303**	-0.265	-0.106	-0.750	**-0.345**	**-0.440**	-0.242	-0.331	-0.122	-0.091	0.060	-0.245
9	Thautil	08ED004				**-1.570**				-0.255				-0.425
9	Bulkley	08EE004	**-0.165**	-0.191	-0.045	-0.290	**-0.117**	**-0.145**	-0.068	-0.204	-0.044	-0.026	0.030	-0.115
9	Telkwa	08EE020			-0.373	-1.574			-0.018	-0.217			0.068	0.209
9	Skeena	08EF001	**-0.255**	-0.290	-0.158	-0.591	**-0.128**	**-0.139**	-0.034	-0.434	-0.026	0.001	0.055	-0.345
9	Zymoetz	08EF005		**-0.593**	-0.281	-0.798		-0.203	0.081	-0.307		0.065	0.231	0.020
9	M3	08EF006				-0.145				-0.119				-0.099
9	Laventie	08JA015			-0.154	-1.075			-0.184	0.389			**0.502**	0.193
9	Whitesail	08JA029				-0.130				0.094				-0.008
10	Exchamsiks	08EG012	**-0.957**	-1.015	0.051	1.758	-0.541	-0.818	0.321	-0.790	0.117	0.343	1.157	2.237
10	Clarence	08EG018				-1.027				-0.679				-0.439
10	Kemano	08FE003		-0.240	0.085	-1.510		-0.252	0.689	0.100		-0.229	0.309	-0.140
10	Kitimat	08FF001		-0.607	-0.125	-2.000		**-0.438**	0.046	-0.575		0.048	0.480	-0.167
10	Hirsch	08FF002		**-0.805**	-0.344	-2.024		**-0.358**	-0.020	-1.190		0.218	0.609	-0.268
10	Little Wedeene	08FF003		-0.931	-0.462	-2.216		-0.440	0.092	-1.543		0.058	**0.813**	0.062
10	Renegade	08FF006				-0.986				-1.366				**-3.104**

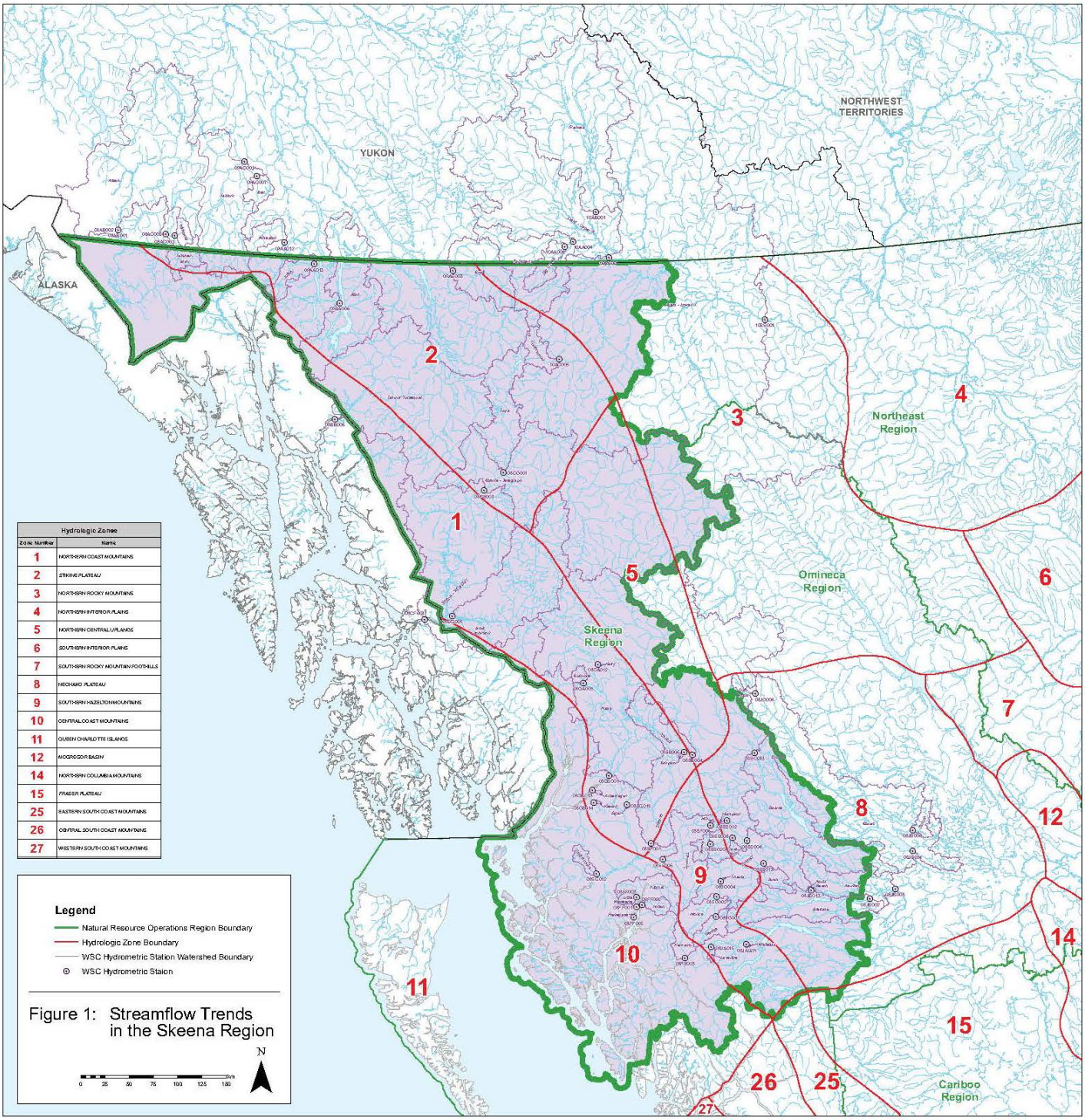
Table 10: MED_OCT, MED_NOV and MED_DEC

Median discharge for October, November and December. Trend values in bold are significant at p<0.10.

Hydro-logic Zone	Watershed		MED_OCT				MED_NOV				MED_DEC			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)				(L/s/km^2/yr)			
1	Stikine - Wrangell	08CF003				-0.153				-0.040				-0.091
1	Iskut - Johnson	08CG001	0.013	0.000	-0.022	-0.172	-0.049	0.082	0.158	0.325	0.043	0.098	0.099	-0.210
1	Surprise	08DA005		0.187	0.289	0.457		-0.029	0.000	0.034		0.015	0.033	-0.142
1	Nass	08DB001	-0.068	-0.046	0.146	0.041	-0.005	0.104	0.119	0.131	0.027	0.092	0.068	-0.118
1	Ansedagan	08DB013				-1.053				1.070				-0.114
1	Ksedin	08DB014				-1.051				0.365				-0.299
1	Kispiox	08EB004		**-0.073**	-0.070	**-0.711**		0.076	0.092	0.029		0.041	0.047	-0.064
2	Alsek - Bates	08AB001			0.022	0.230			0.021	-0.017			0.022	0.020
2	Alsek - Yakutat	08AB002				0.395				0.095				-0.034
2	Takhanne	08AC001				0.165				-0.014				0.041
2	Tatshenshini	08AC002				0.292				0.029				-0.036
2	Taku nr Juneau	08BB005				0.287				0.111				-0.088
2	Tuya	08CD001	-0.001	-0.008	0.056	0.271	0.001	-0.002	-0.004	-0.014	0.008	-0.001	-0.017	-0.056
2	Stikine - Telegraph	08CE001	0.001	-0.017	-0.026	0.030	-0.003	0.003	-0.018	-0.006	0.015	0.012	-0.023	-0.054
2	Kelly	08DA012				0.289								
2	Atlin	09AA006	0.004	0.000	-0.009	**0.357**	-0.025	-0.039	-0.055	**0.062**	-0.024	-0.027	-0.062	-0.026
2	Wheaton	09AA012	-0.017	0.003	-0.011	0.177	0.000	-0.007	-0.037	**0.055**	0.007	0.003	-0.014	0.026
2	Tutshi	09AA013		-0.002	-0.107	0.290		-0.030	-0.045	0.072		-0.009	-0.035	**-0.064**
2	Takhini	09AC001	-0.009	0.003	0.019	**0.112**	-0.003	-0.007	-0.021	-0.032	0.000	0.001	-0.002	0.022
2	Ibex	09AC007				0.071				0.009				0.019
2	Swift	09AE003	0.003	0.065	0.124	0.592	0.015	0.027	**0.049**	0.156	**0.018**	**0.039**	**0.045**	0.120
2	Cottonwood	10AC005		0.056	0.082	0.160		0.015	0.016	-0.062		0.010	0.021	-0.019
3	Liard - Upper Crossing	10AA001	0.016	**0.090**	0.124	0.313	0.005	0.027	0.048	0.086	0.007	**0.021**	**0.019**	0.060
3	Rancheria	10AA004				**0.376**				0.114				**0.132**
3	Big Creek	10AA005				0.095				0.095				0.100
3	Frances	10AB001	0.026	**0.093**	0.115	0.288	0.021	**0.049**	0.049	0.055	**0.015**	**0.038**	**0.041**	0.052
3	Liard - Lower Crossing	10BE001	0.010	0.049	0.069	0.288	0.025	**0.040**	0.022	0.070	0.021	**0.034**	0.012	0.032
8	Babine	08EC013		-0.022	0.021	-0.085		0.000	**0.038**	-0.080		-0.006	**0.031**	-0.106
8	Goathorn	08EE008	-0.062	-0.084	-0.038	-0.113	-0.012	0.004	0.077	0.181	-0.001	0.002	0.029	-0.004
8	Simpson	08EE012		-0.074	0.068	0.025		0.067	**0.134**	0.086		**0.048**	**0.061**	0.006
8	Buck	08EE013		-0.009	0.036	-0.181		0.049	**0.082**	0.035		0.026	**0.037**	-0.016
8	Stellako	08JB002	**-0.012**	-0.012	0.005	-0.014	-0.009	0.000	**0.028**	-0.001	-0.005	0.001	**0.026**	0.000
8	Nautley	08JB003	-0.012	-0.003	**0.019**	-0.008	-0.001	**0.011**	**0.035**	-0.002	0.000	0.009	**0.033**	0.035
8	North Beach	08JB013				-0.051								
8	Driftwood	08JD006			0.034	-0.624			0.068	-0.032			0.022	**-0.142**
8	Stuart	08JE001	-0.023	-0.021	0.007	-0.097	-0.019	-0.006	0.057	-0.237	-0.017	0.000	0.046	-0.239
8	Tsilcoh	08JE004			0.043	-0.015			0.063	-0.081			**0.033**	-0.027

Hydro-logic Zone	Watershed		MED_OCT				MED_NOV				MED_DEC			
	Stream	Hydrometric Station	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-	1961-	1971-	1981-	1997-
			(L/s/km^2/yr)				(L/s/km^2/yr)				(L/s/km^2/yr)			
9	Compass	08EB006				-0.437								
9	Nanika	08ED001		-0.165	0.131	-0.617		0.152	0.312	0.903		0.024	0.076	-0.181
9	Morice	08ED002	-0.183	-0.065	0.103	-0.494	-0.046	0.132	0.369	0.424	0.010	0.050	0.124	-0.037
9	Thautil	08ED004				-0.613								
9	Bulkley	08EE004	-0.071	-0.044	0.051	-0.280	-0.013	0.059	**0.202**	0.326	-0.015	0.028	0.079	-0.024
9	Telkwa	08EE020			0.000	0.000			0.140	0.417			0.083	-0.102
9	Skeena	08EF001	**-0.068**	**-0.071**	0.030	-0.055	0.004	0.045	0.086	0.147	-0.024	-0.007	0.000	-0.103
9	Zymoetz	08EF005		**-0.132**	0.061	-0.226		0.125	0.191	0.671		0.046	0.128	-0.063
9	M3	08EF006				**-0.211**								
9	Laventie	08JA015			0.278	-0.702			**0.255**	0.319			0.134	-0.050
9	Whitesail	08JA029				0.130								
10	Exchamsiks	08EG012	-0.270	0.010	-0.129	0.361	0.191	0.390	0.415	2.141	0.068	0.123	0.109	-1.352
10	Clarence	08EG018				-2.234								
10	Kemano	08FE003		-0.057	0.438	1.307		0.317	0.359	0.629		0.118	0.116	-0.545
10	Kitimat	08FF001		-0.097	0.354	-0.556		**0.461**	**0.600**	1.450		0.080	0.100	-1.408
10	Hirsch	08FF002		0.000	0.465	0.000		0.248	0.224	1.945		0.075	0.112	-0.839
10	Little Wedeene	08FF003		0.042	**1.688**	2.769		0.434	0.554	1.532		0.222	0.491	-1.459
10	Renegade	08FF006				-0.562				3.365				-6.822

Figure 1 Streamflow Trends in the Skeena Region



Appendix 1 - Figures

Province of British Columbia – Ministry of Environment

Streamflow Trends in the Skeena Region

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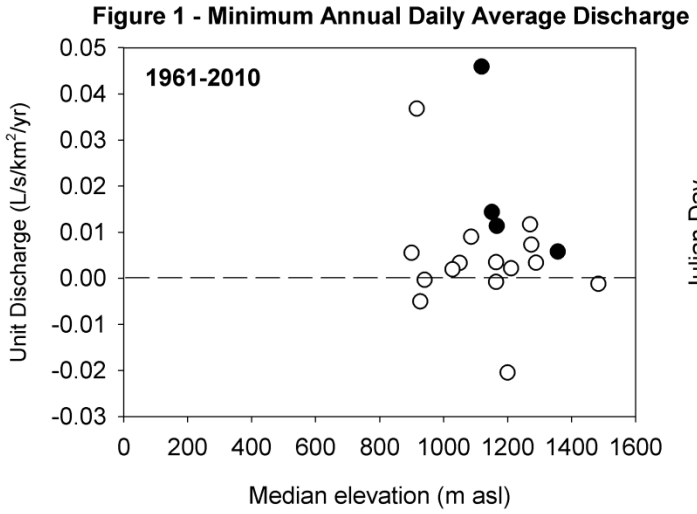
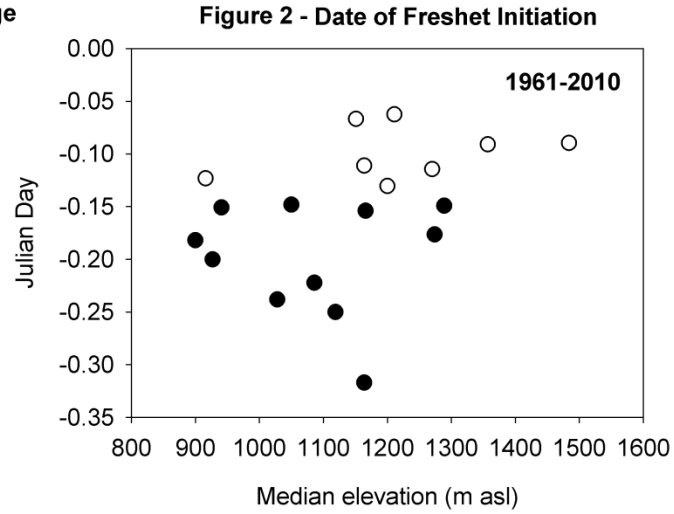
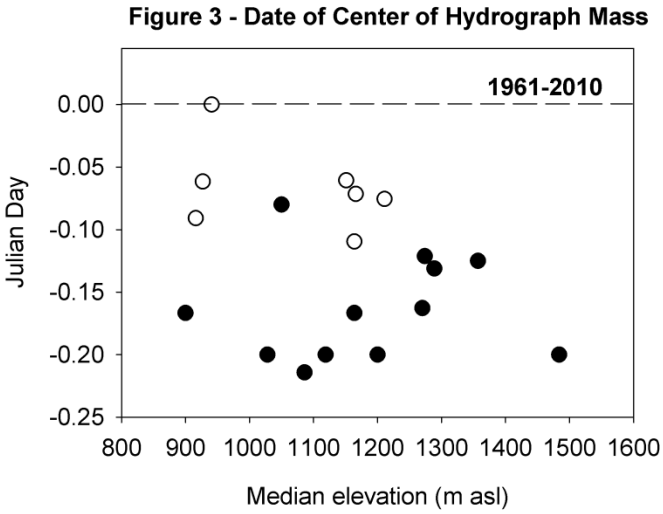
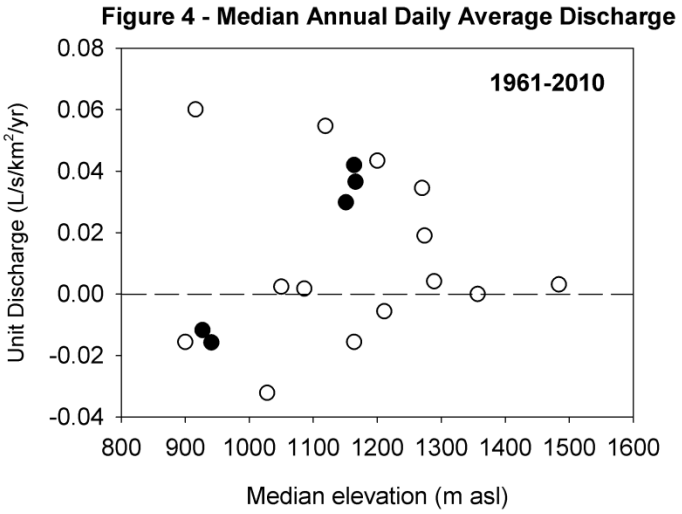
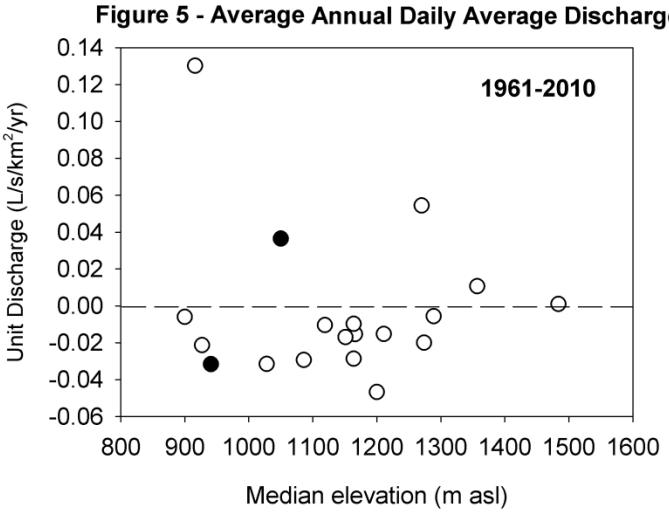
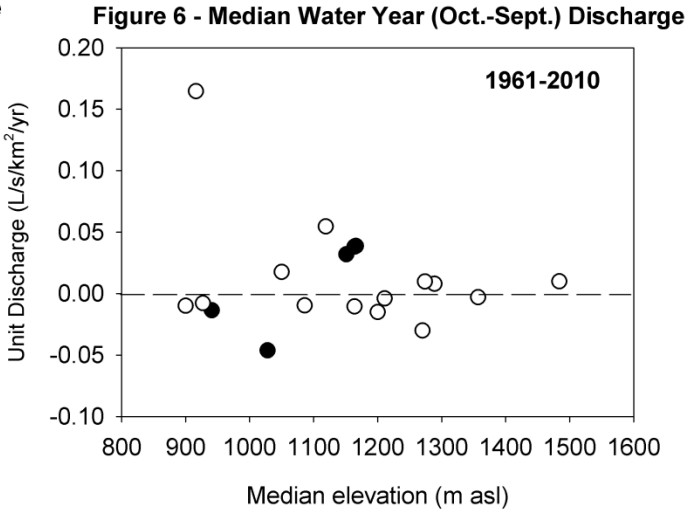












Figures 7-12: Median elevation (1961-2010)

Figure 7 - Average Water Year (Oct.-Sept.) Discharge

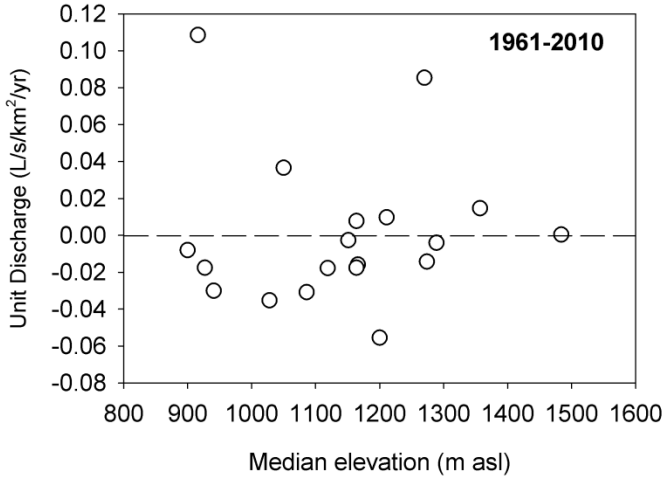


Figure 8 - Annual Minimum 7-day Average Discharge

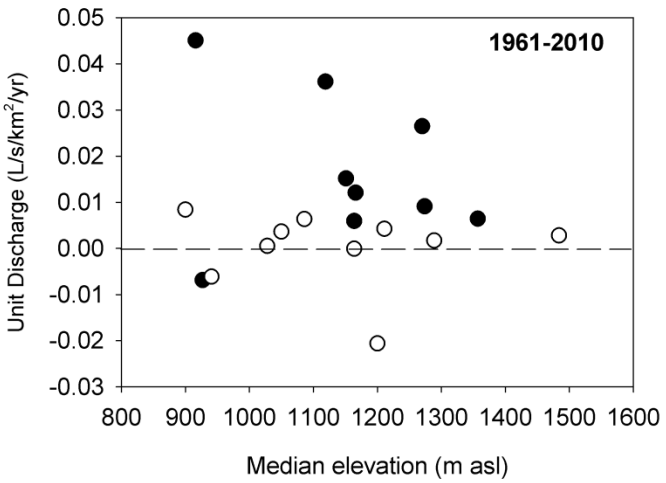


Figure 9 - Annual Minimum 30-day Average Discharge

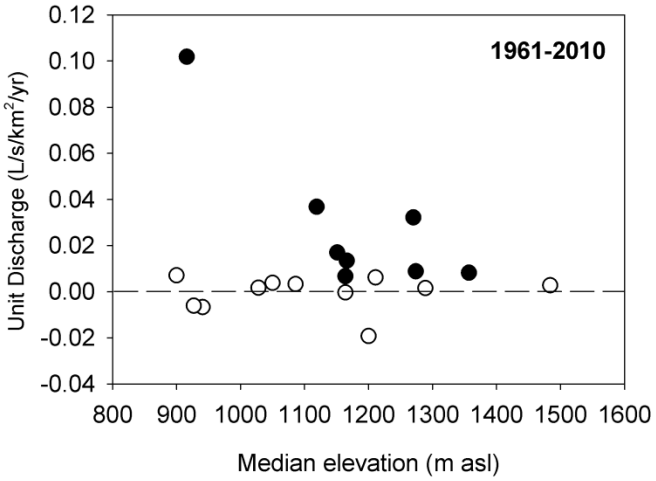


Figure 10 - June-Sept. Min. 7-day Average Discharge

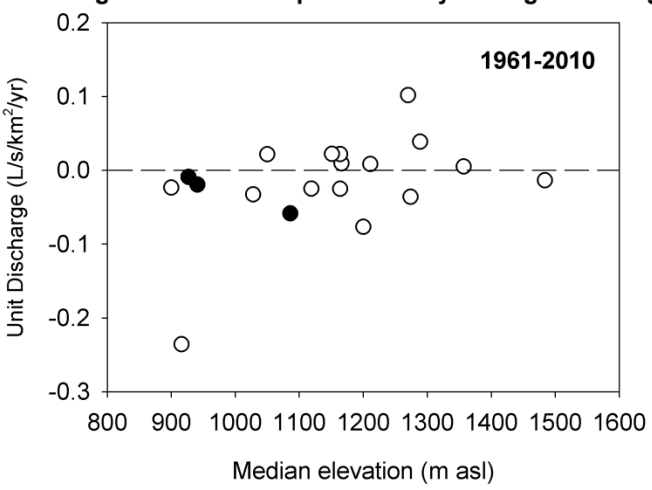


Figure 11 - June-Sept. Min. 30-day Average Discharge

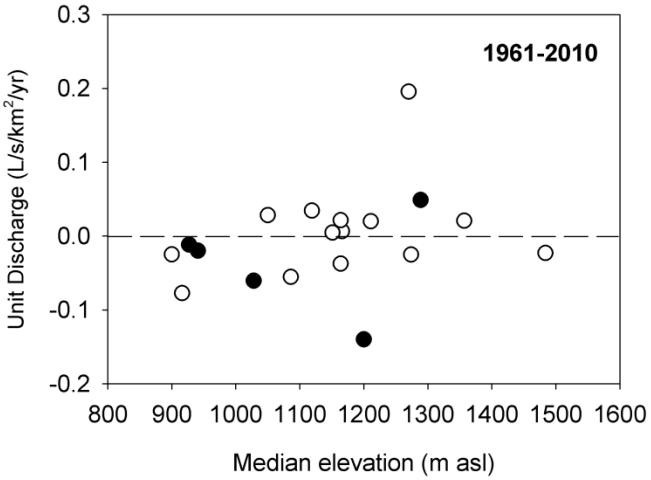
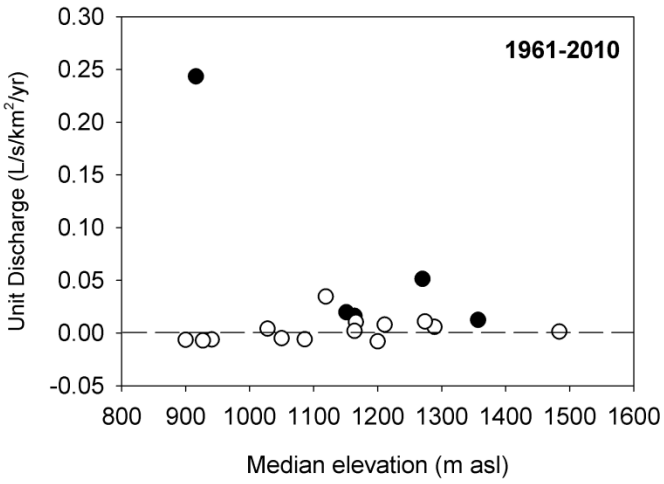
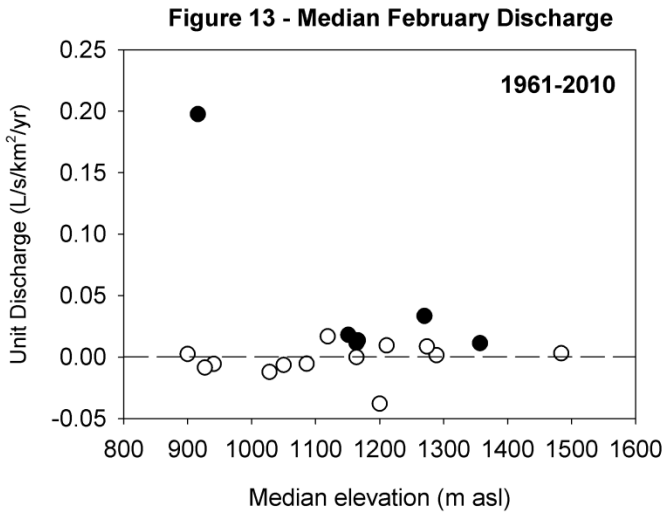
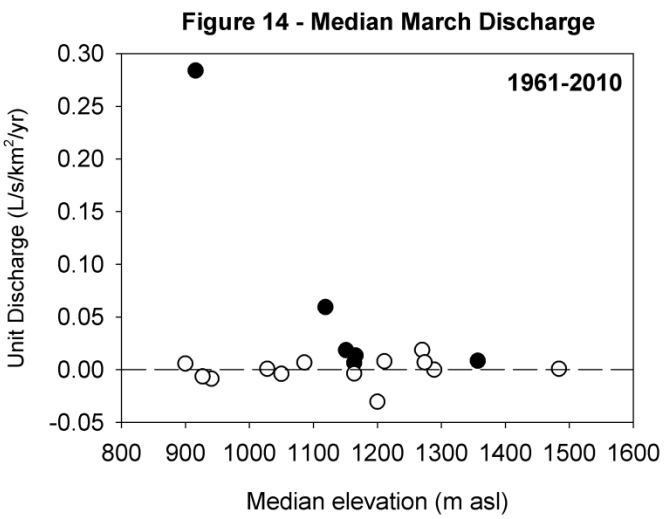


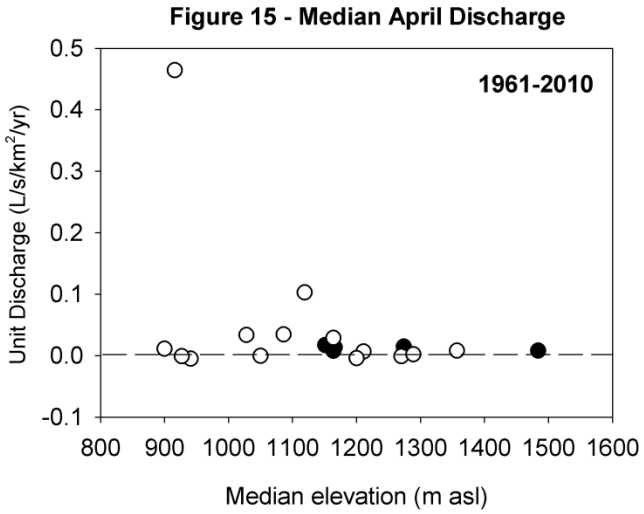
Figure 12 - Median January Discharge

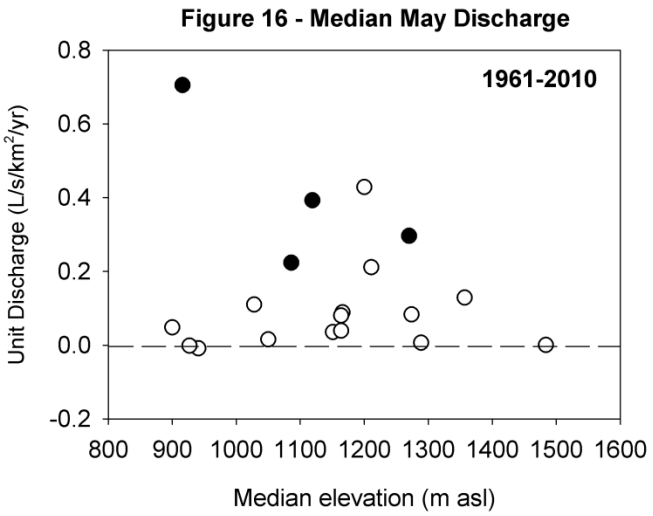


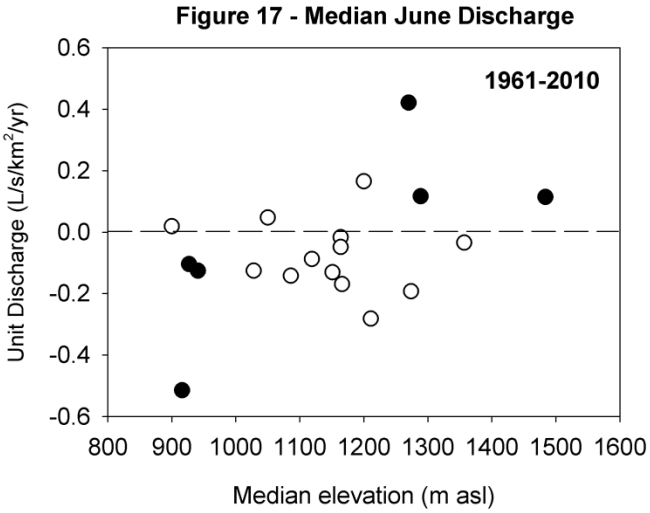
Figures 13-18: Median elevation (1961-2010)

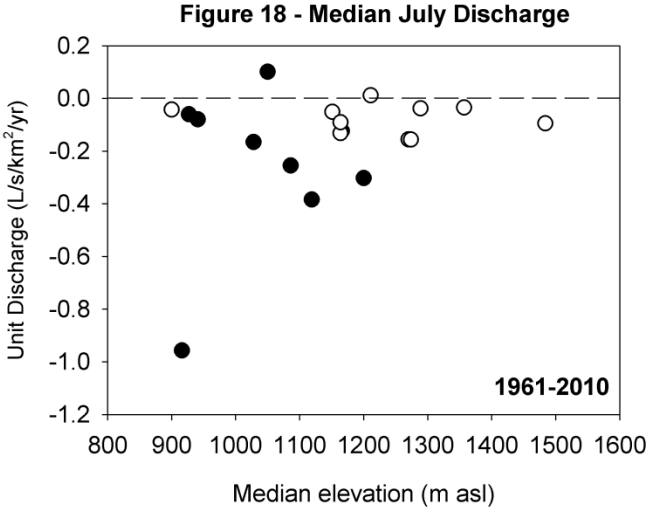




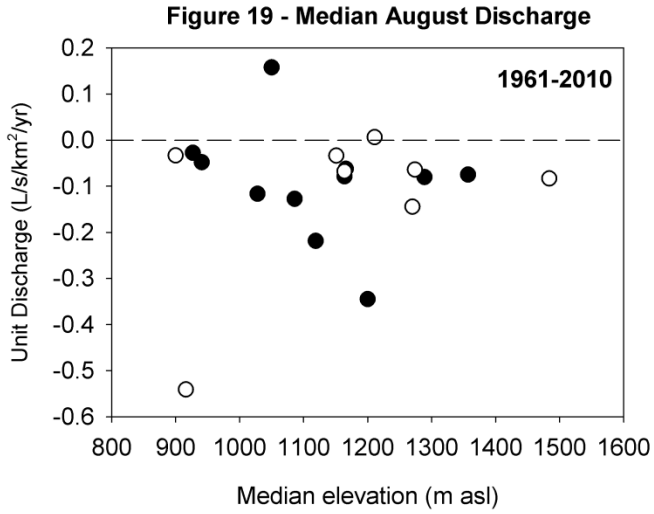


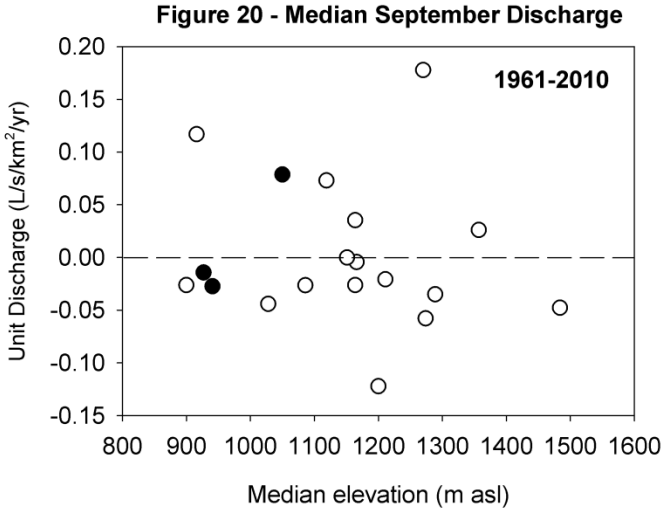


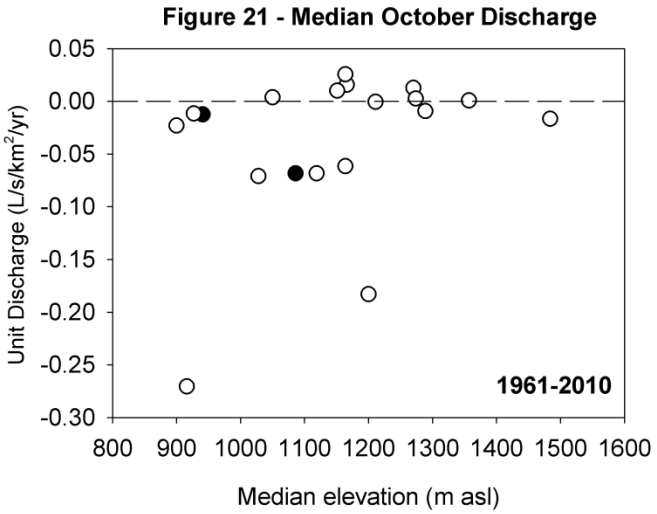


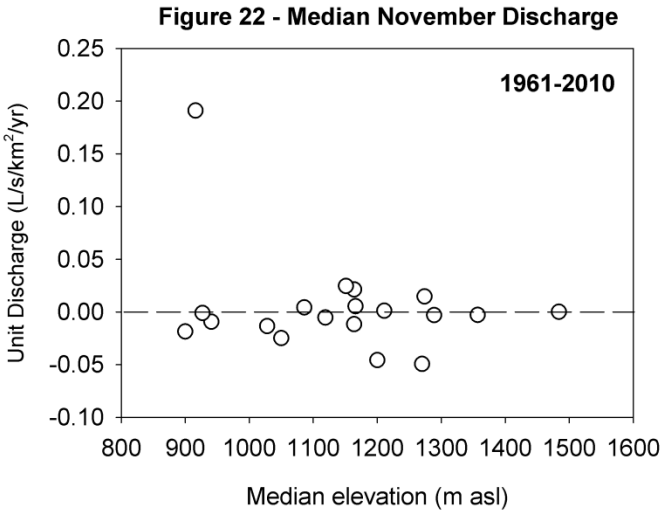


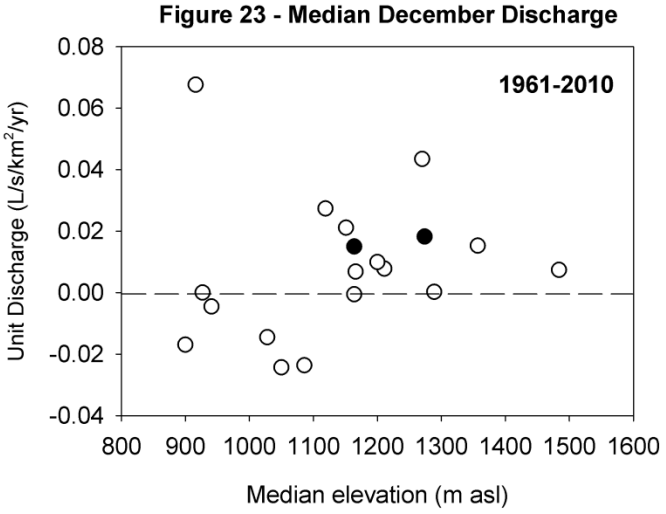
Figures 19-23: Median elevation (1961-2010)











Figures 24-29: Basin area (1961-2010)

Figure 24 - Minimum Annual Daily Average Discharge

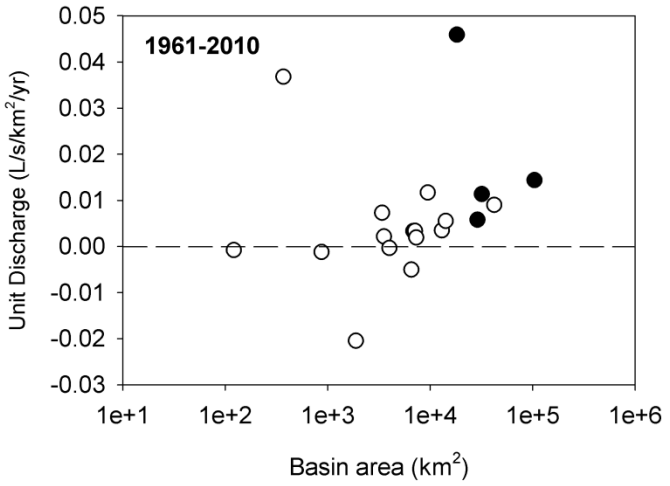


Figure 25 - Date of Freshet Initiation

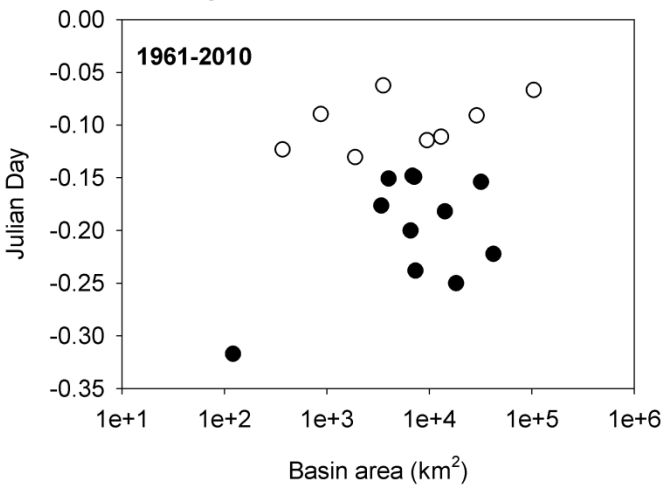


Figure 26 - Date of Center of Hydrograph Mass

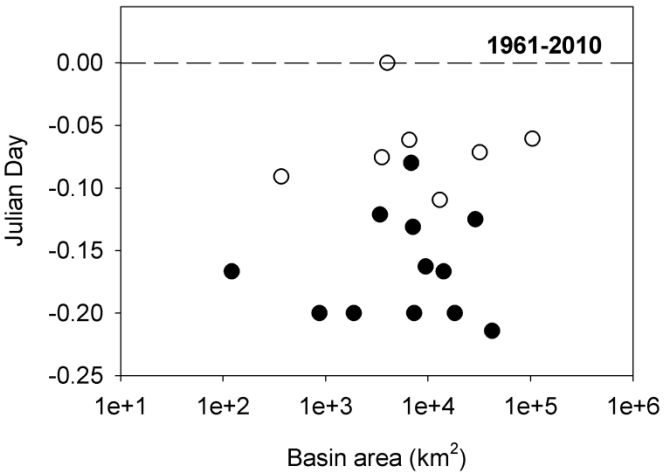


Figure 27 - Median Annual Daily Average Discharge

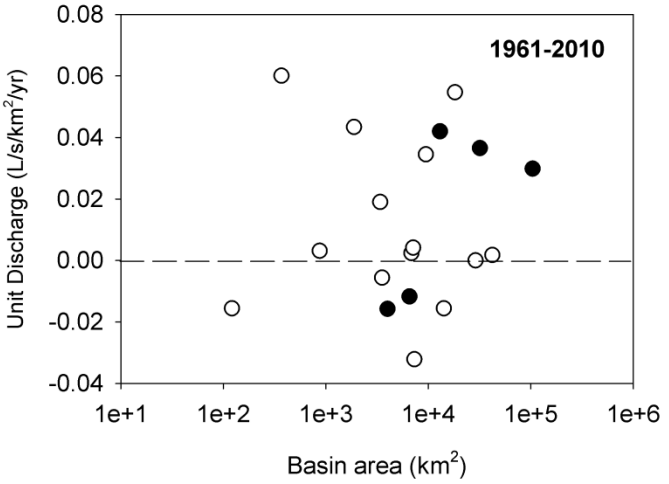


Figure 28 - Average Annual Daily Average Discharge

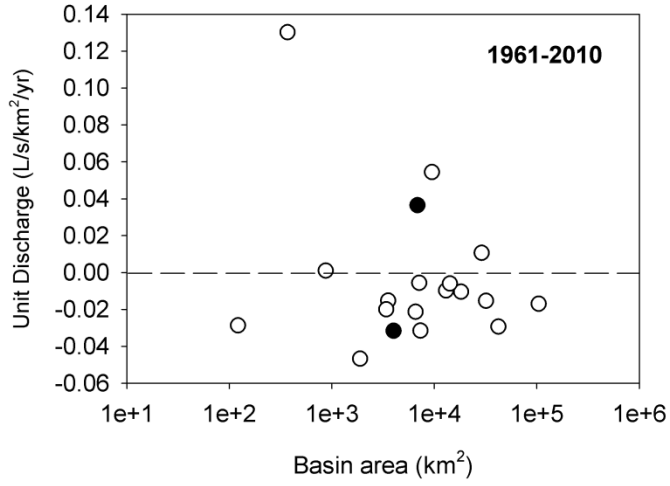
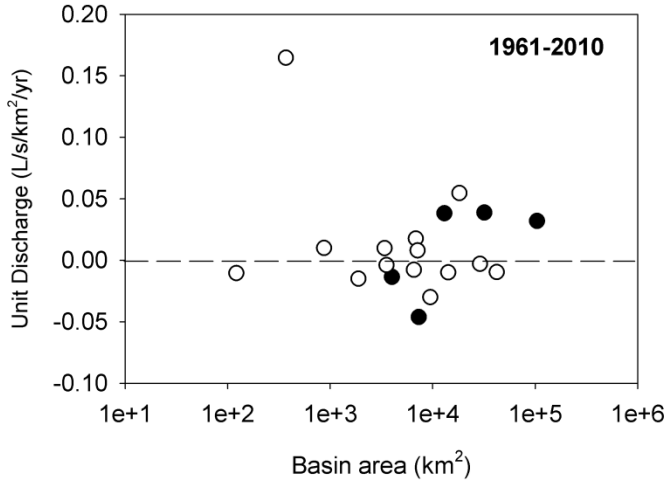


Figure 29 - Median Water Year (Oct.-Sept.) Discharge



Figures 30-35: Basin area (1961-2010)

Figure 30 - Average Water Year (Oct.-Sept.) Discharge

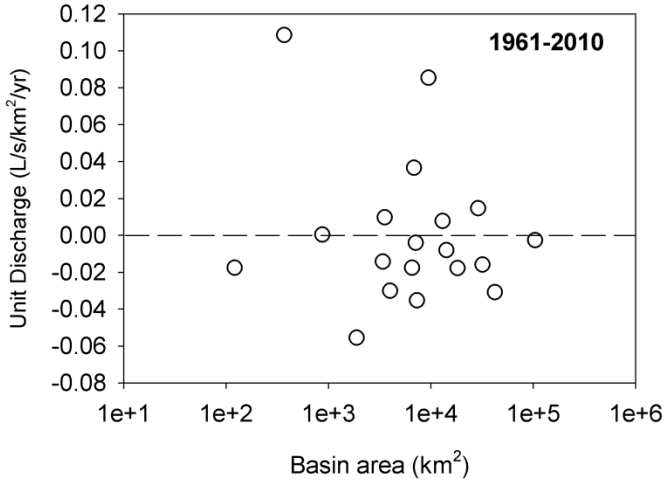


Figure 31 - Annual Minimum 7-day Average Discharge

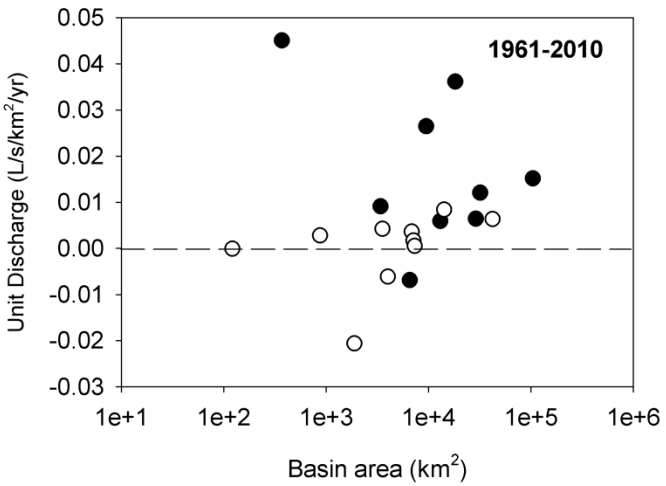


Figure 32 - Annual Minimum 30-day Average Discharge

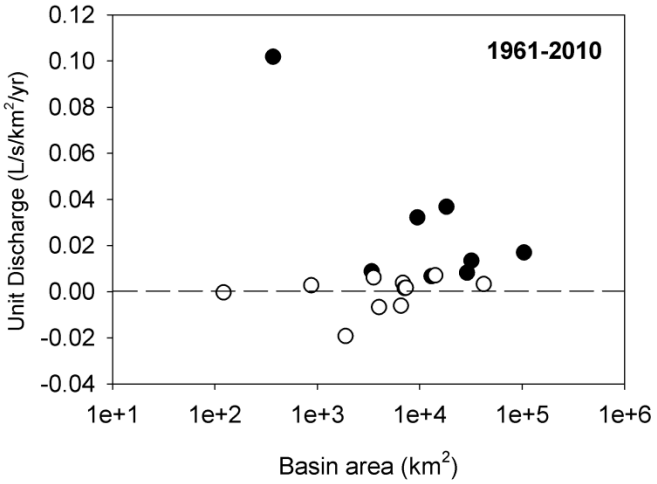


Figure 33 - June-Sept. Min. 7-day Average Discharge

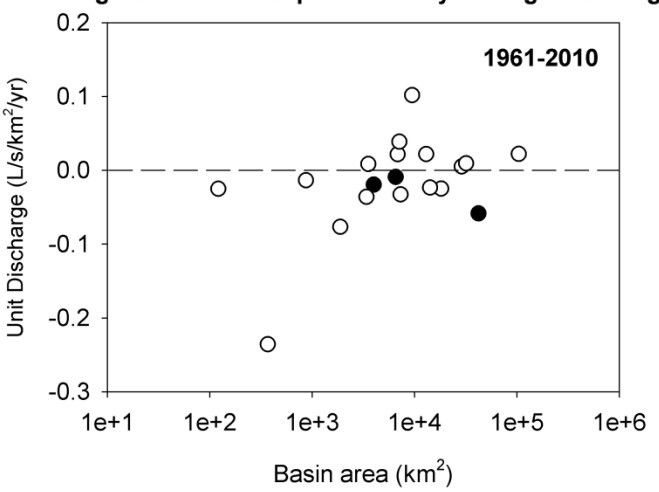


Figure 34 - June-Sept. Min. 30-day Average Discharge

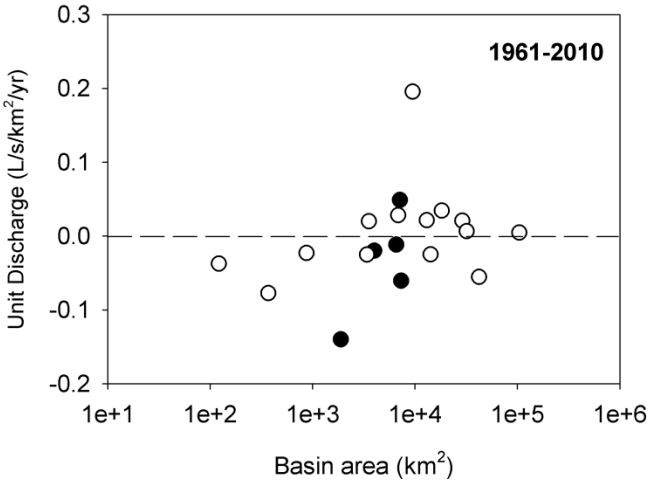
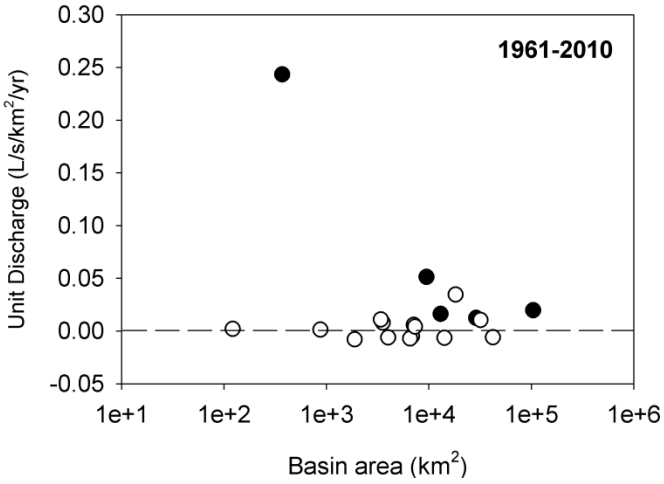


Figure 35 - Median January Discharge



Figures 36-41: Basin area (1961-2010)

Figure 36 - Median February Discharge

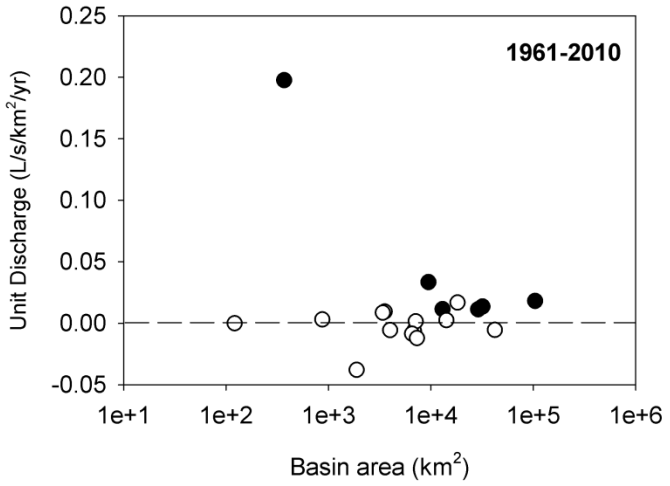


Figure 37 - Median March Discharge

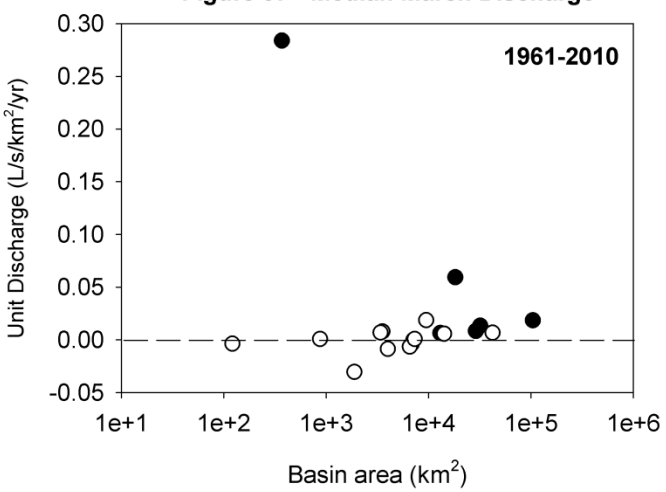


Figure 38 - Median April Discharge

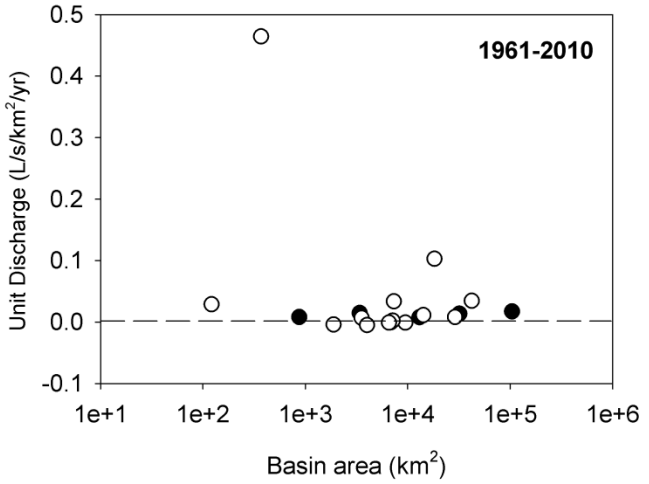


Figure 39 - Median May Discharge

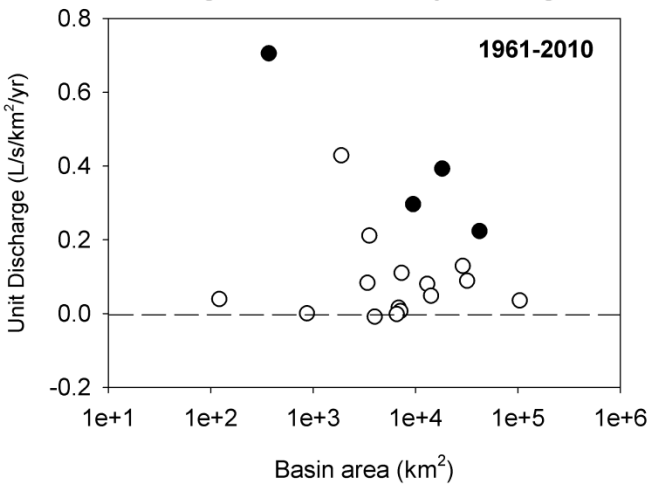


Figure 40 - Median June Discharge

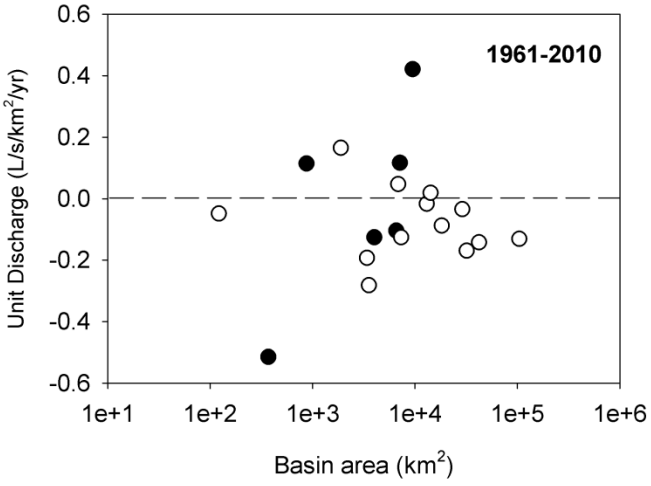
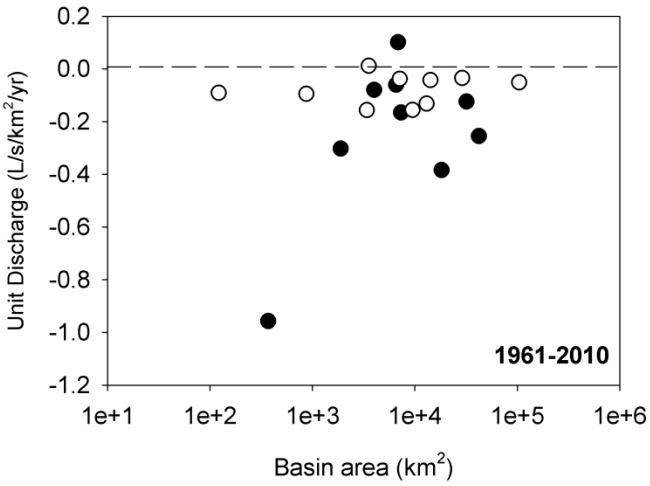
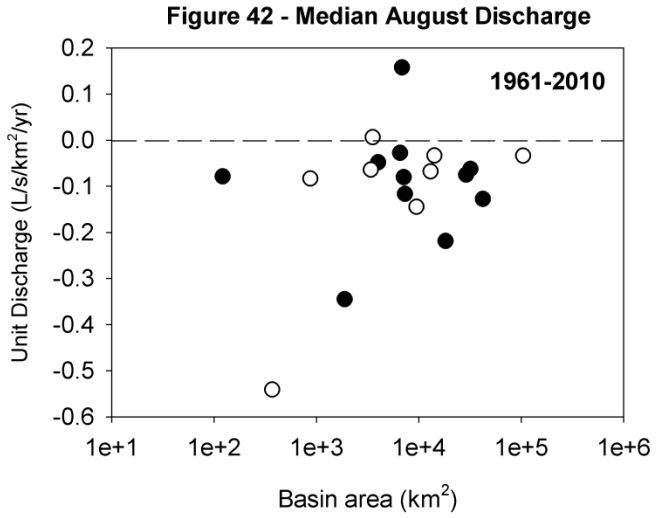
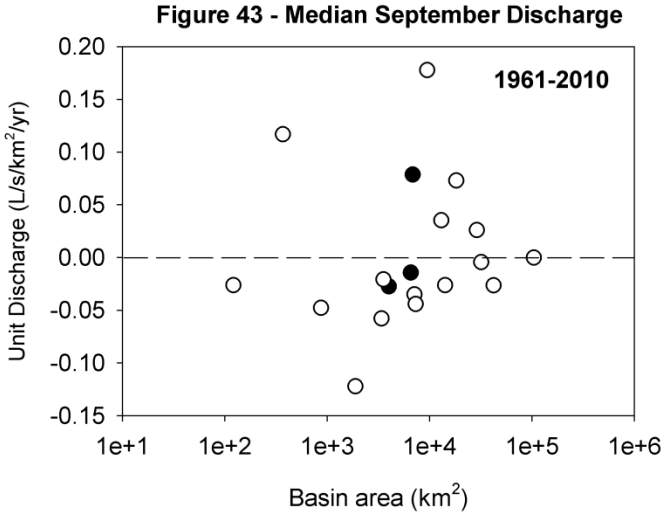


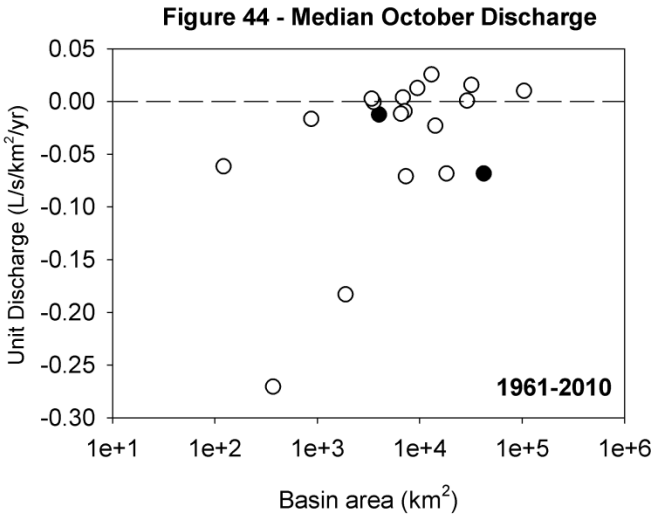
Figure 41 - Median July Discharge

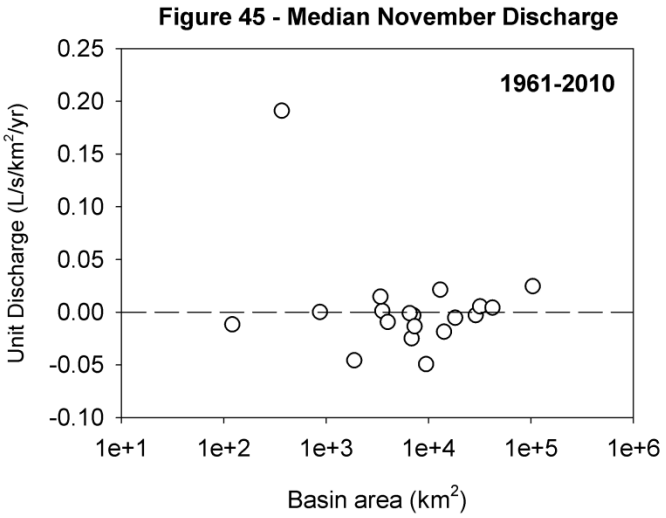


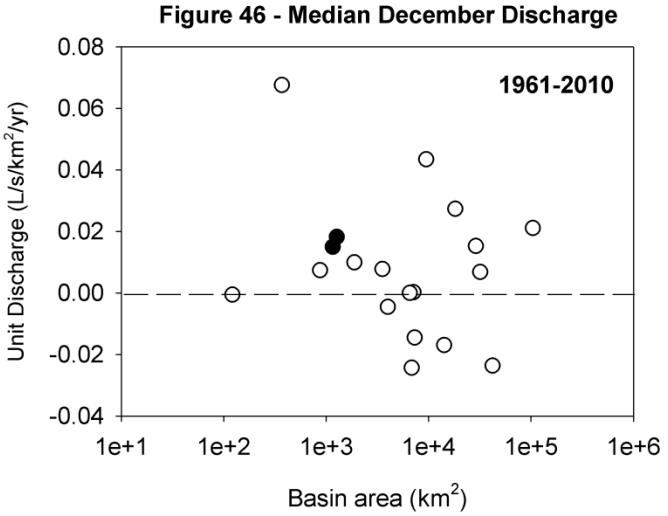
Figures 42-46: Basin area (1961-2010)











Figures 47-52: Median elevation (1971-2010)

Figure 47 - Minimum Annual Daily Average Discharge

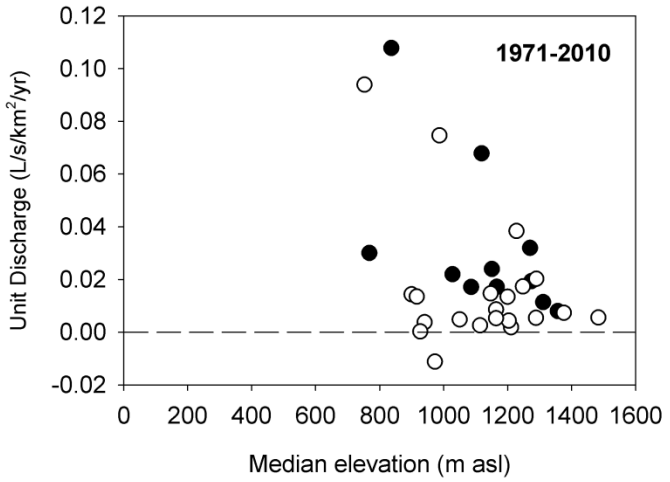


Figure 48 - Date of Freshet Initiation

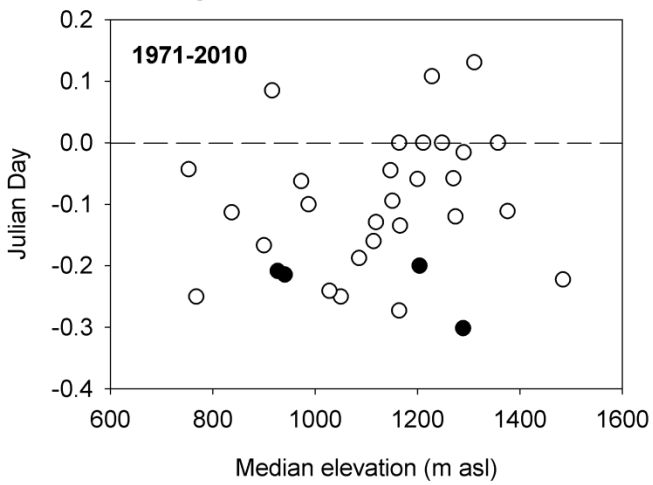


Figure 49 - Date of Center of Hydrograph Mass

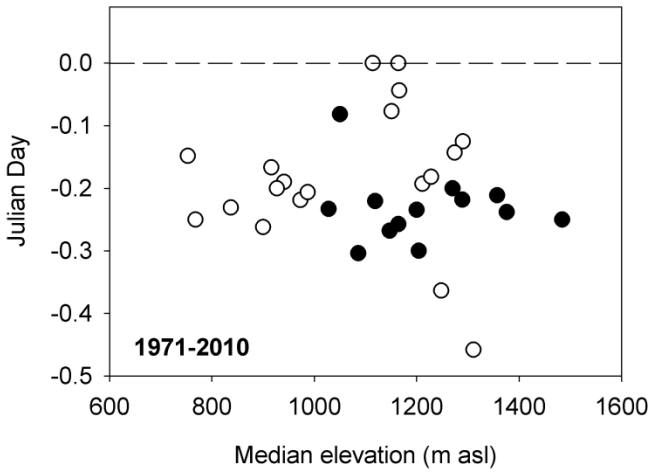


Figure 50 - Median Annual Daily Average Discharge

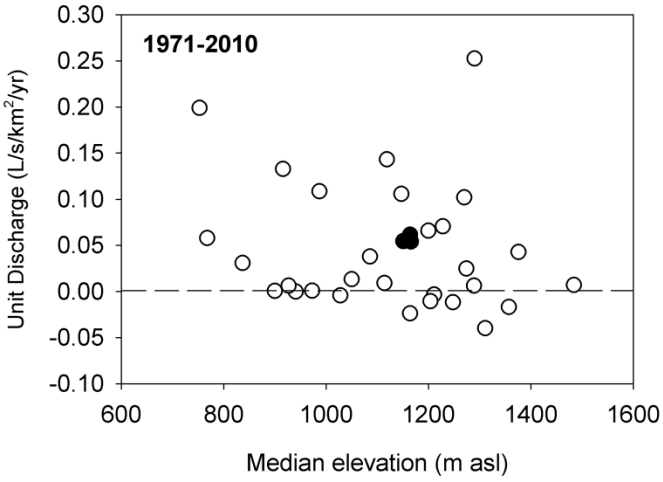


Figure 51 - Average Annual Daily Average Discharge

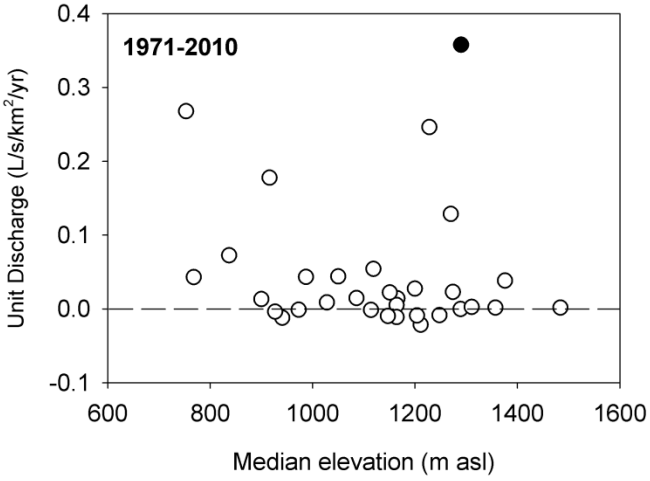
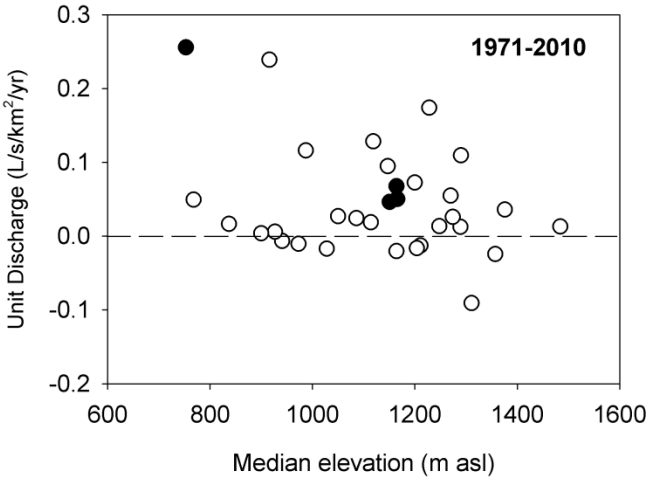


Figure 52 - Median Water Year (Oct.-Sept.) Discharge



Figures 53-58: Median elevation (1971-2010)

Figure 53 - Average Water Year (Oct.-Sept.) Discharge

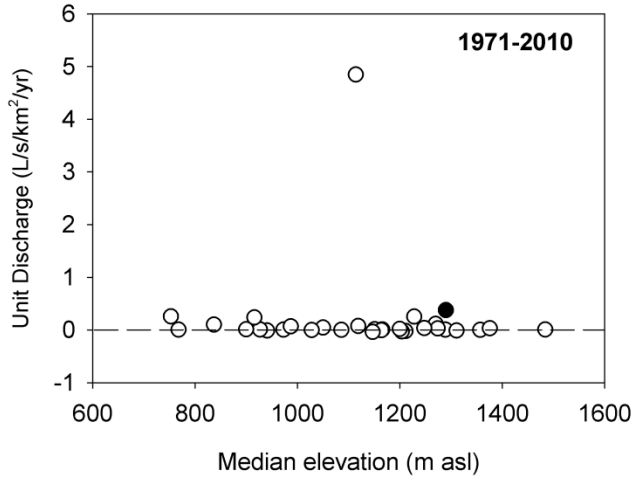


Figure 54 - Annual Minimum 7-day Average Discharge

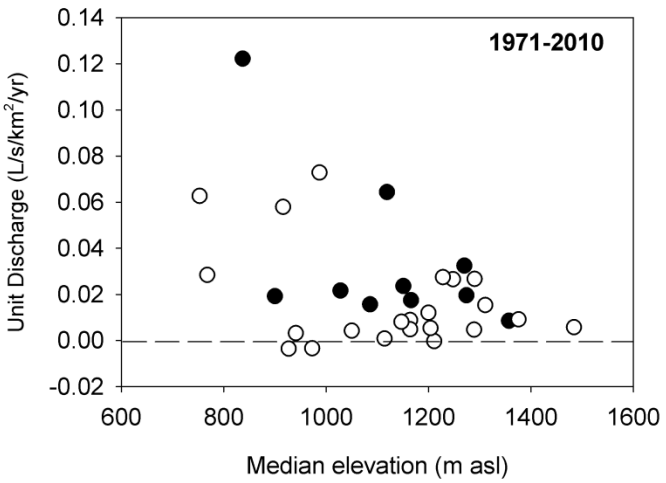


Figure 55 - Annual Minimum 30-day Average Discharge

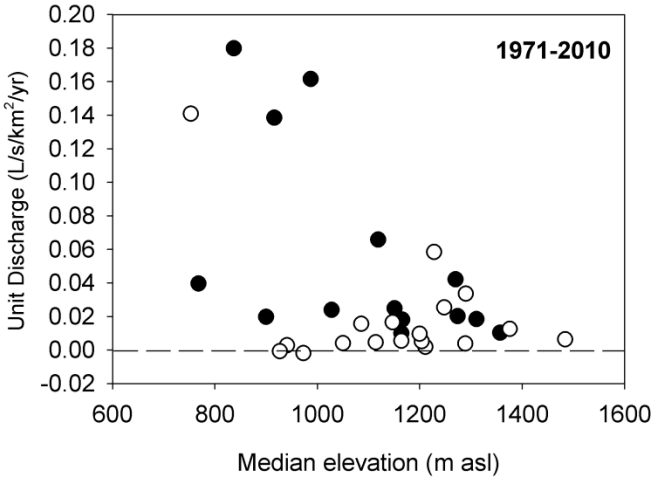


Figure 56 - June-Sept. Min. 7-day Average Discharge

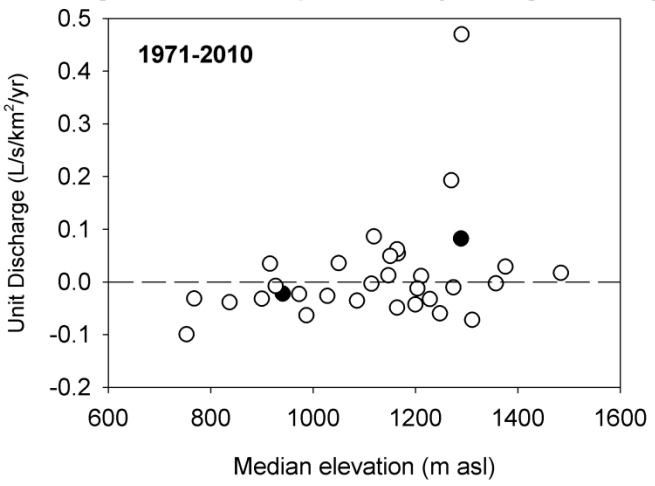


Figure 57 - June-Sept. Min. 30-day Average Discharge

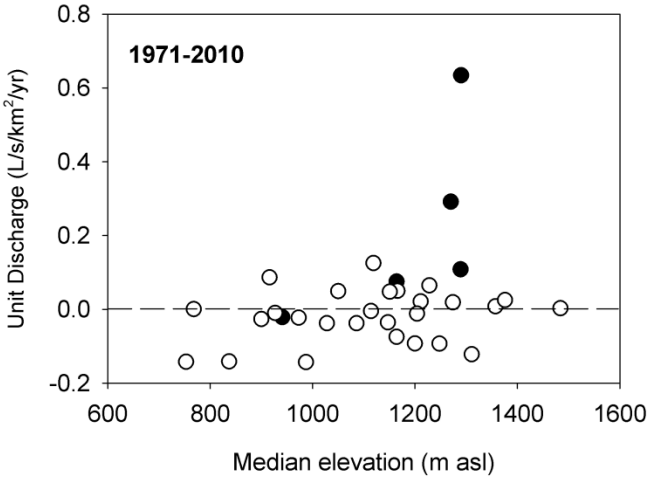
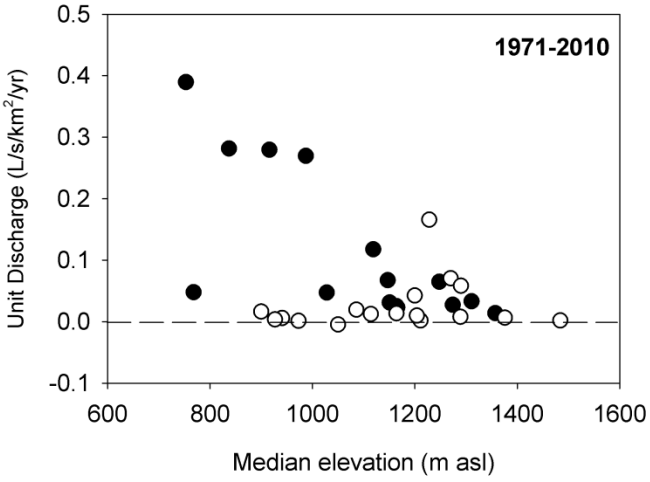
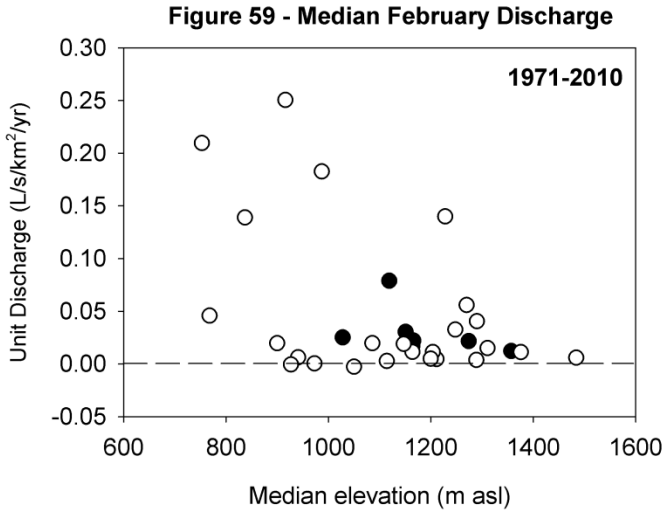
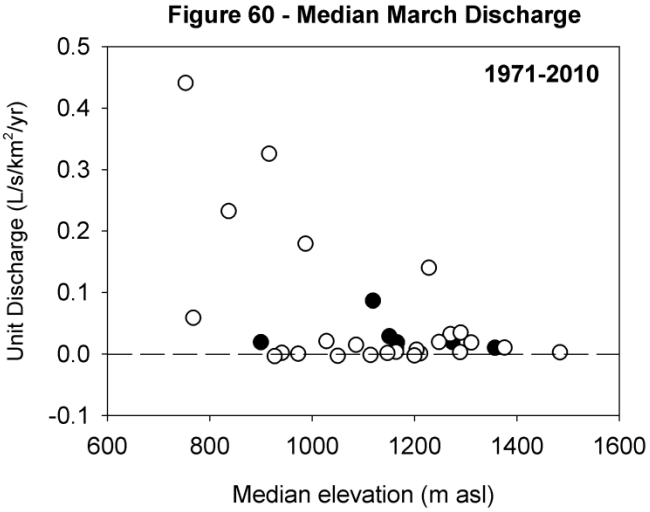


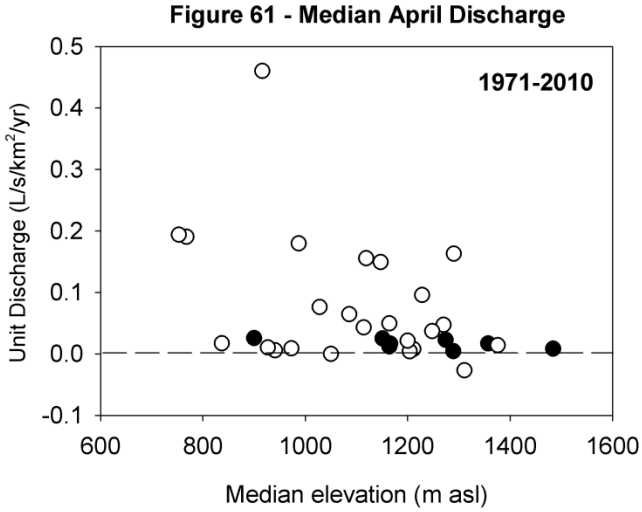
Figure 58 - Median January Discharge

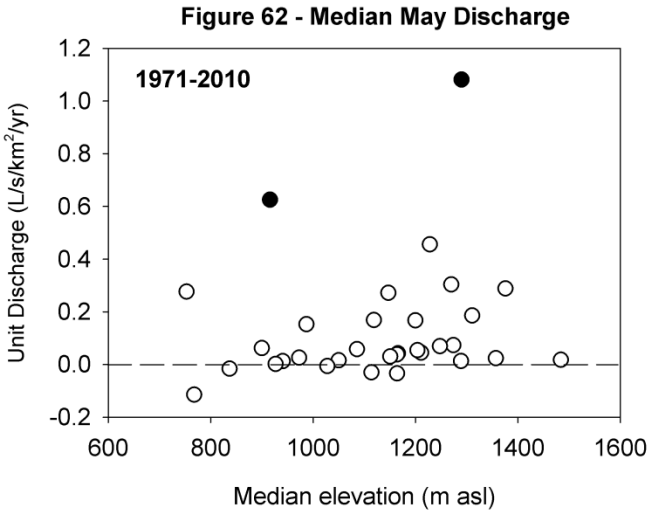


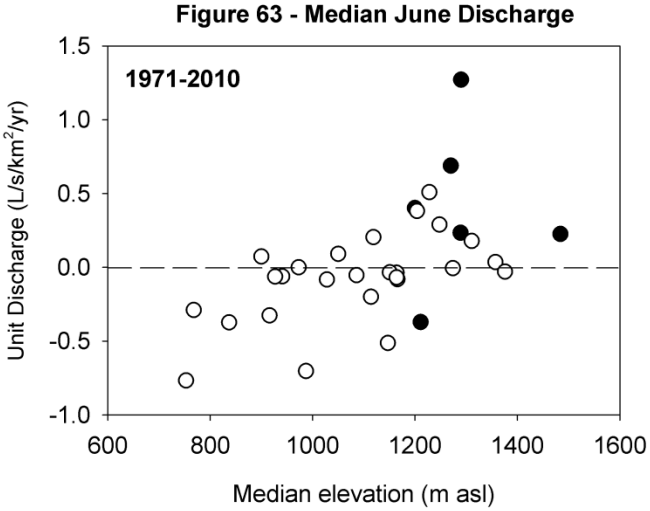
Figures 59-64: Median elevation (1971-2010)

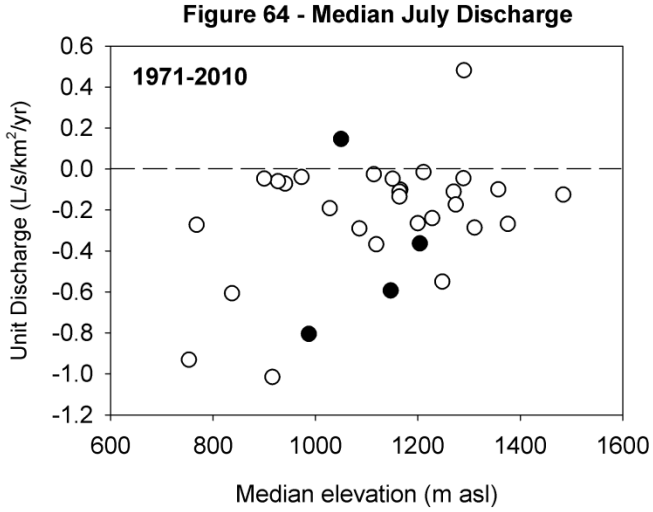




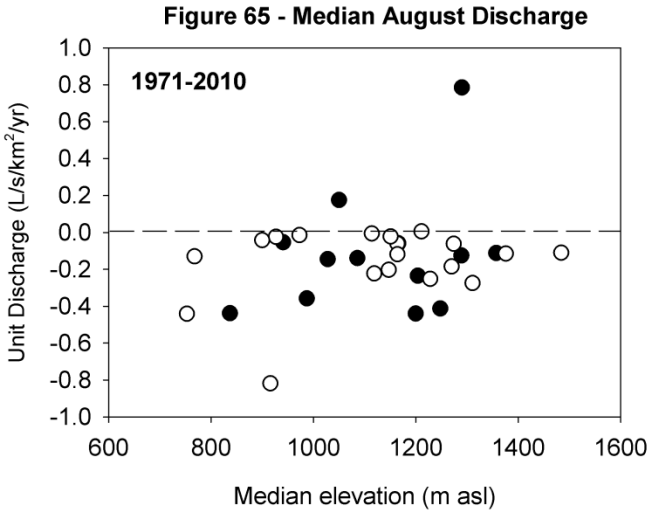


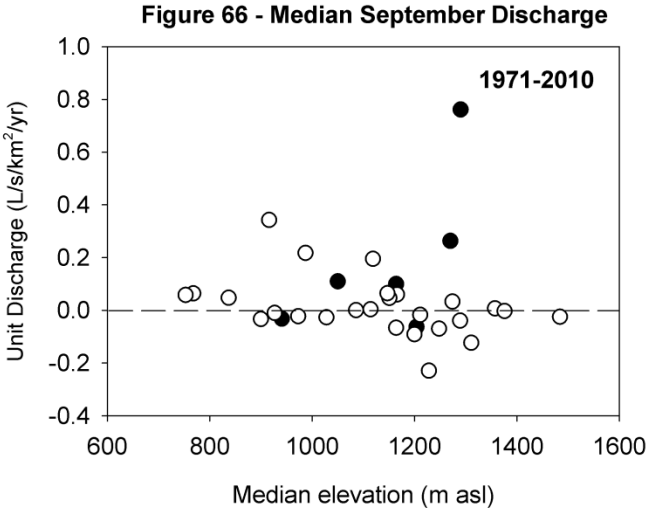


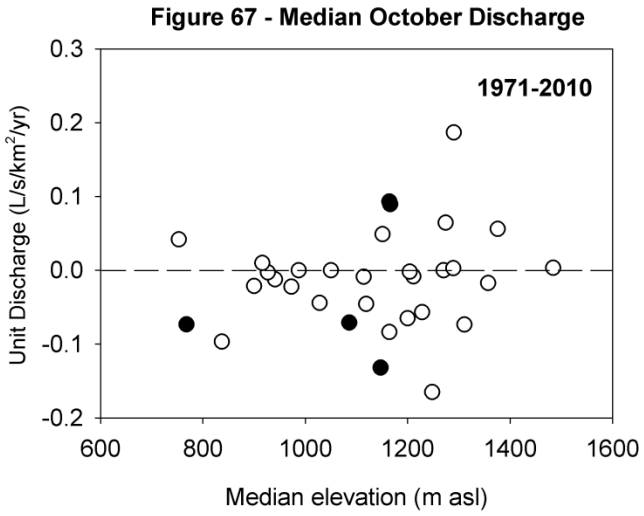


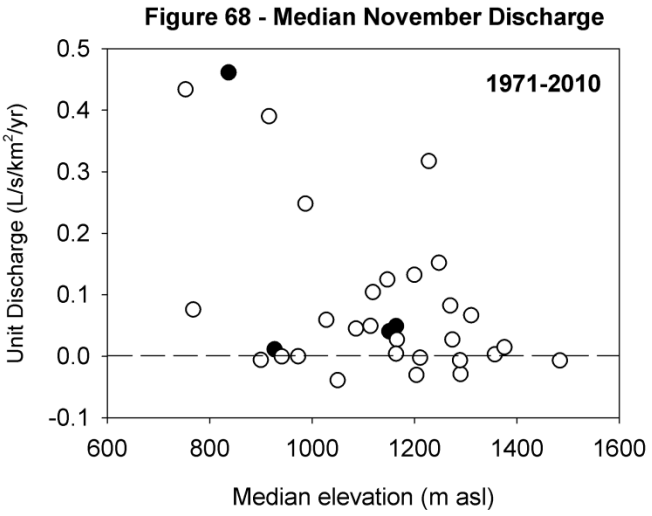


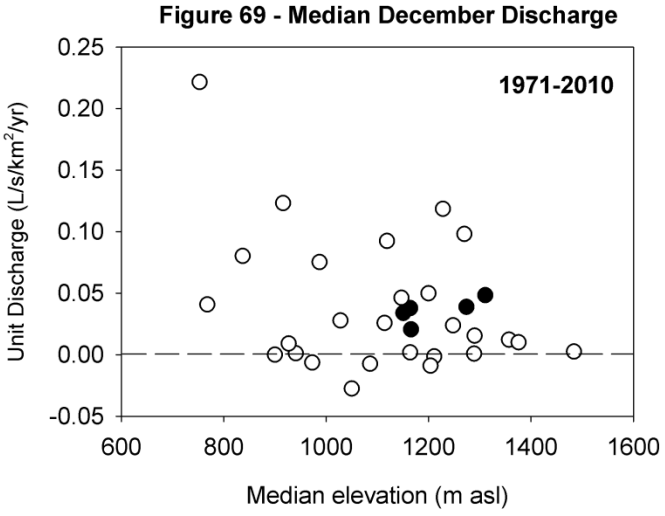
Figures 65-69: Median elevation (1971-2010)











Figures 70-75: Basin area (1971-2010)

Figure 70 - Minimum Annual Daily Average Discharge

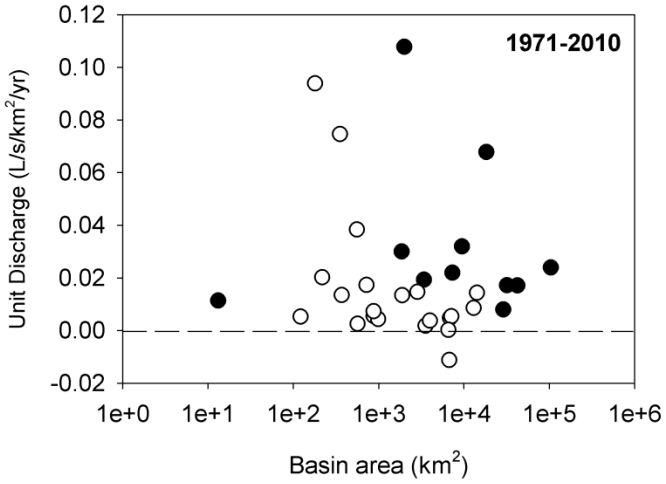


Figure 71 - Date of Freshet Initiation

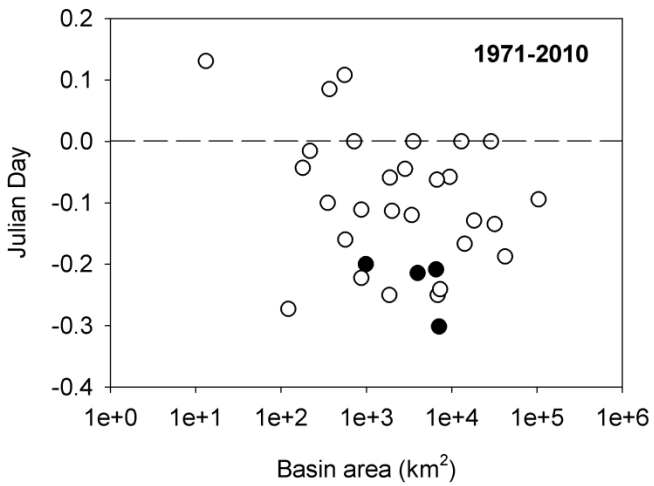


Figure 72 - Date of Center of Hydrograph Mass

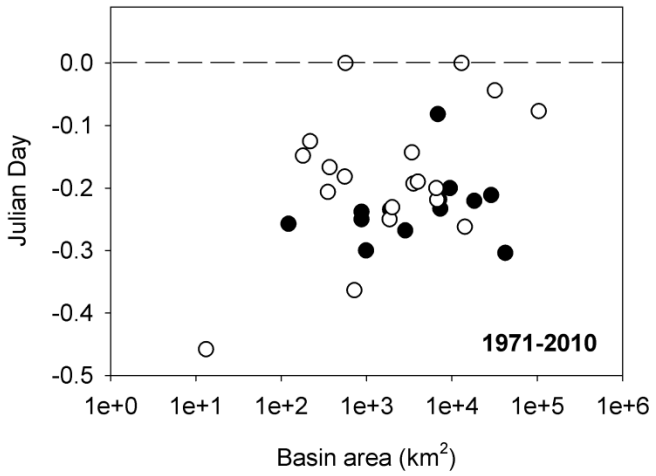


Figure 73 - Median Annual Daily Average Discharge

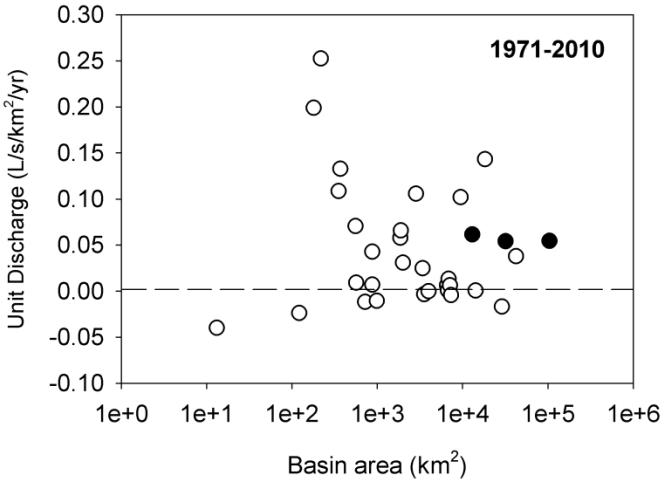


Figure 74 - Average Annual Daily Average Discharge

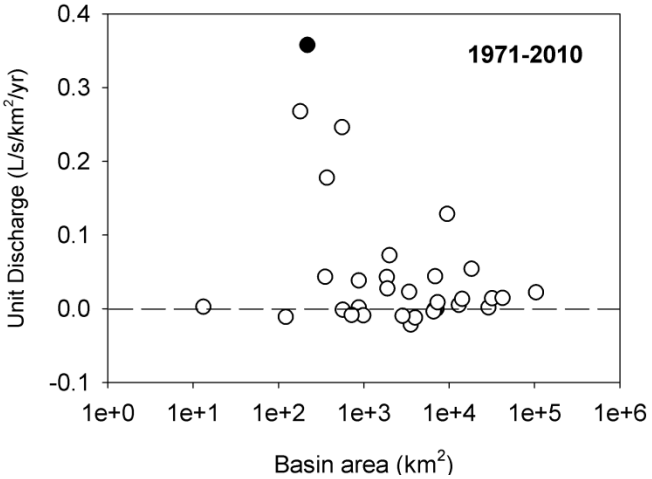
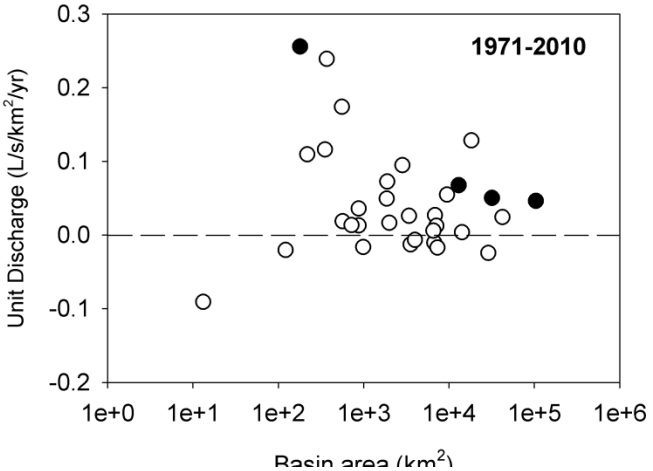


Figure 75 - Median Water Year (Oct.-Sept.) Discharge



Figures 76-81: Basin area (1971-2010)

Figure 76 - Average Water Year (Oct.-Sept.) Discharge

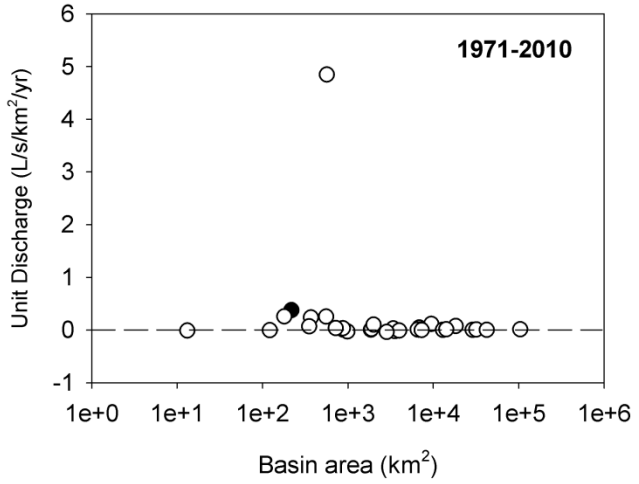


Figure 77 - Annual Minimum 7-day Average Discharge

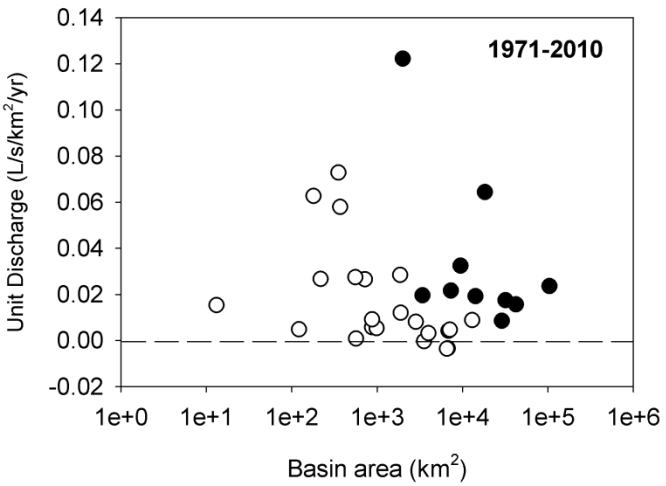


Figure 78 - Annual Minimum 30-day Average Discharge

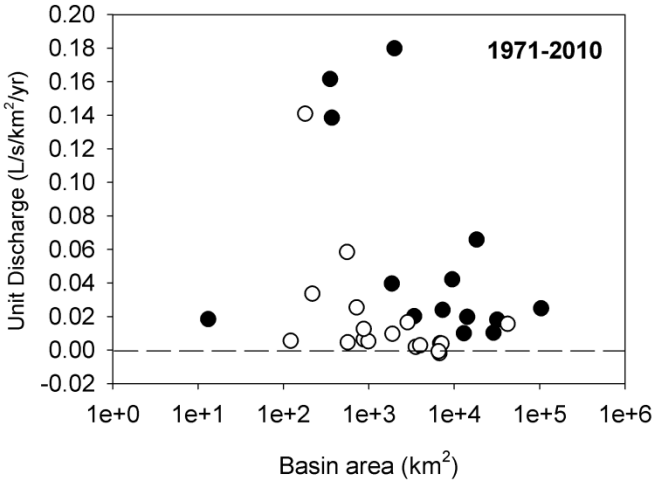


Figure 79 - June-Sept. Min. 7-day Average Discharge

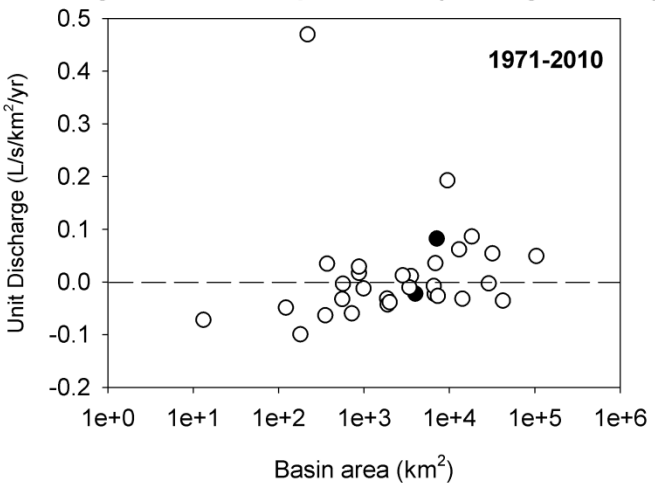


Figure 80 - June-Sept. Min. 30-day Average Discharge

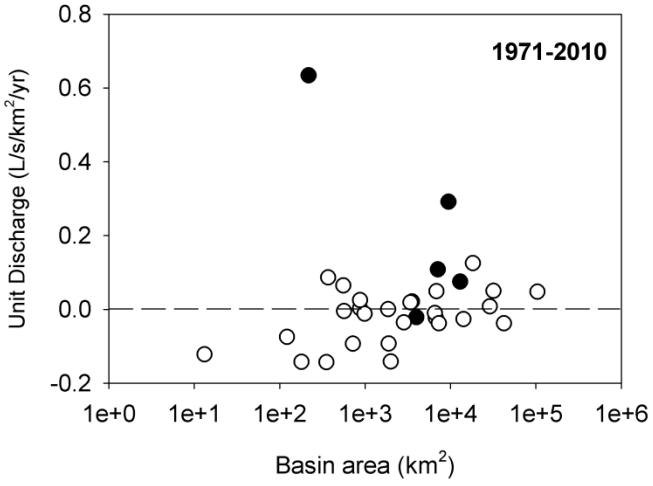
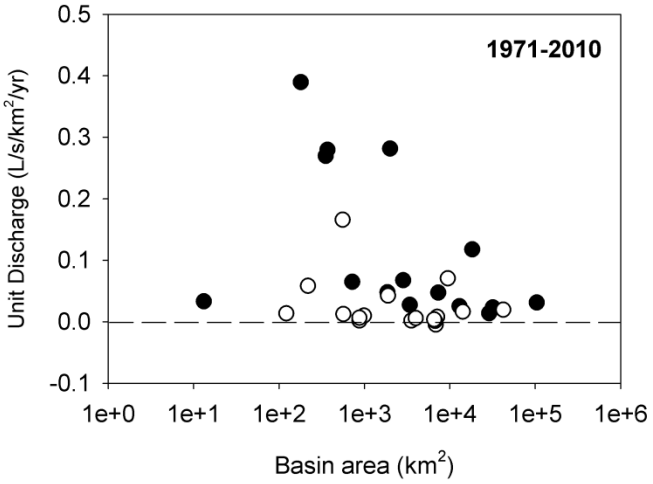


Figure 81 - Median January Discharge



Figures 82-87: Basin area (1971-2010)

Figure 82 - Median February Discharge

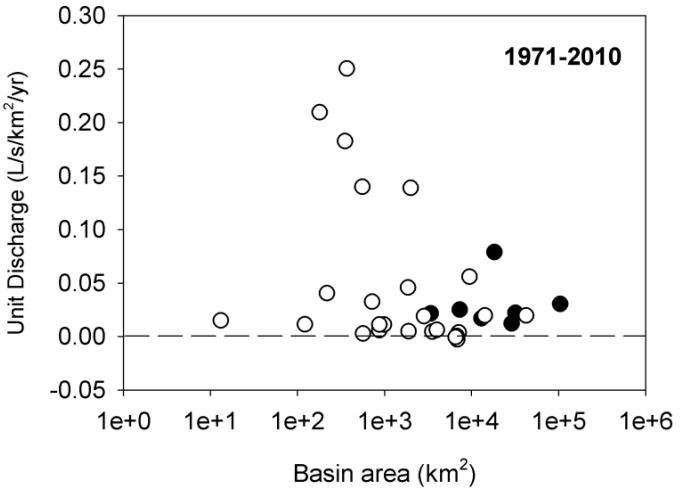


Figure 83 - Median March Discharge

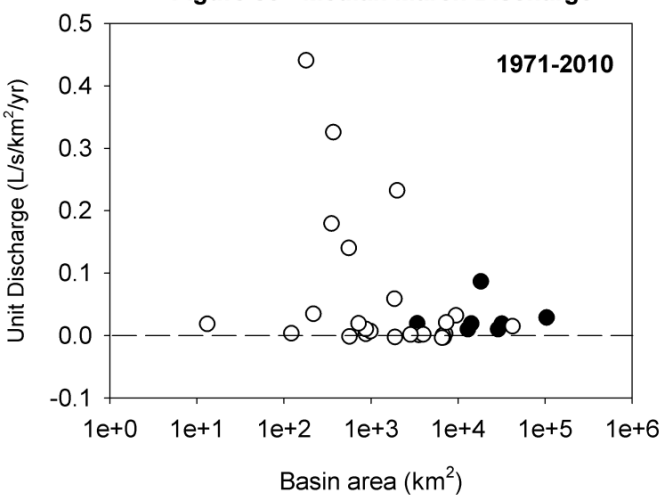


Figure 84 - Median April Discharge

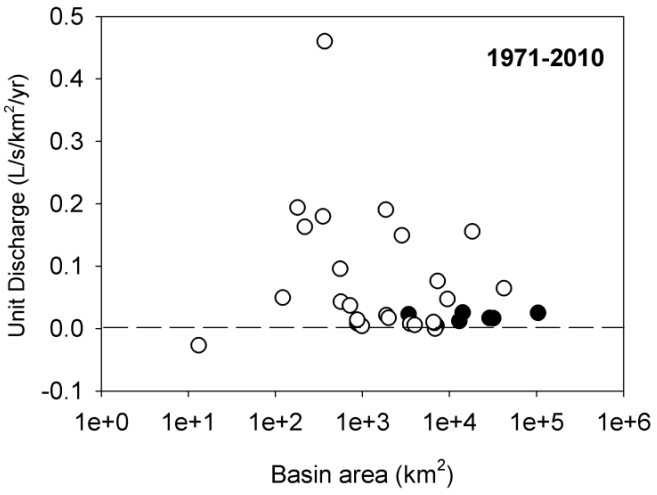


Figure 85 - Median May Discharge

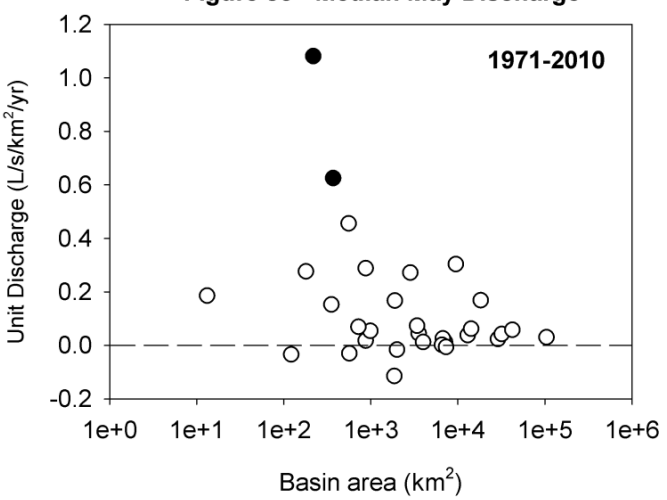


Figure 86 - Median June Discharge

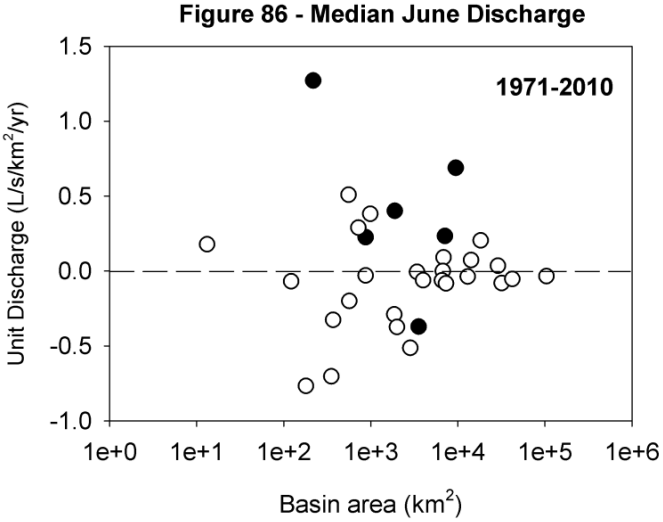
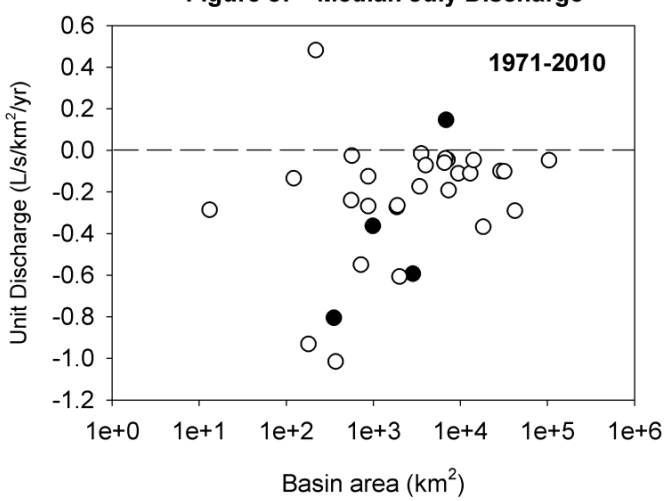


Figure 87 - Median July Discharge



Figures 88-92: Basin area (1971-2010)

Figure 88 - Median August Discharge

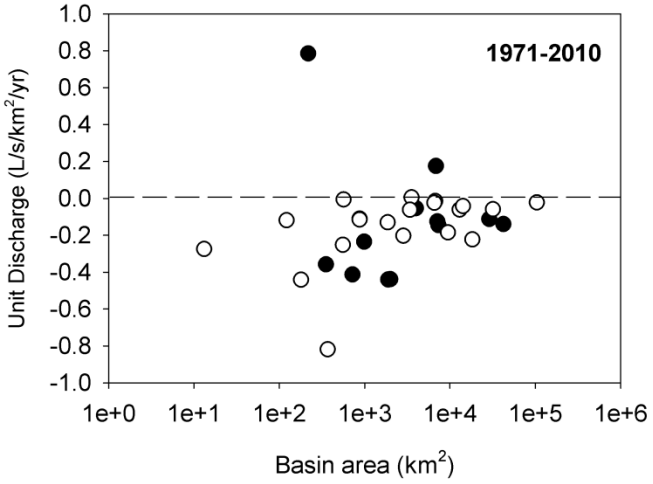


Figure 89 - Median September Discharge

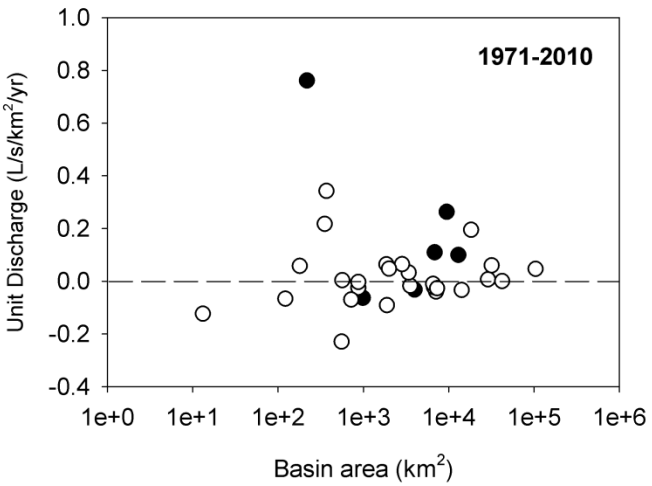


Figure 90 - Median October Discharge

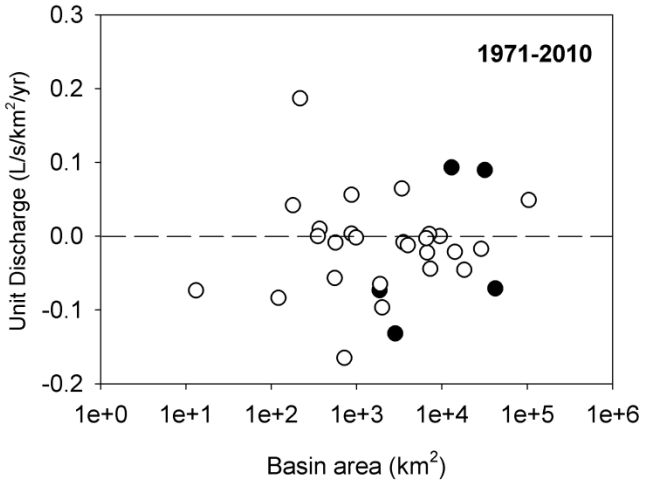


Figure 91 - Median November Discharge

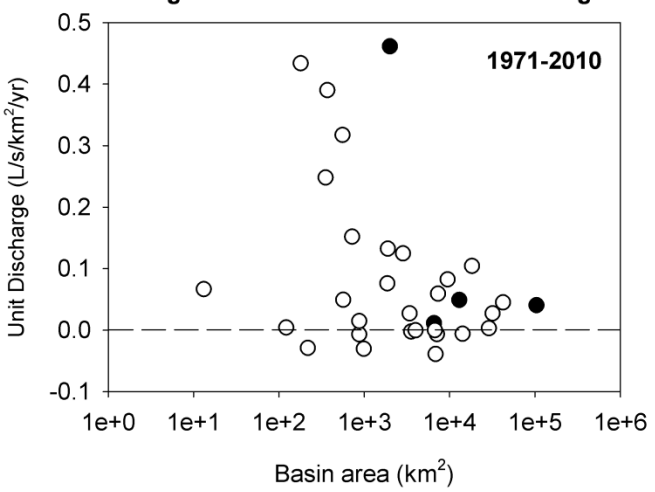
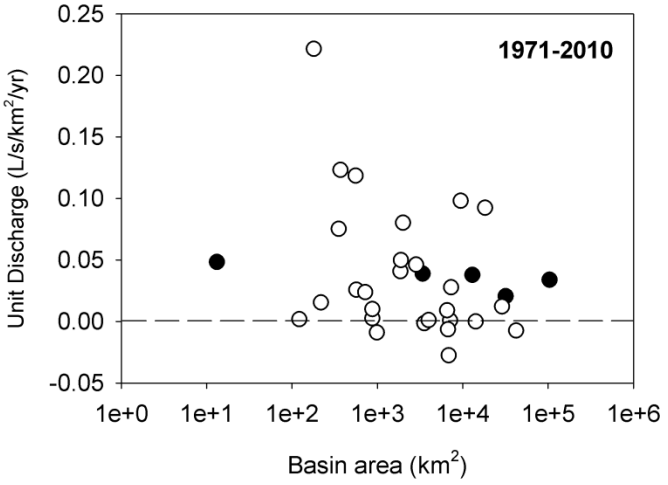


Figure 92 - Median December Discharge



Figures 93-98: Median elevation (1981-2010)

Figure 93 - Minimum Annual Daily Average Discharge

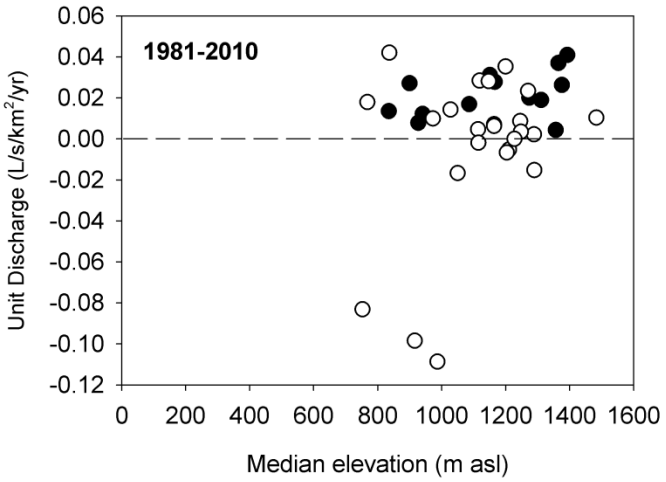


Figure 94 - Date of Freshet Initiation

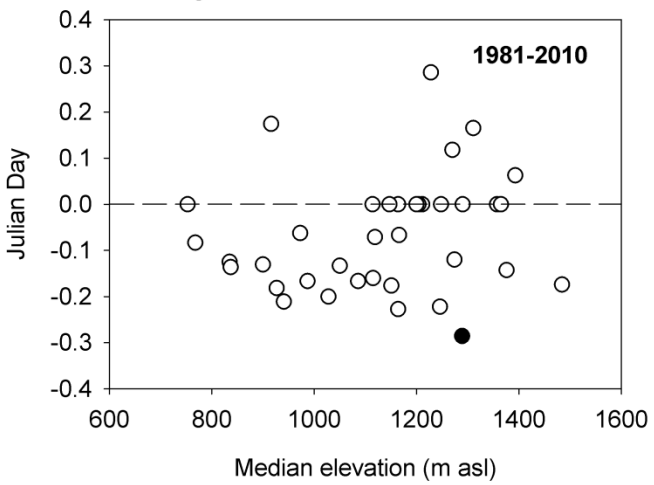


Figure 95 - Date of Center of Hydrograph Mass

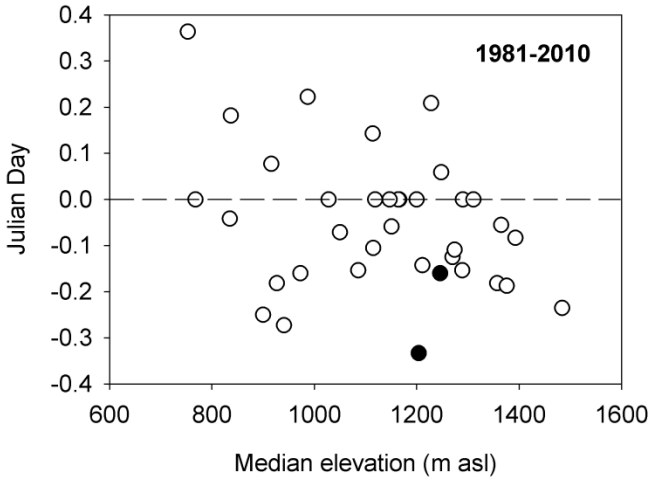


Figure 96 - Median Annual Daily Average Discharge

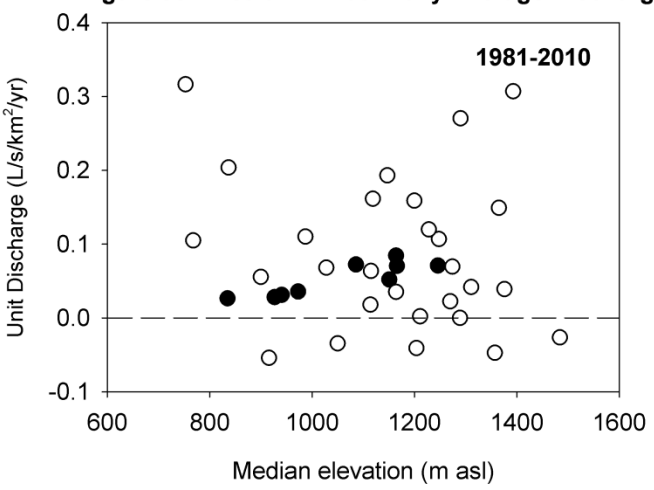


Figure 97 - Average Annual Daily Average Discharge

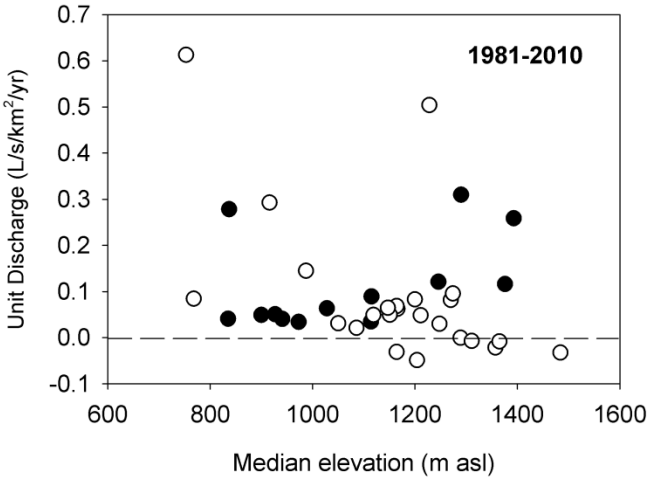
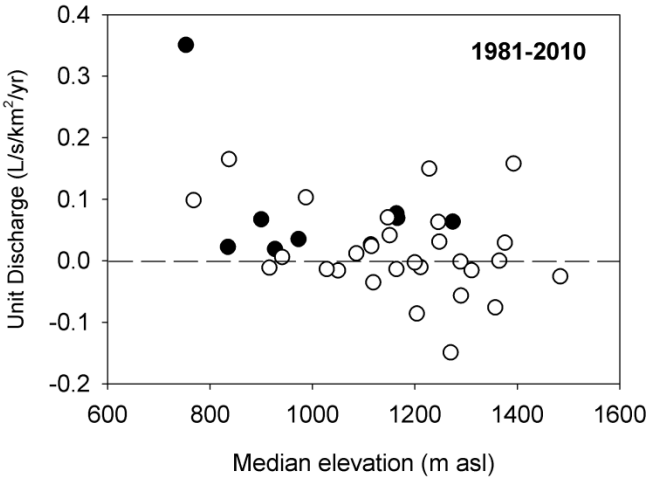


Figure 98 - Median Water Year (Oct.-Sept.) Discharge



Figures 99-104: Median elevation (1981-2010)

Figure 99 - Average Water Year (Oct.-Sept.) Discharge

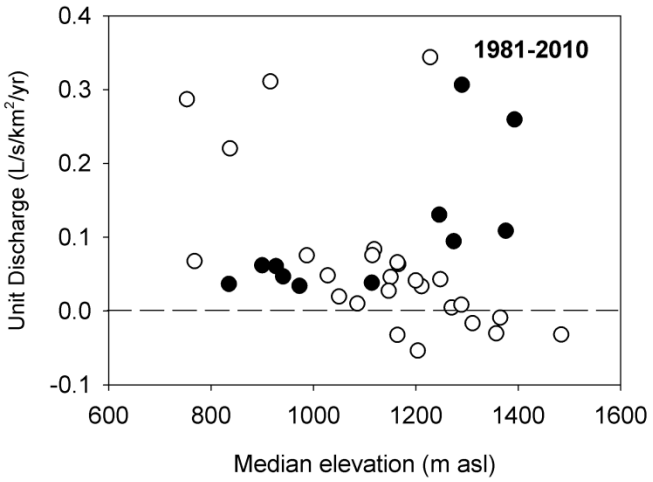


Figure 100 - Annual Minimum 7-day Average Discharge

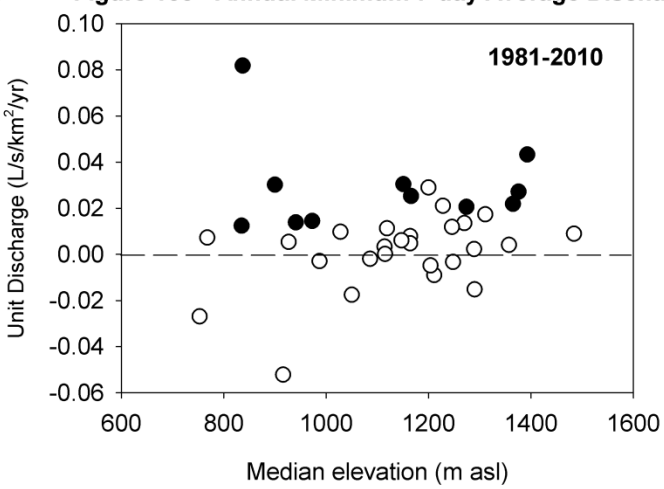


Figure 101 - Annual Minimum 30-day Average Discharge

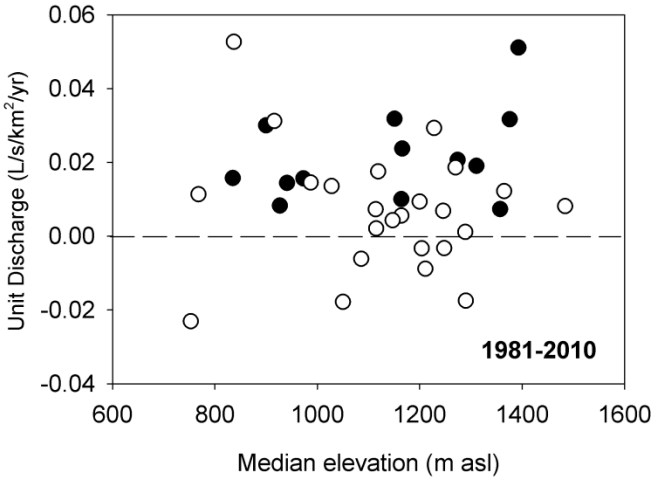


Figure 102 - June-Sept. Min. 7-day Average Discharge

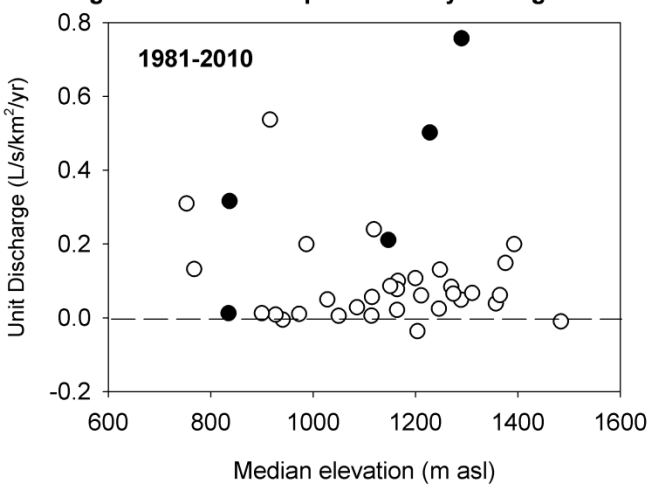


Figure 103 - June-Sept. Min. 30-day Average Discharge

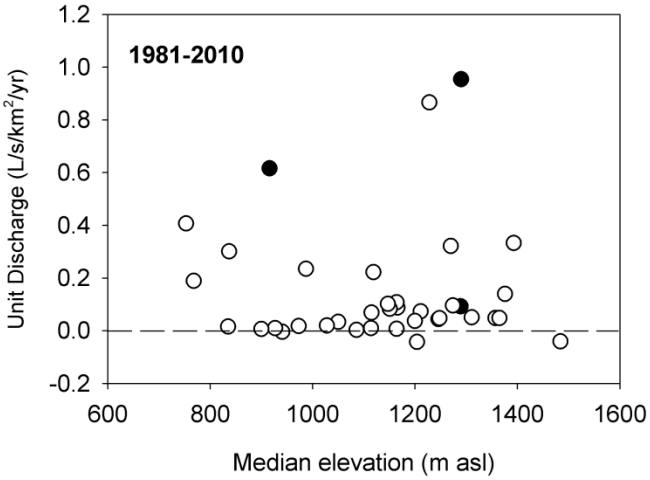
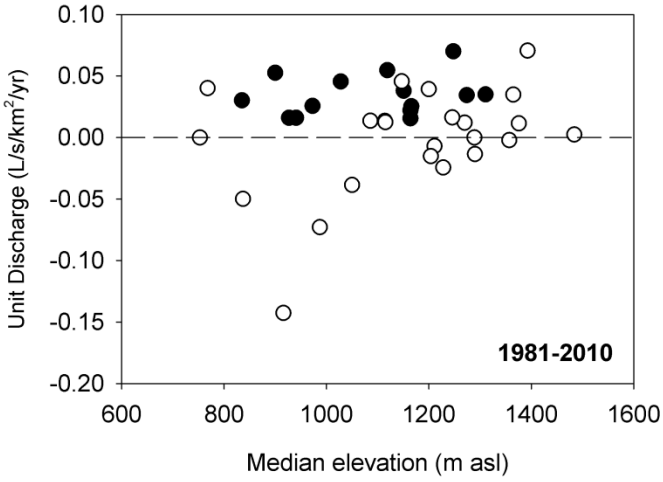
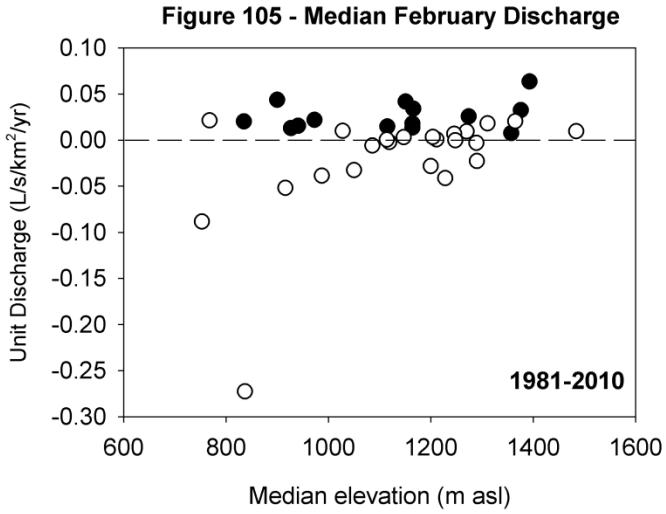
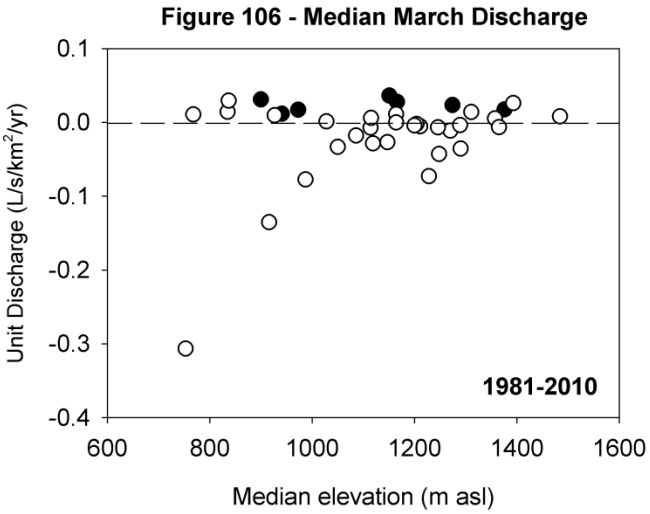


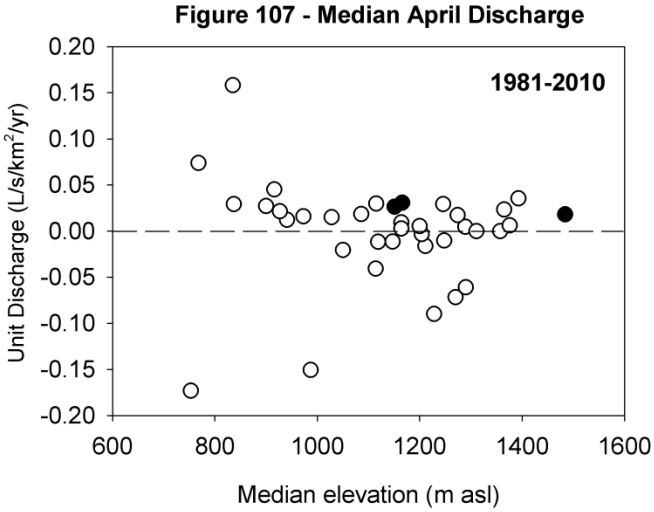
Figure 104 - Median January Discharge

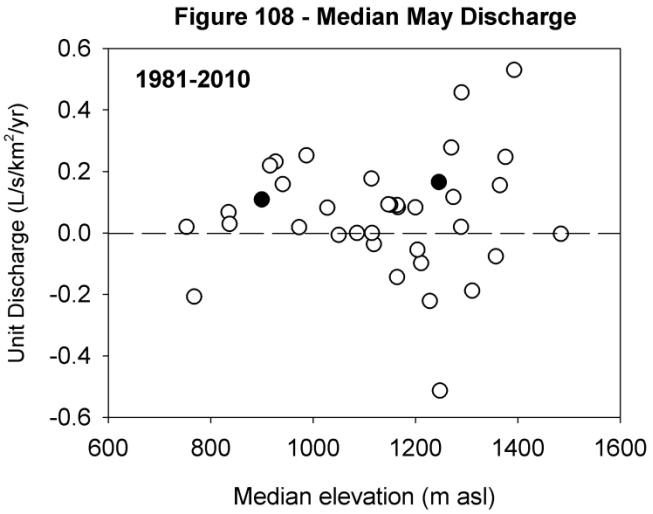


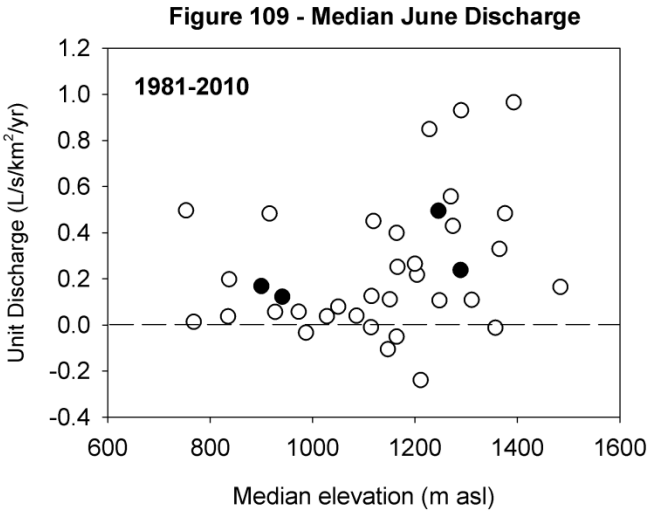
Figures 105-110: Median elevation (1981-2010)

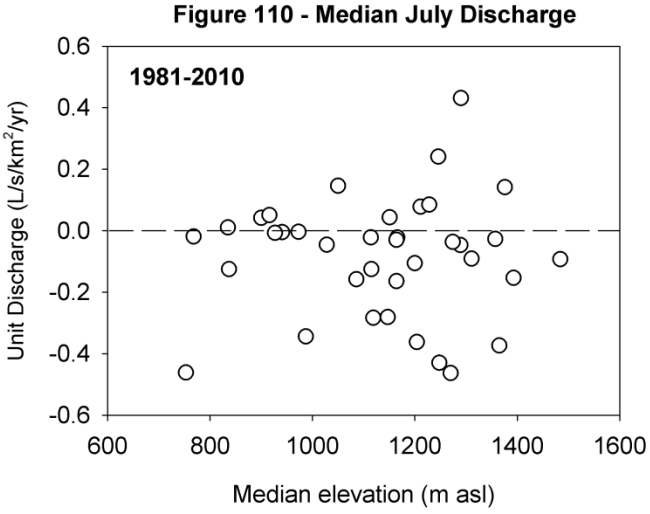




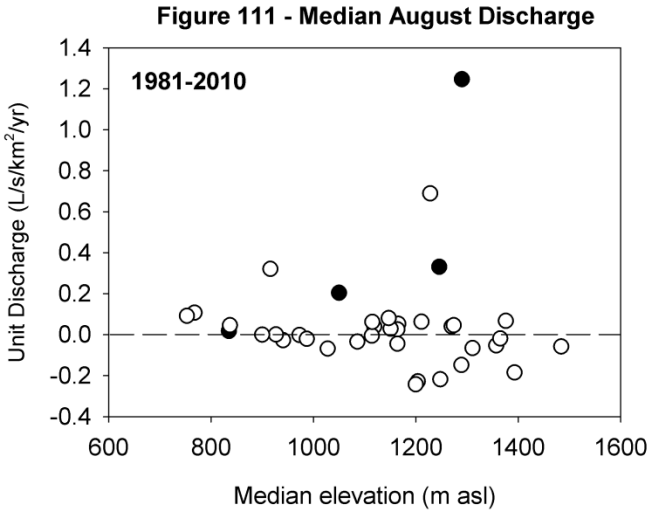


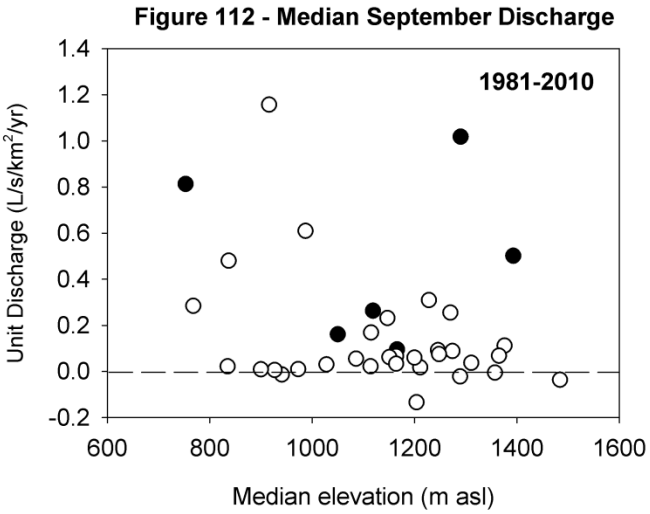


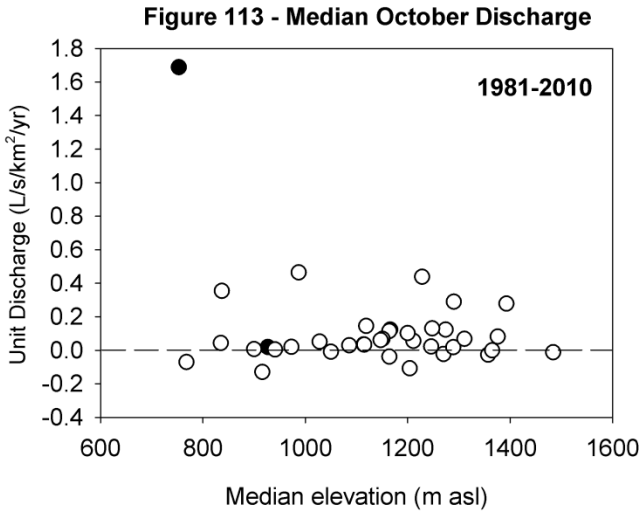


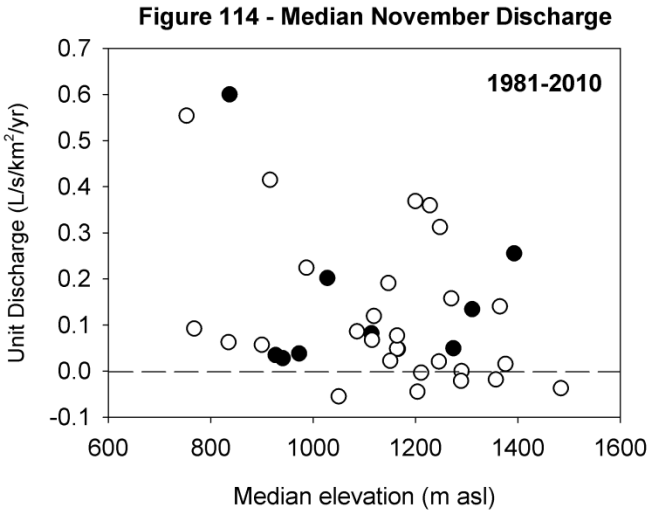


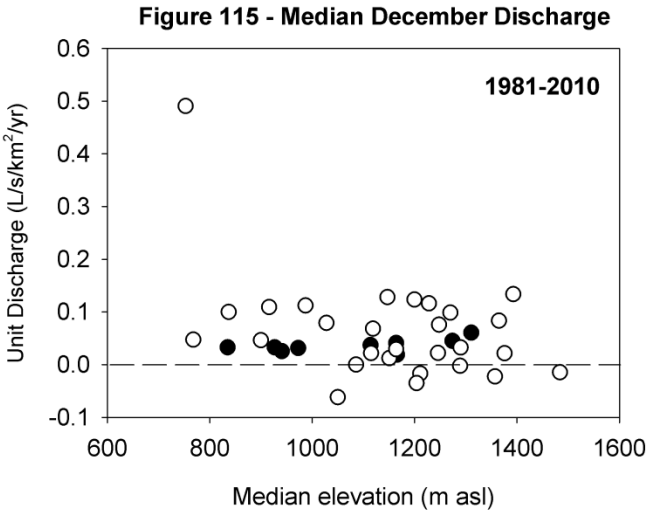
Figures 111-115: Median elevation (1981-2010)











Figures 116-121: Basin area (1981-2010)

Figure 116 - Minimum Annual Daily Average Discharge

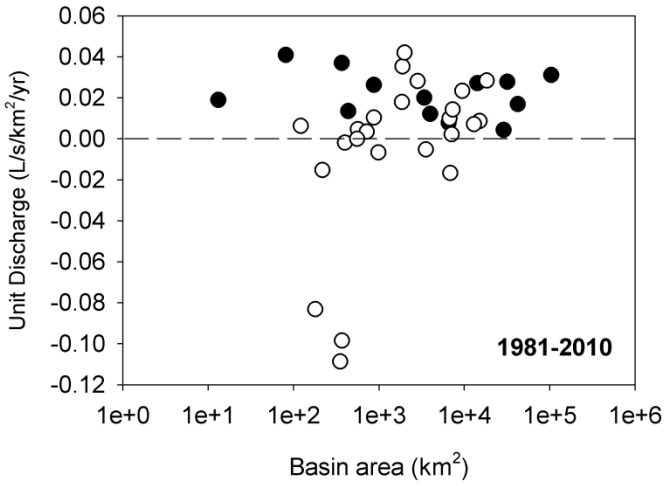


Figure 117 - Date of Freshet Initiation

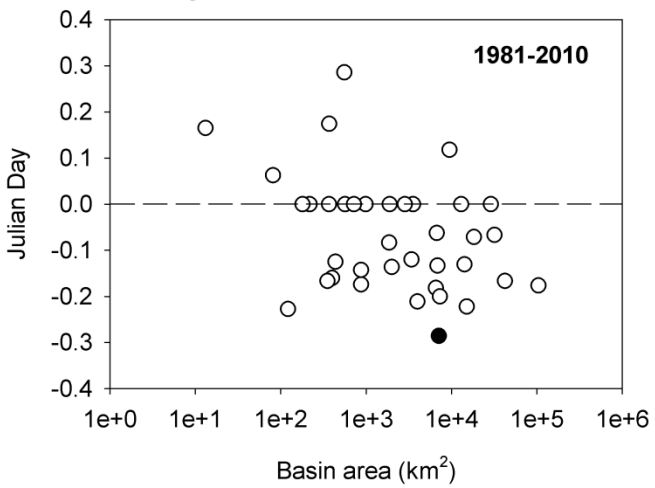


Figure 118 - Date of Center of Hydrograph Mass

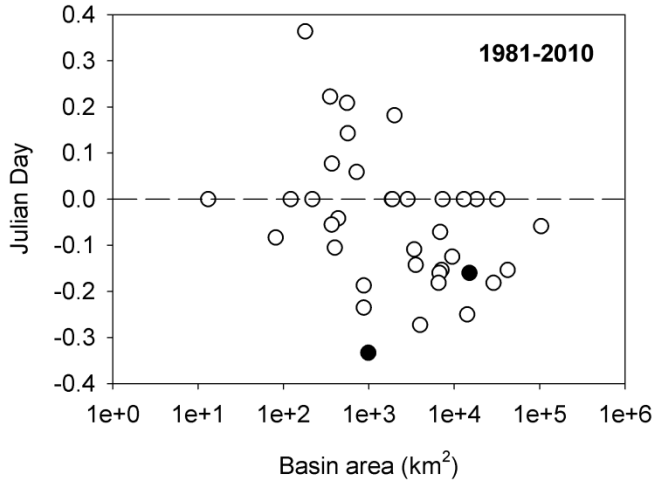


Figure 119 - Median Annual Daily Average Discharge

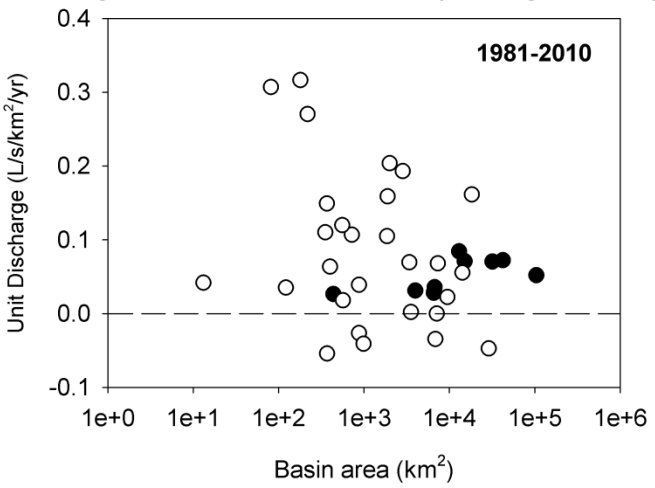


Figure 120 - Average Annual Daily Average Discharge

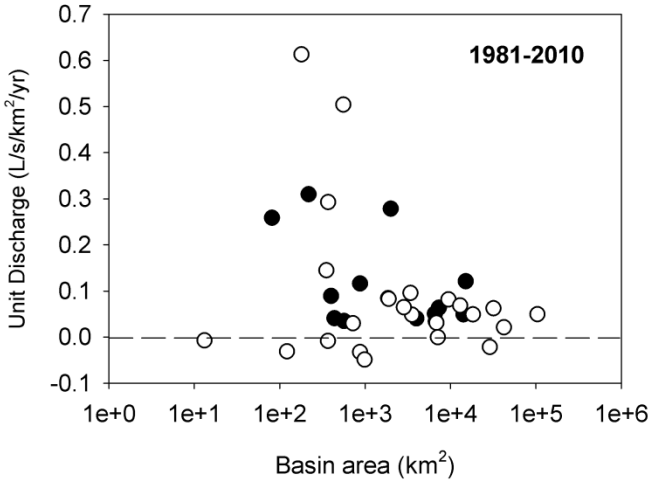
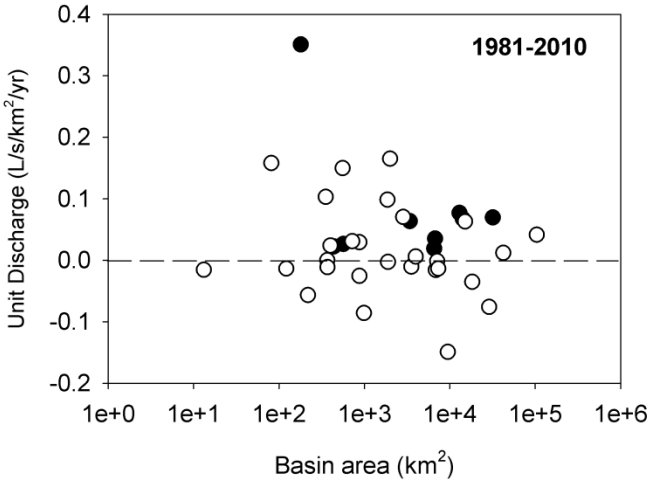


Figure 121 - Median Water Year (Oct.-Sept.) Discharge



Figures 122-127: Basin area (1981-2010)

Figure 122 - Average Water Year (Oct.-Sept.) Discharge

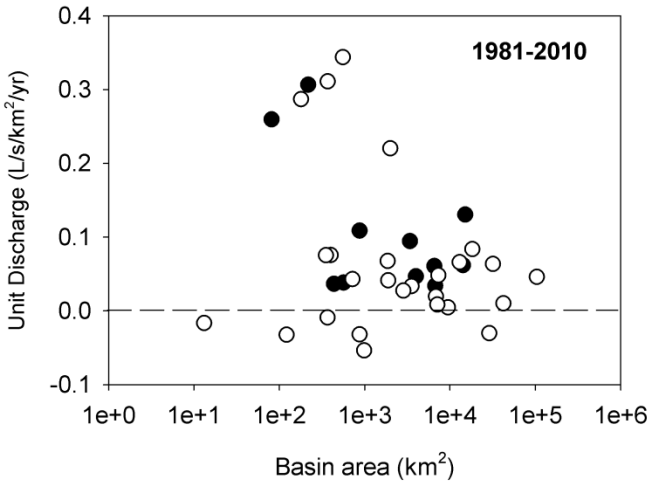


Figure 123 - Annual Minimum 7-day Average Discharge

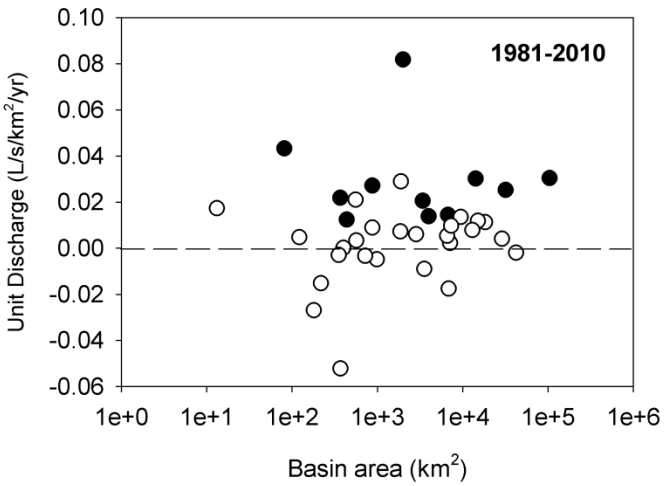


Figure 124 - Annual Minimum 30-day Average Discharge

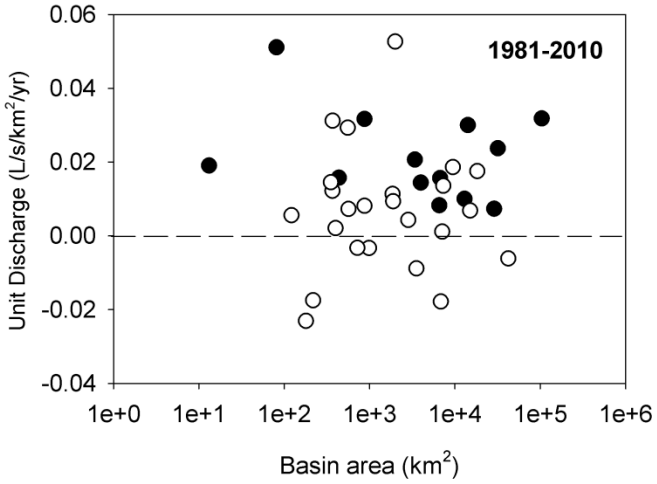


Figure 125 - June-Sept. Min. 7-day Average Discharge

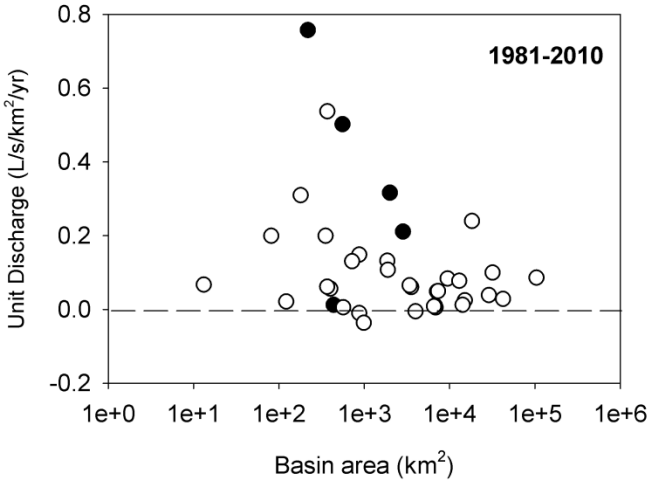


Figure 126 - June-Sept. Min. 30-day Average Discharge

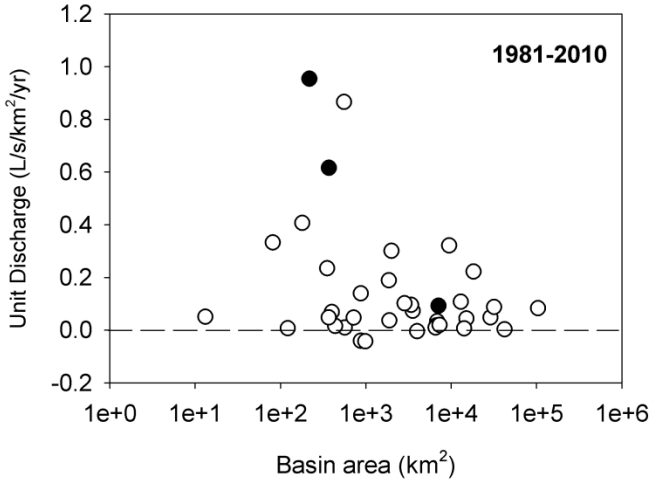
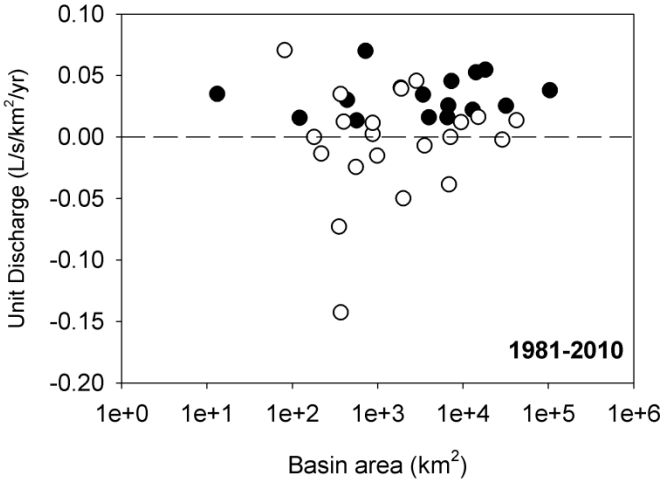


Figure 127 - Median January Discharge



Figures 128-133: Basin area (1981-2010)

Figure 128 - Median February Discharge

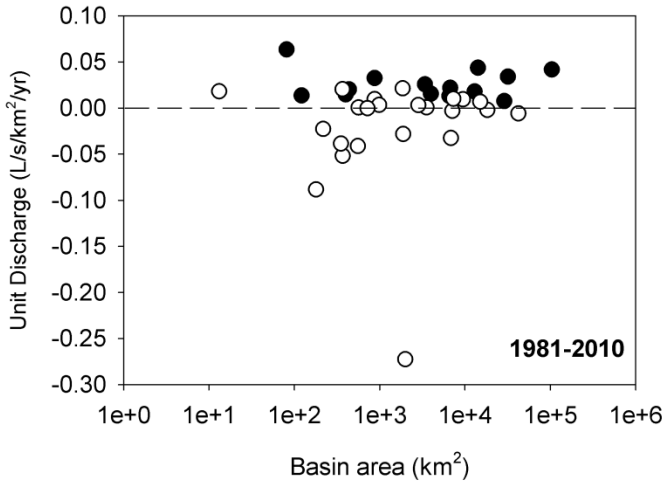


Figure 129 - Median March Discharge

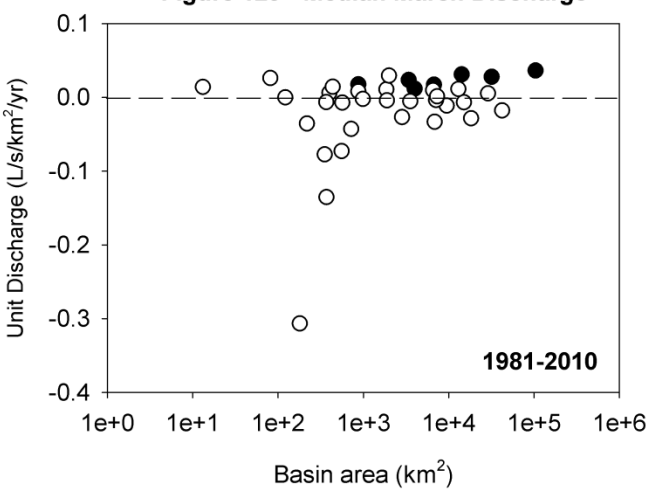


Figure 130 - Median April Discharge

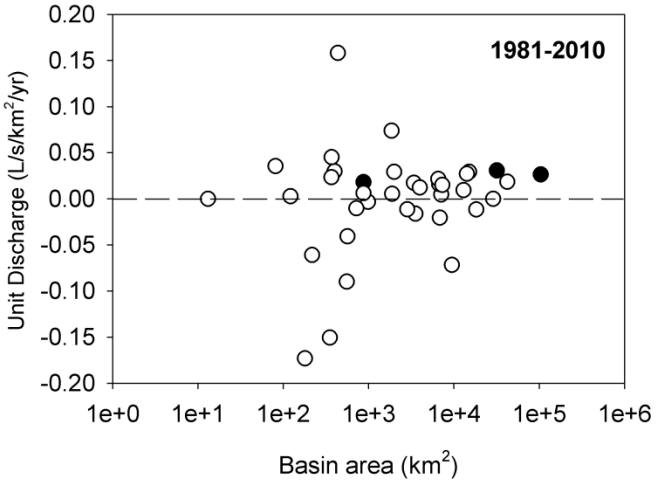


Figure 131 - Median May Discharge

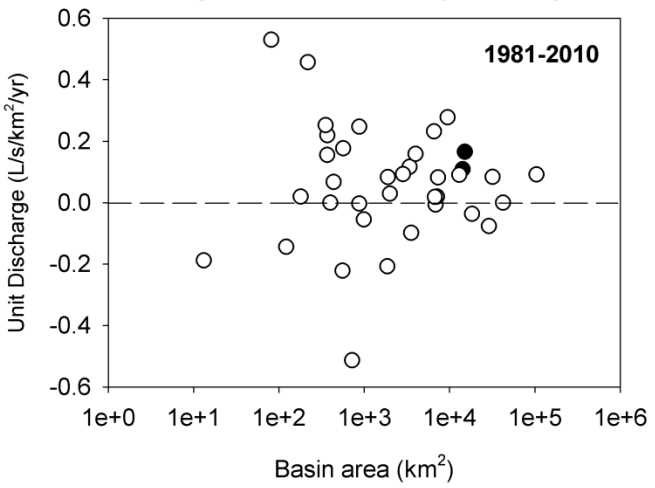


Figure 132 - Median June Discharge

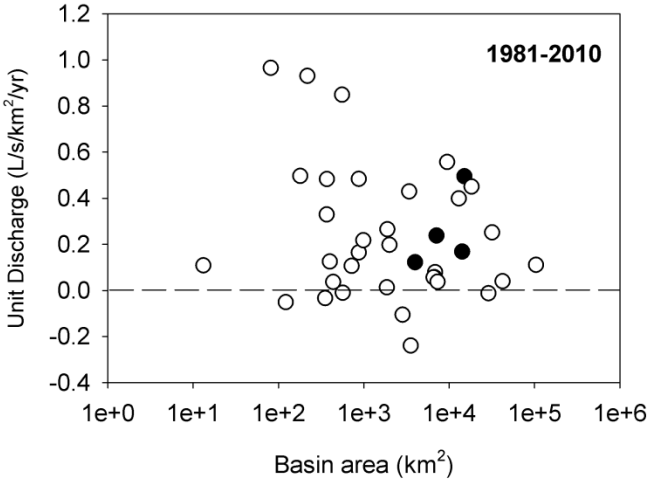
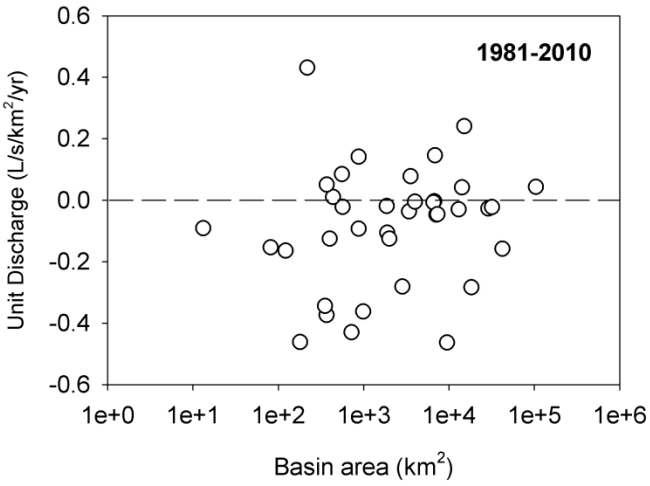


Figure 133 - Median July Discharge



Figures 134-138: Basin area (1981-2010)

Figure 134 - Median August Discharge

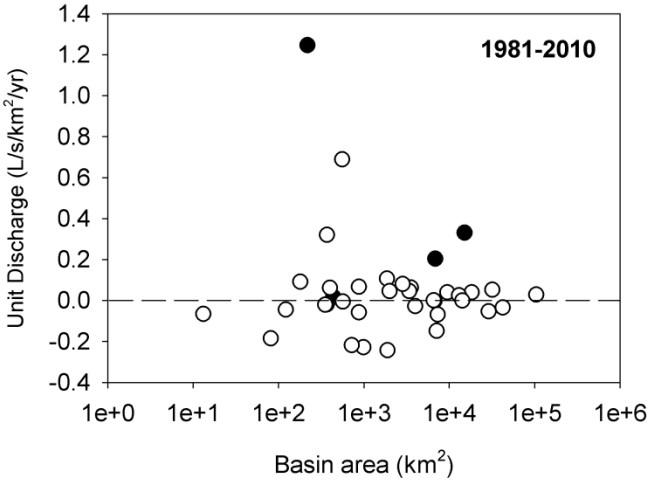


Figure 135 - Median September Discharge

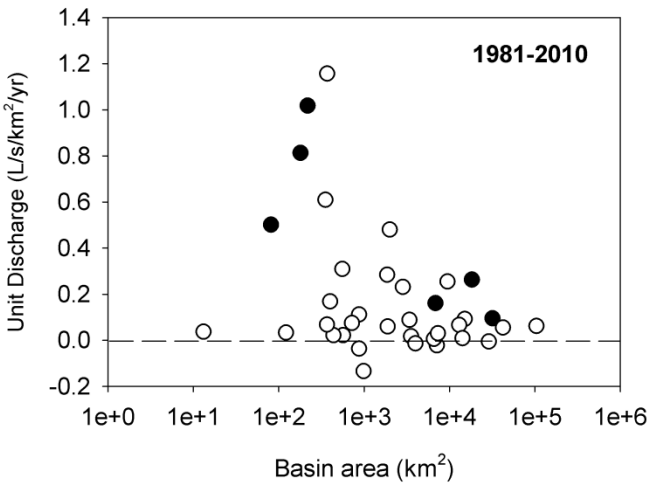


Figure 136 - Median October Discharge

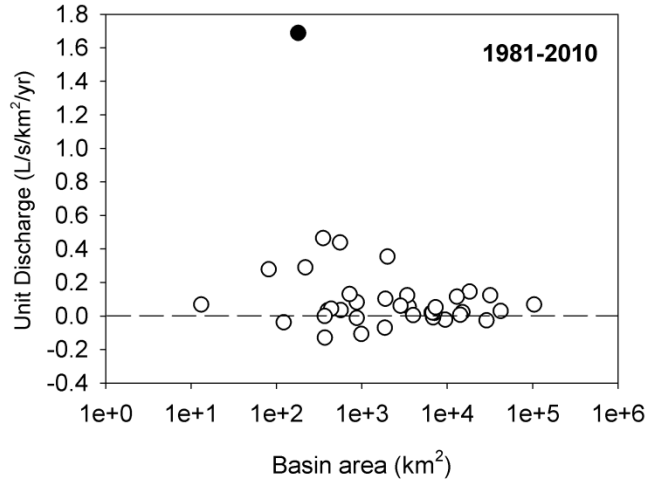


Figure 137 - Median November Discharge

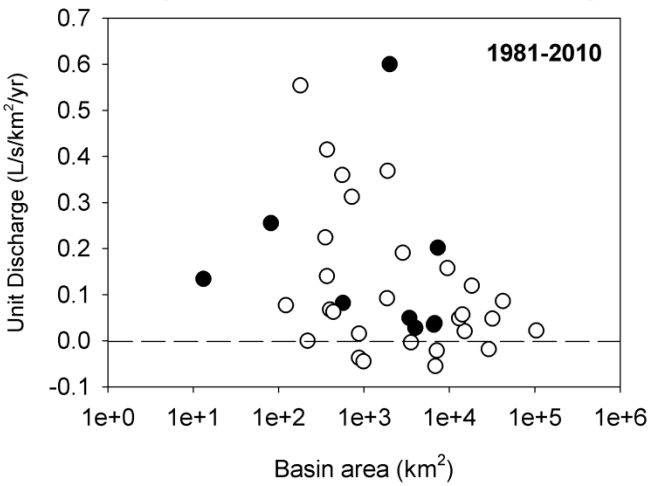
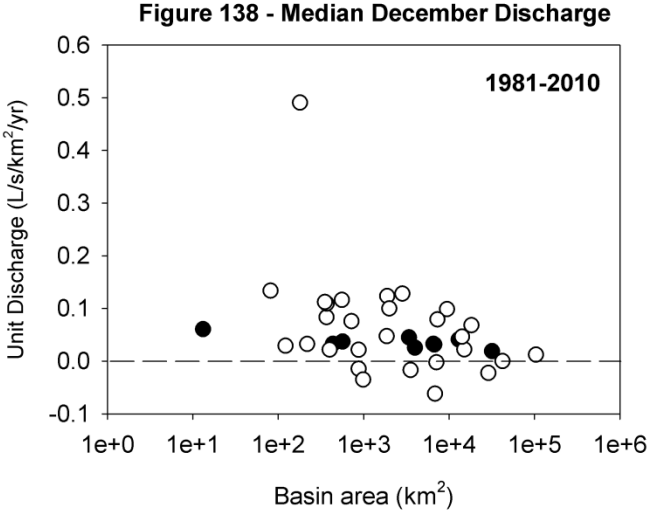


Figure 138 - Median December Discharge



Figures 139-144: Median elevation (1997-2010)

Figure 139 - Minimum Annual Daily Average Discharge

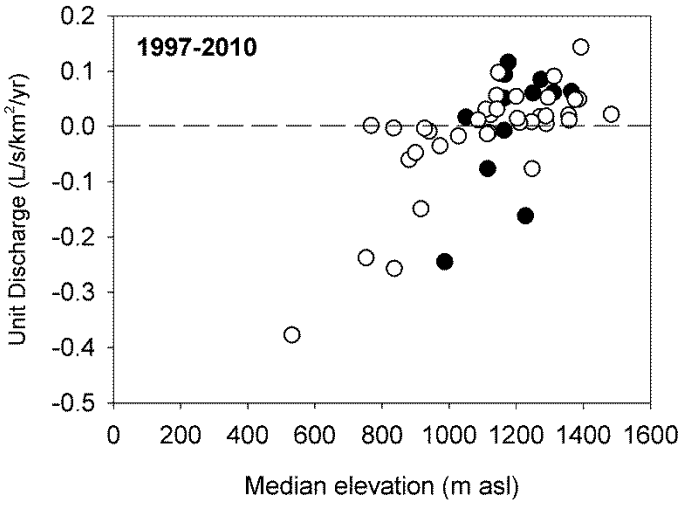


Figure 140 - Date of Freshet Initiation

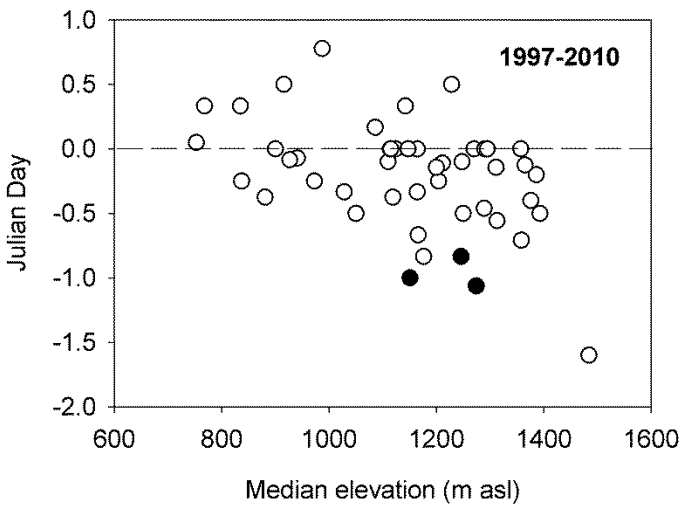


Figure 141 - Date of Center of Hydrograph Mass

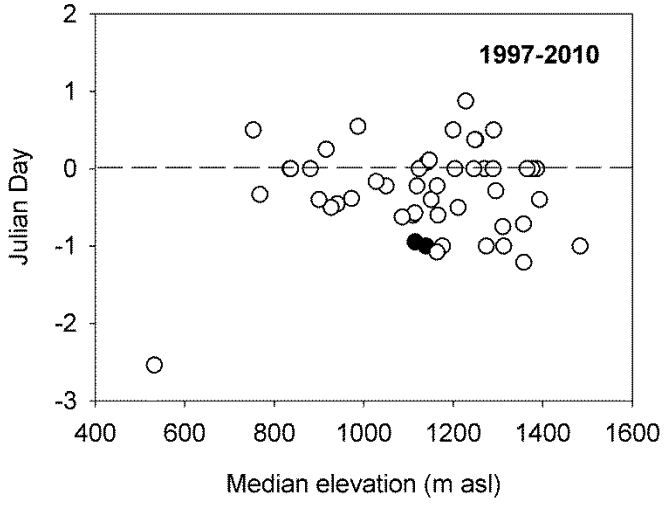


Figure 142 - Median Annual Daily Average Discharge

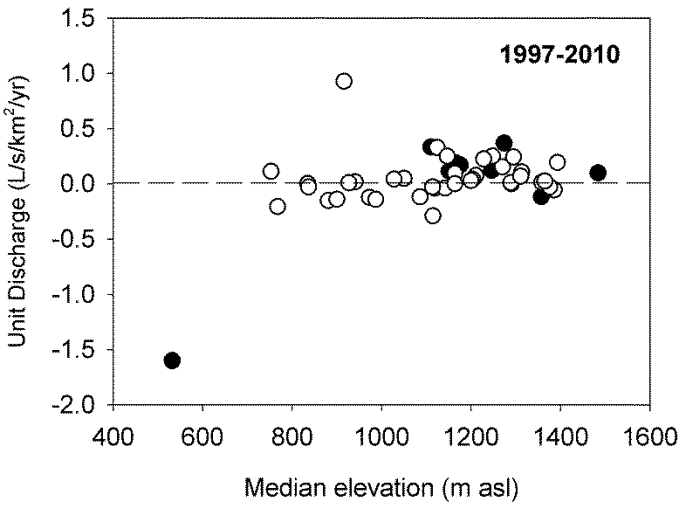


Figure 143 - Average Annual Daily Average Discharge

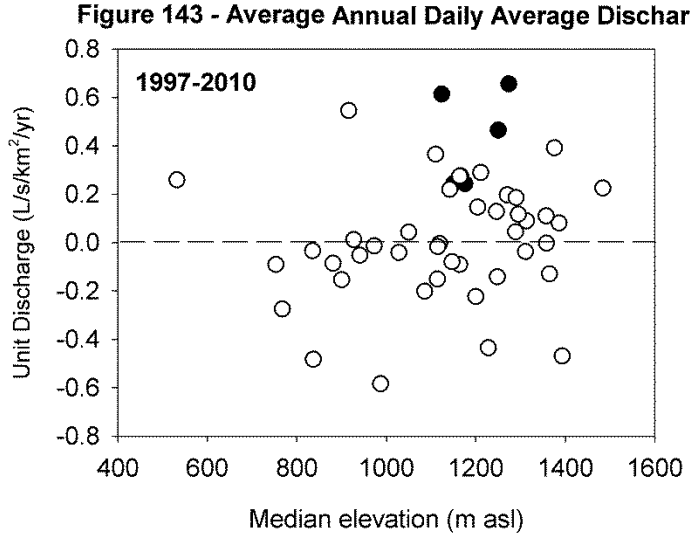
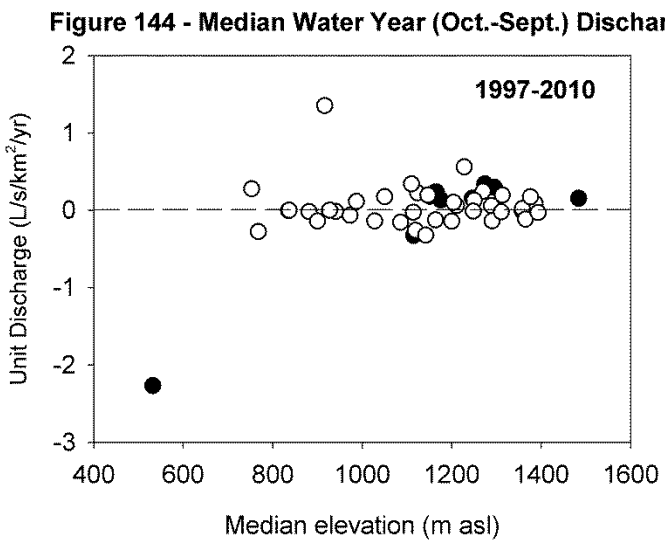


Figure 144 - Median Water Year (Oct.-Sept.) Discharge



Figures 145-150: Median elevation (1997-2010)

Figure 145 - Average Water Year (Oct.-Sept.) Discharge

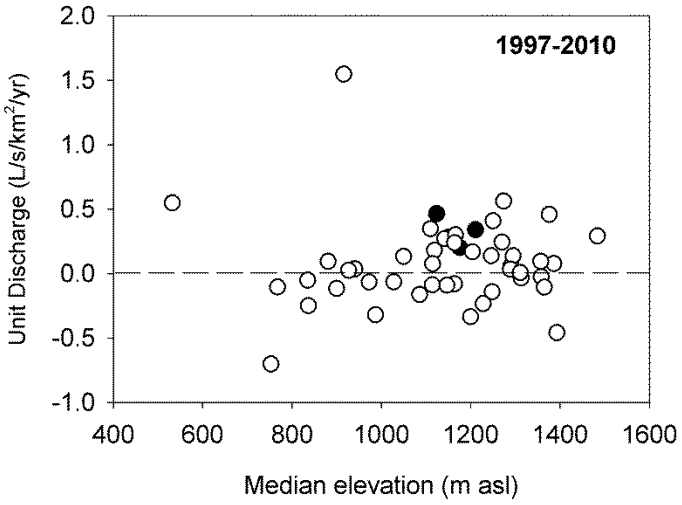


Figure 146 - Annual Minimum 7-day Average Discharge

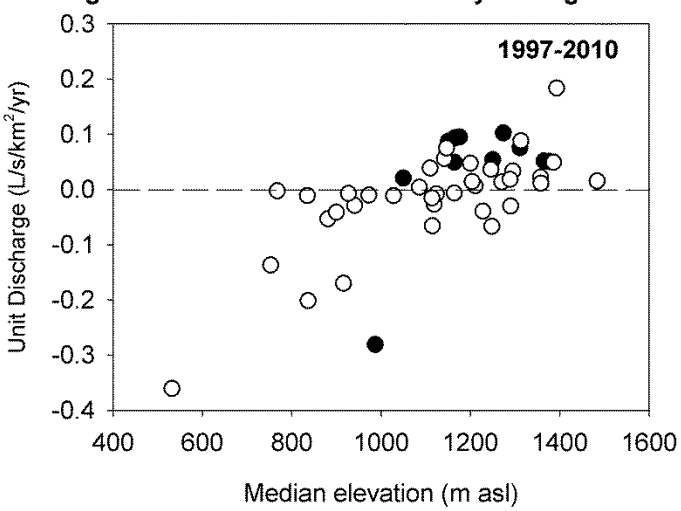


Figure 147 - Annual Minimum 30-day Average Discharge

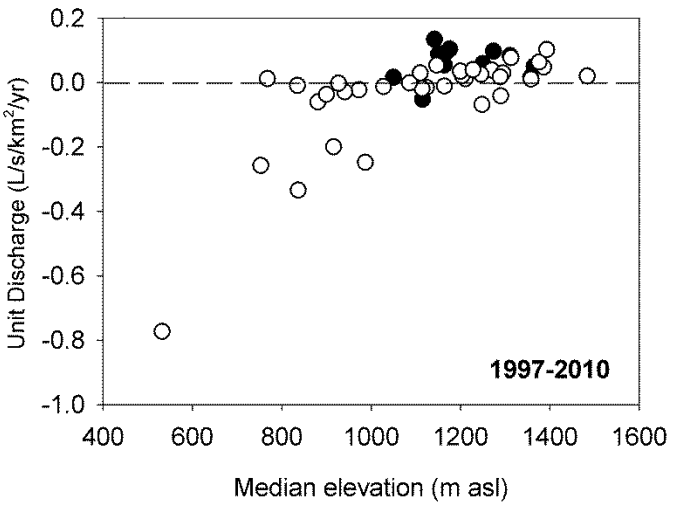


Figure 148 - June-Sept. Min. 7-day Average Discharge

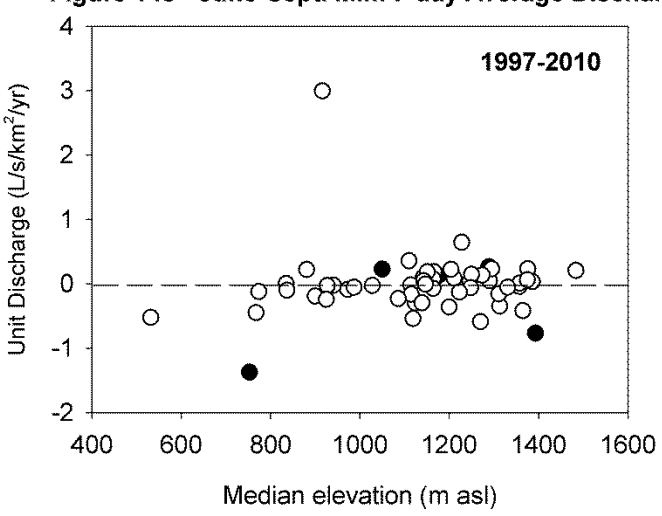


Figure 149 - June-Sept. Min. 30-day Average Discharge

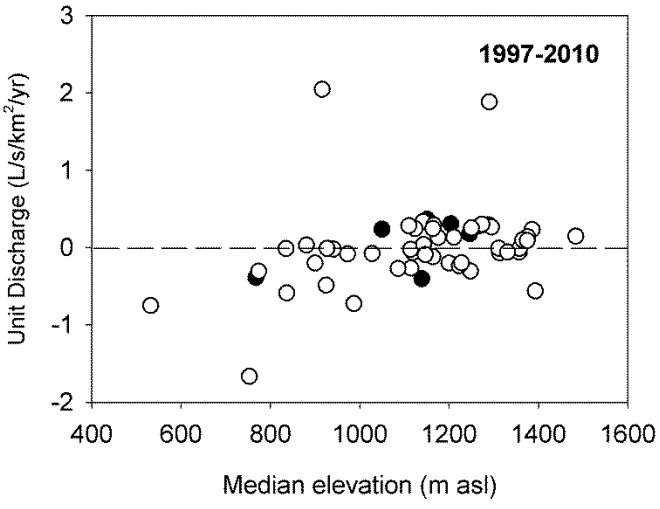
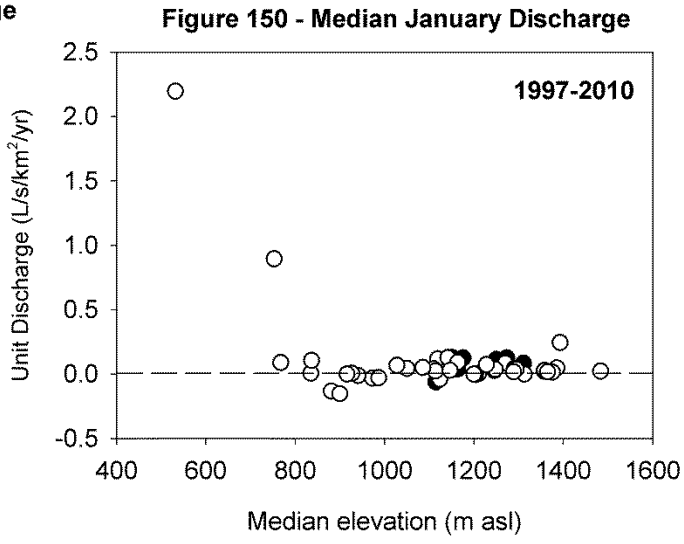


Figure 150 - Median January Discharge



Figures 151-156: Median elevation (1997-2010)

Figure 151 - Median February Discharge

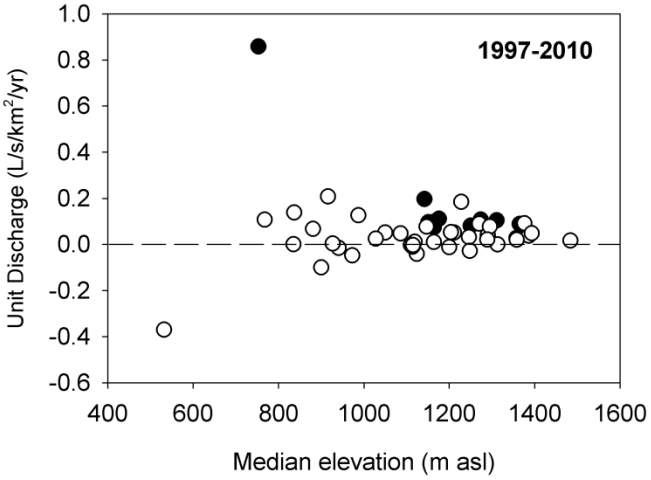


Figure 152 - Median March Discharge

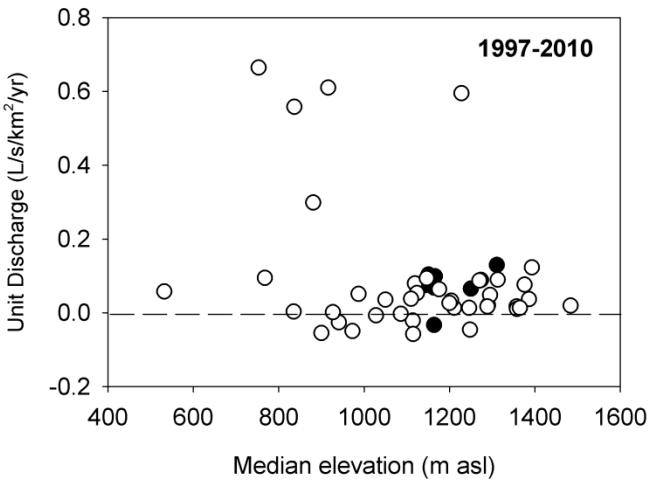


Figure 153 - Median April Discharge

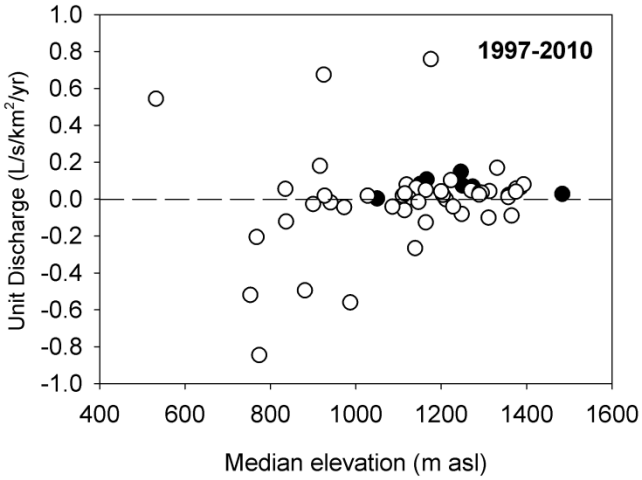


Figure 154 - Median May Discharge

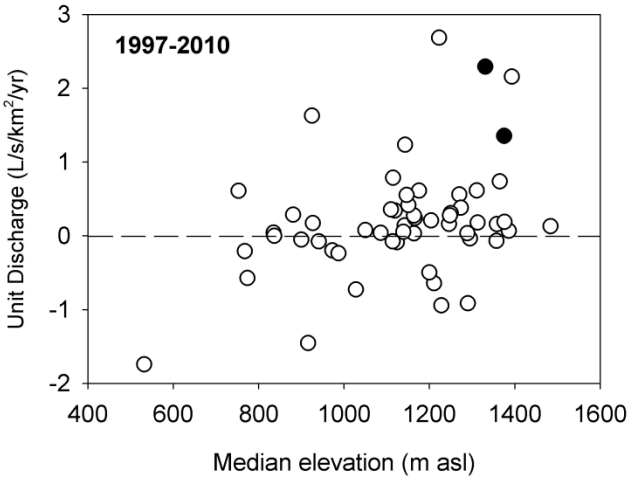


Figure 155 - Median June Discharge

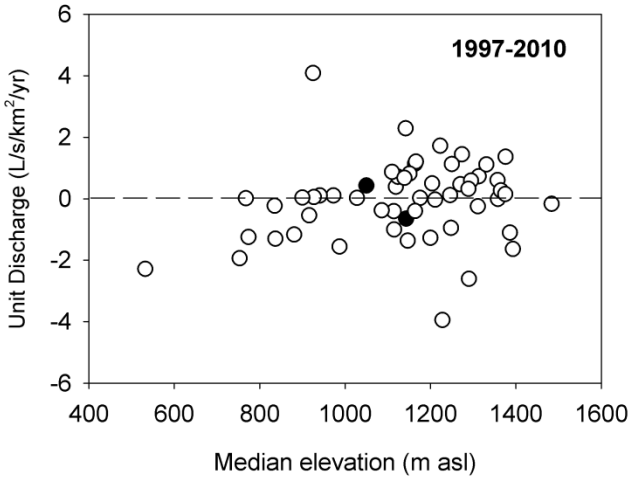
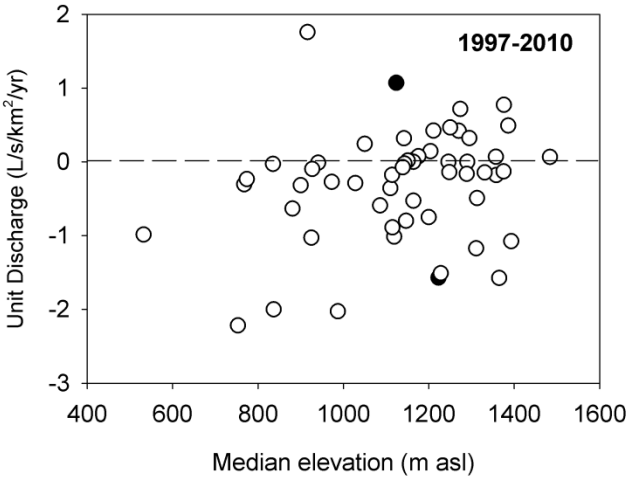


Figure 156 - Median July Discharge



Figures 157-161: Median elevation (1997-2010)

Figure 157 - Median August Discharge

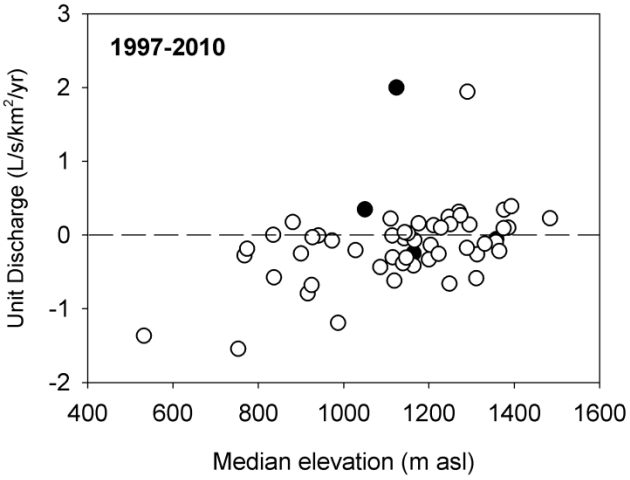


Figure 158 - Median September Discharge

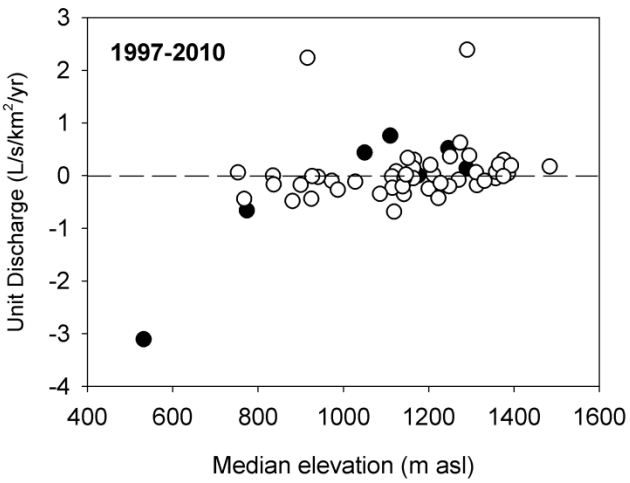


Figure 159 - Median October Discharge

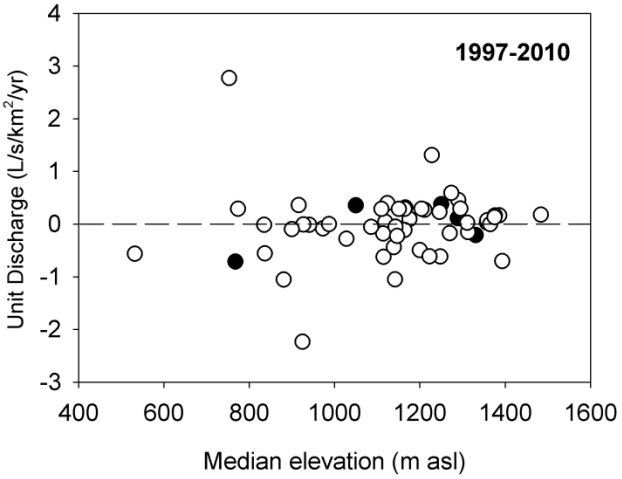


Figure 160 - Median November Discharge

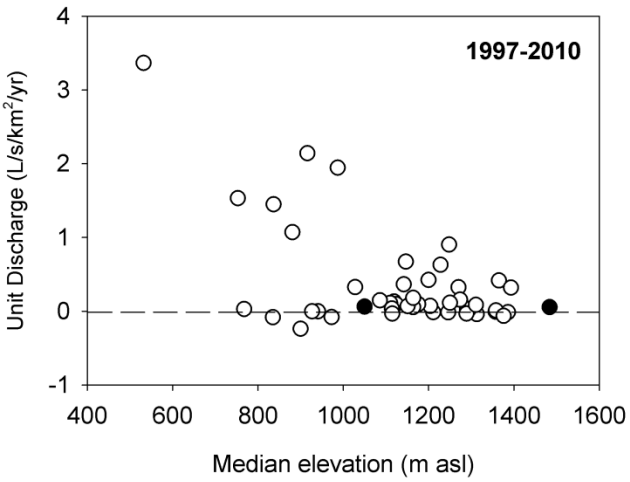
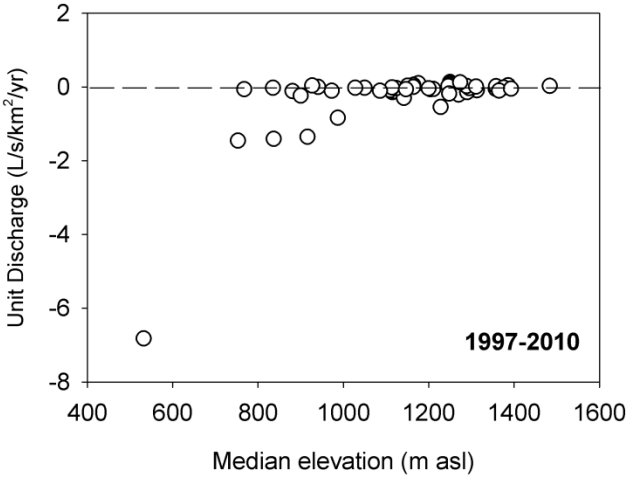


Figure 161 - Median December Discharge



Figures 162-167: Basin area (1997-2010)

Figure 162 - Minimum Annual Daily Average Discharge

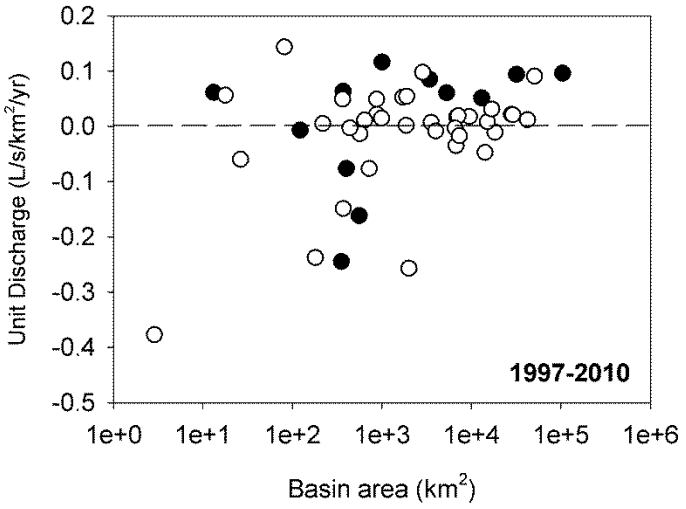


Figure 163 - Date of Freshet Initiation

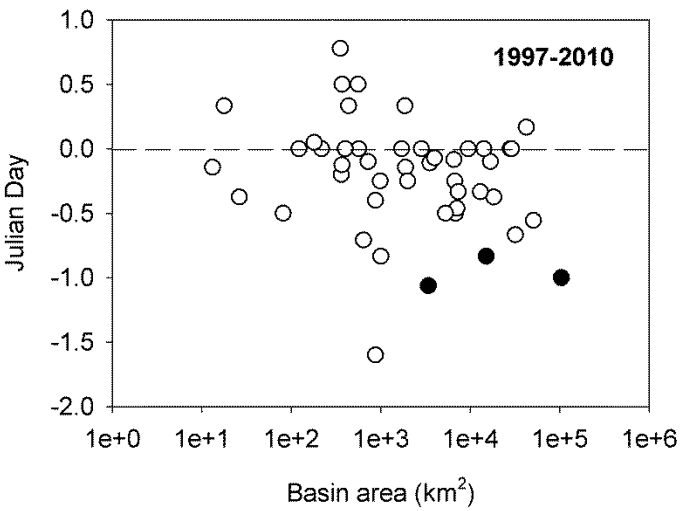


Figure 164 - Date of Center of Hydrograph Mass

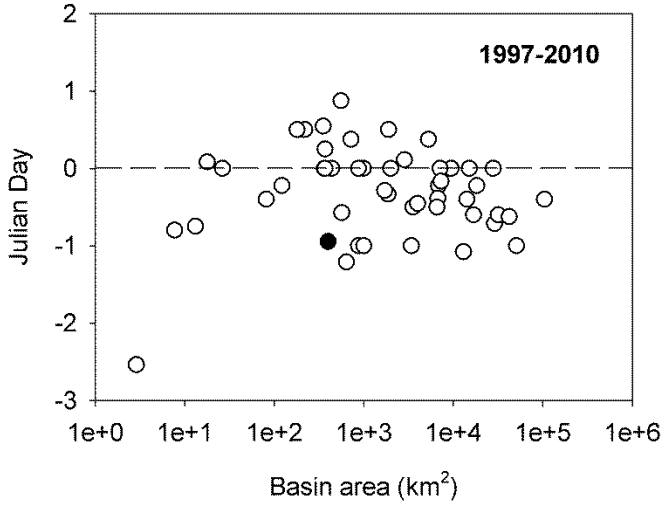


Figure 165 - Median Annual Daily Average Discharge

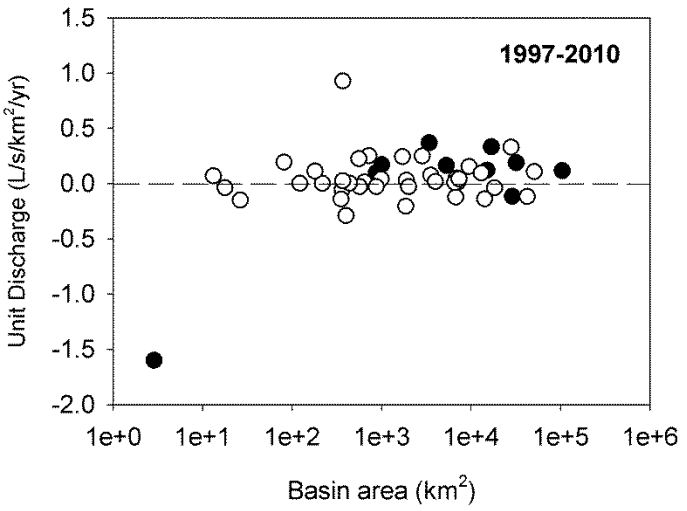


Figure 166 - Average Annual Daily Average Discharge

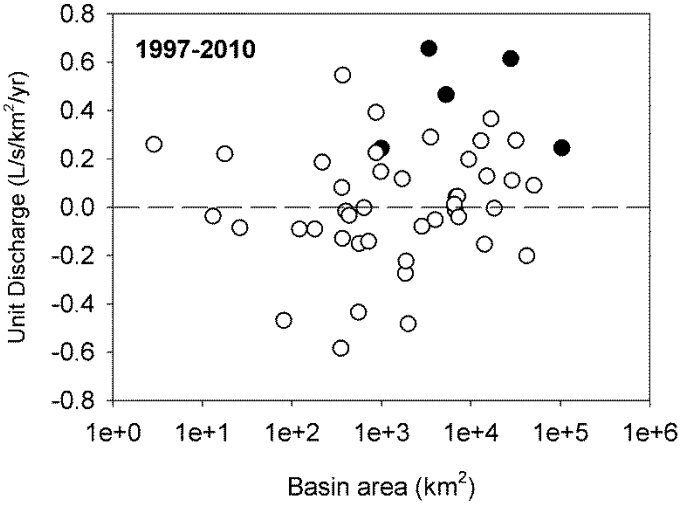
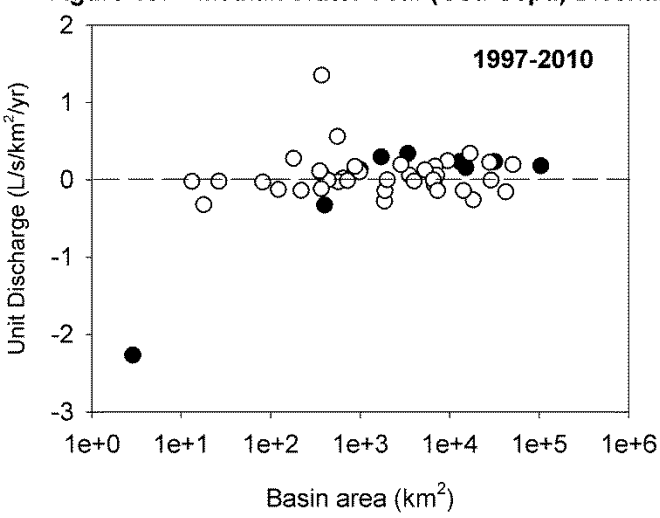


Figure 167 - Median Water Year (Oct.-Sept.) Discharge



Figures 168-173: Basin area (1997-2010)

Figure 168 - Average Water Year (Oct.-Sept.) Discharge

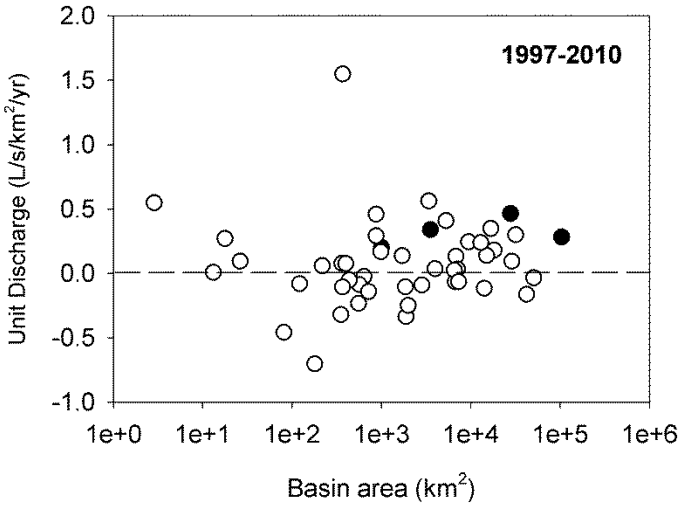


Figure 169 - Annual Minimum 7-day Average Discharge

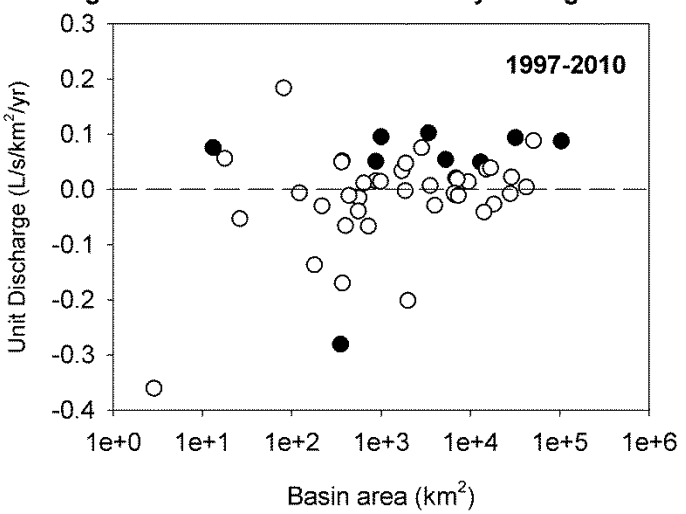


Figure 170 - Annual Minimum 30-day Average Discharge

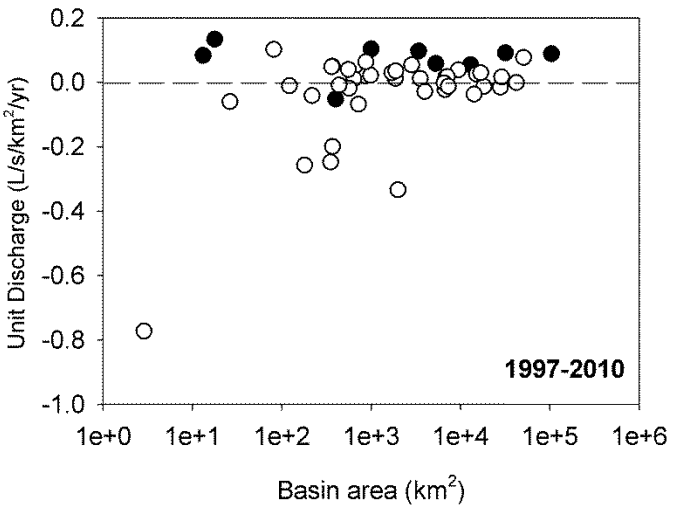


Figure 171 - June-Sept. Min. 7-day Average Discharge

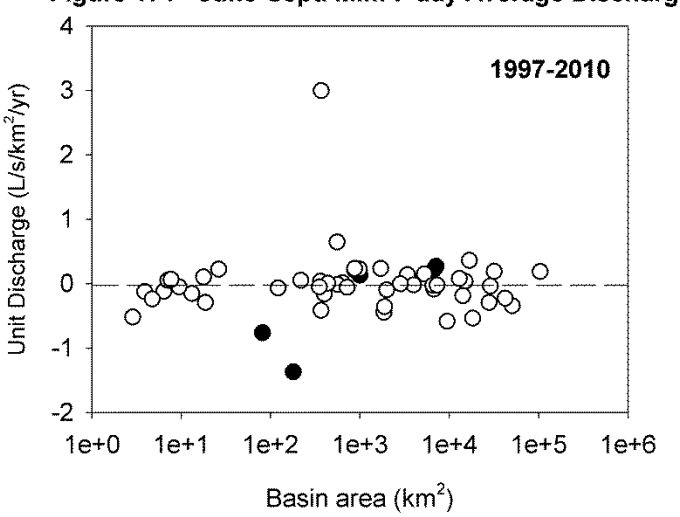


Figure 172 - June-Sept. Min. 30-day Average Discharge

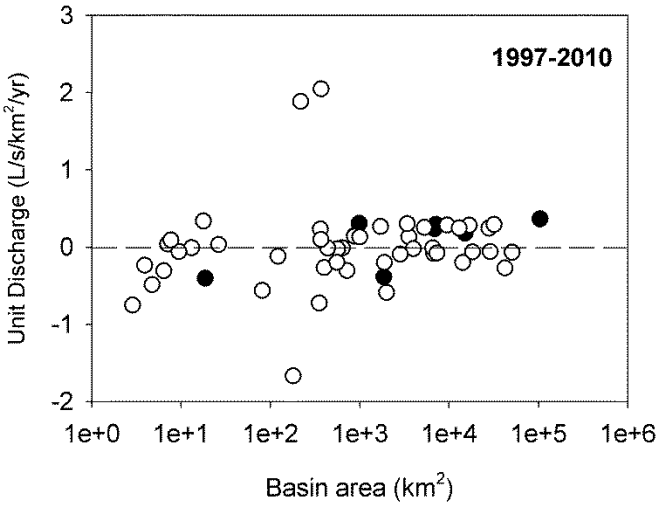
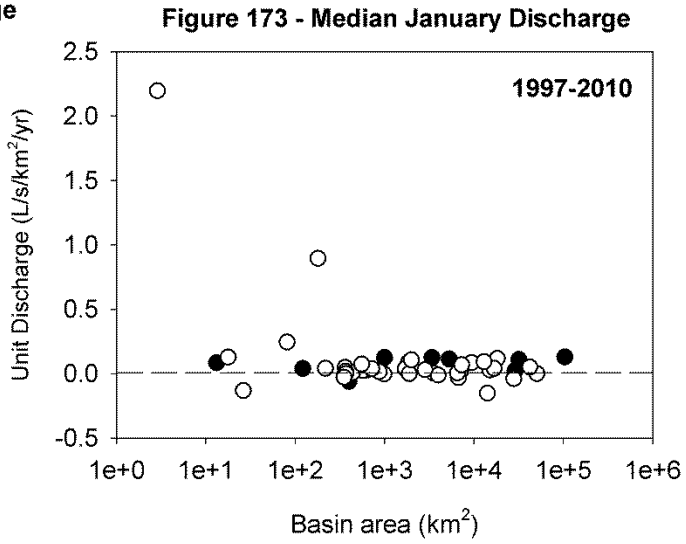


Figure 173 - Median January Discharge



Figures 174-179: Basin area (1997-2010)

Figure 174 - Median February Discharge

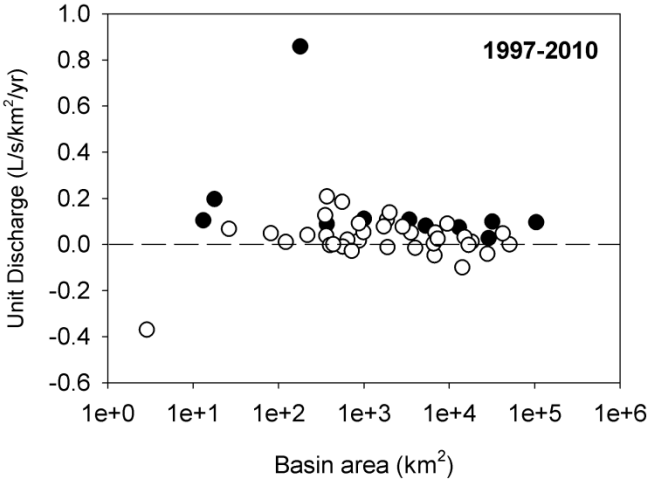


Figure 175 - Median March Discharge

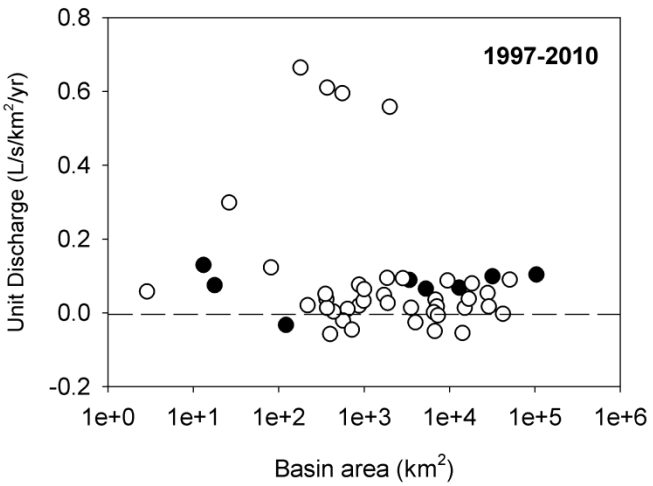


Figure 176 - Median April Discharge

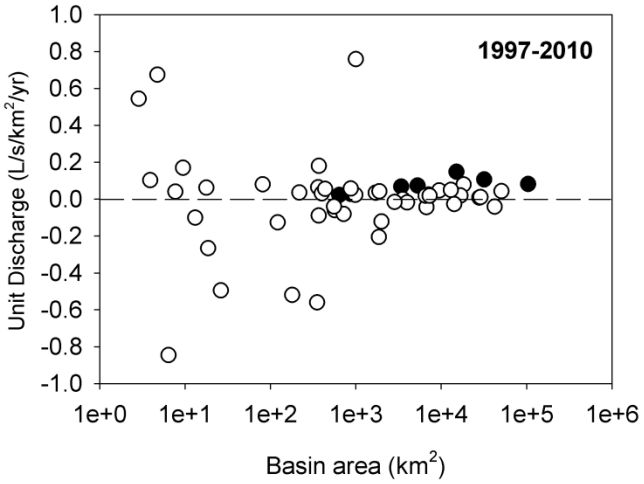


Figure 177 - Median May Discharge

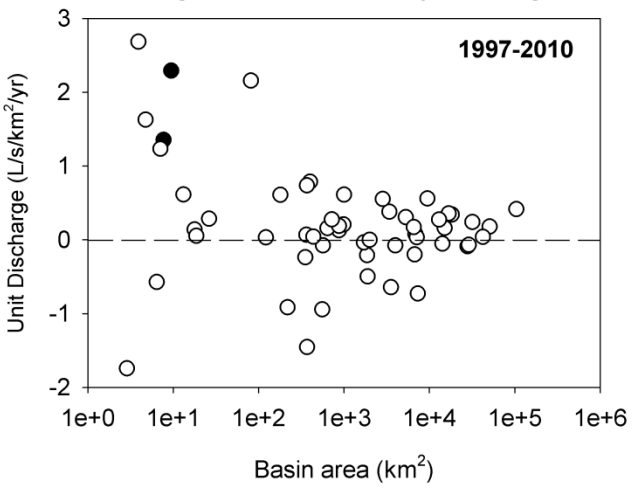


Figure 178 - Median June Discharge

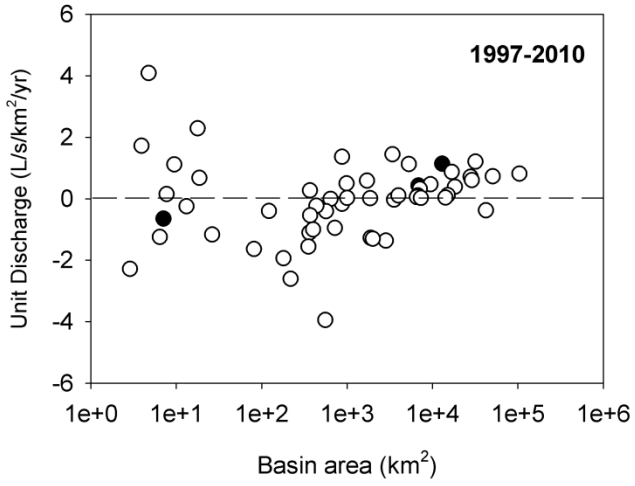
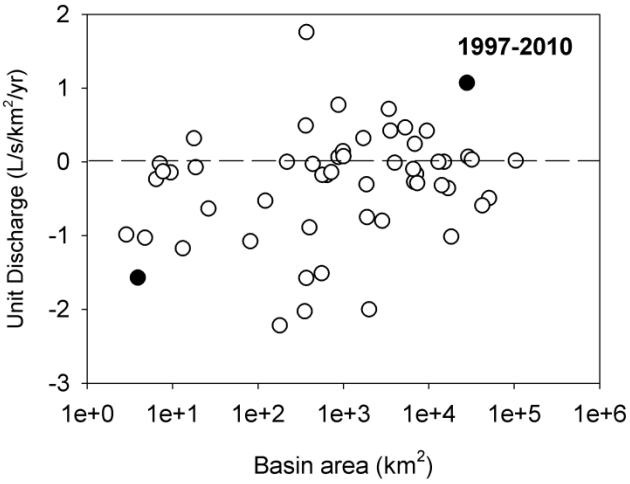


Figure 179 - Median July Discharge



Figures 180-184: Basin area (1997-2010)

Figure 180 - Median August Discharge

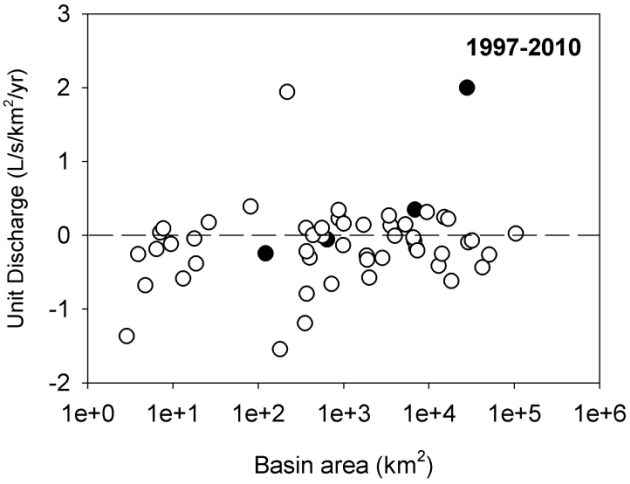


Figure 181 - Median September Discharge

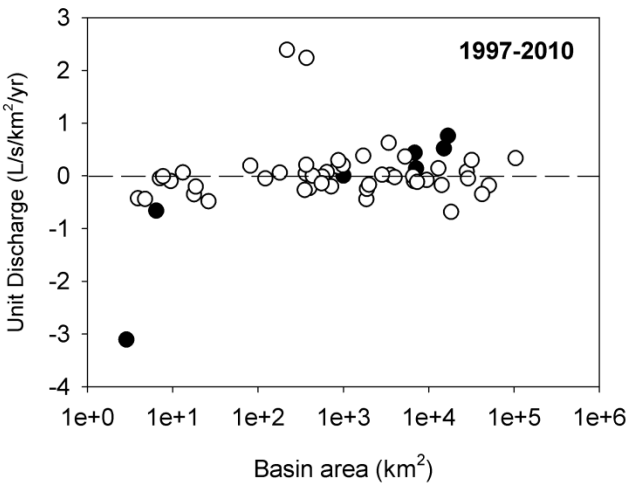


Figure 182 - Median October Discharge

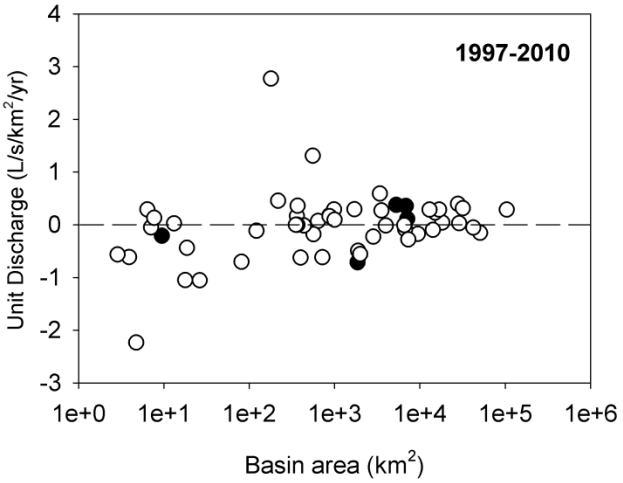


Figure 183 - Median November Discharge

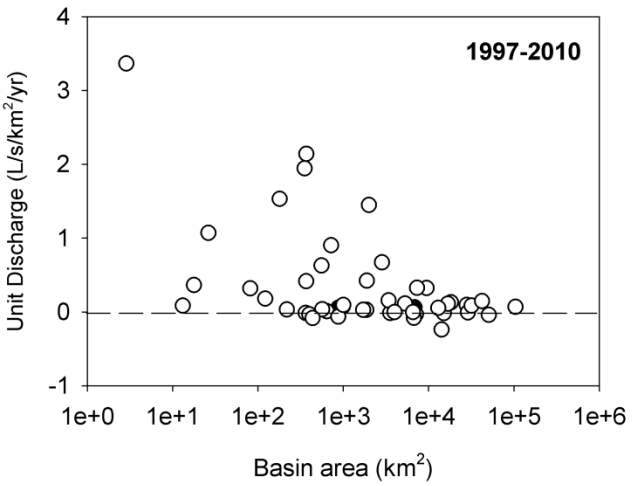
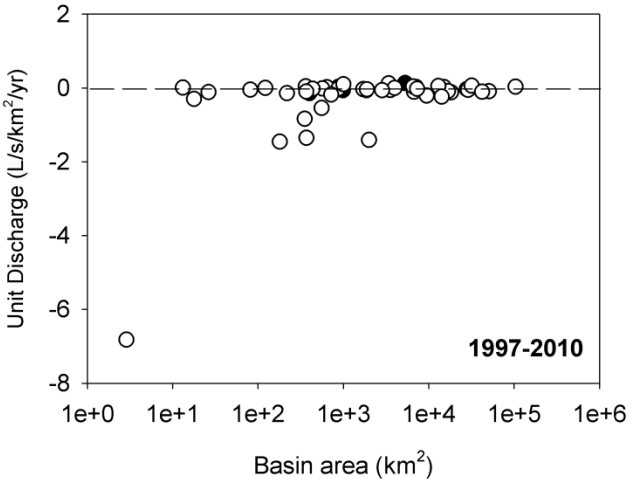


Figure 184 - Median December Discharge



Figures 185-192: Median August discharge vs. glacier cover

Annual trend in the median August unit discharge for glaciated basins, plotted against the percent basin area that is glaciated, and the median elevation of the glaciated area. The glacier metrics are calculated as of 2007 (Bolch *et al.*, 2010), and depending on the glacier attributes, inter-annual changes in area relative to basin area can be substantial. It is important to note that the glacier area as a percentage of basin area and the median glacial elevation are not temporal constants.

Figure 185 - Median August Discharge Trend (1961-2010)
vs. % Basin Area with Glacial Cover

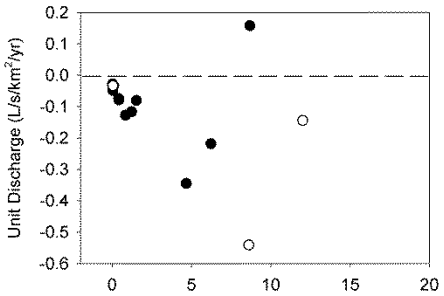


Figure 186 - Median August Discharge Trend (1961-2010)
vs. Median Elevation of Glaciated Area

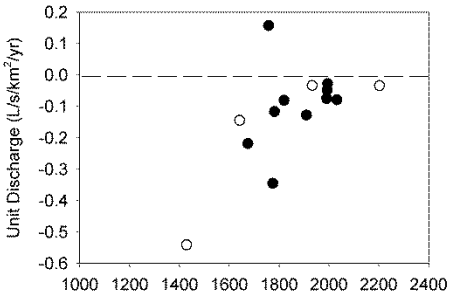


Figure 187 - Median August Discharge Trend (1971-2010)
vs. % Basin Area with Glacial Cover

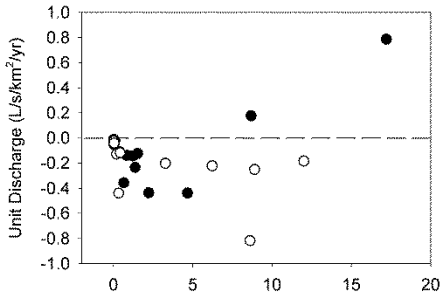


Figure 188 - Median August Discharge Trend (1971-2010)
vs. Median Elevation of Glaciated Area

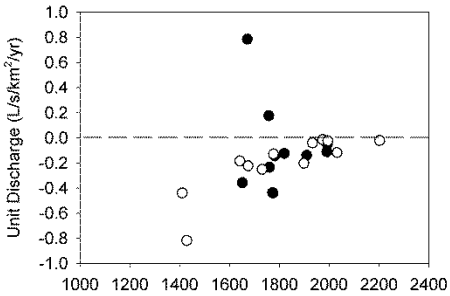


Figure 189 - Median August Discharge Trend (1981-2010)
vs. % Basin Area with Glacial Cover

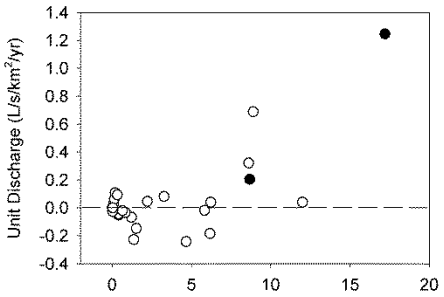


Figure 190 - Median August Discharge Trend (1981-2010)
vs. Median Elevation of Glaciated Area

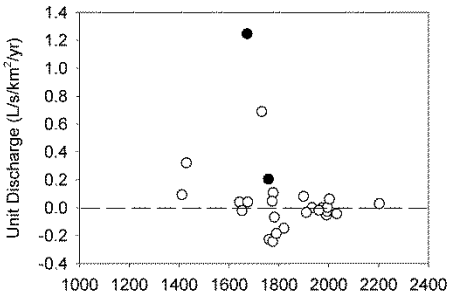


Figure 191 - Median August Discharge Trend (1997-2010)
vs. % Basin Area with Glacial Cover

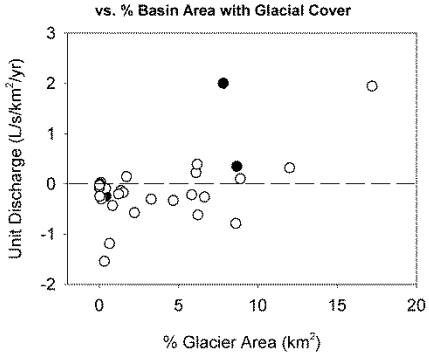
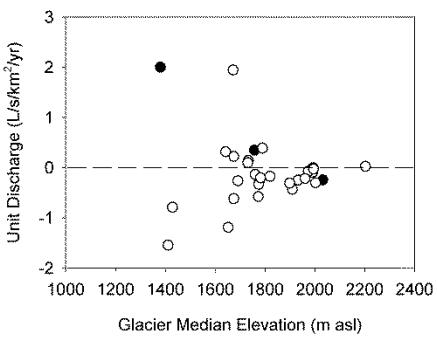


Figure 192 - Median August Discharge Trend (1997-2010)
vs. Median Elevation of Glaciated Area



Appendix 2 - Maps

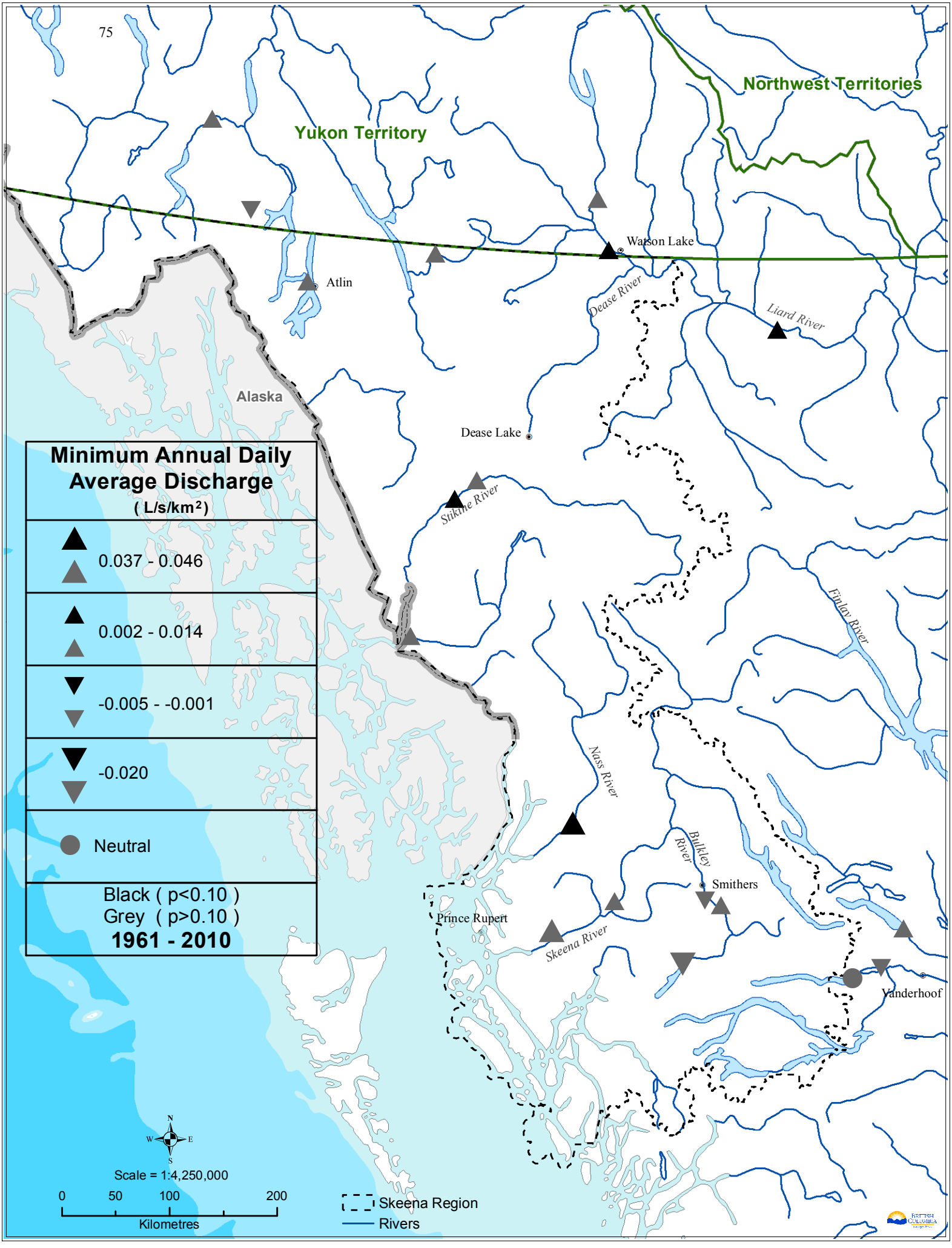
Province of British Columbia – Ministry of Environment

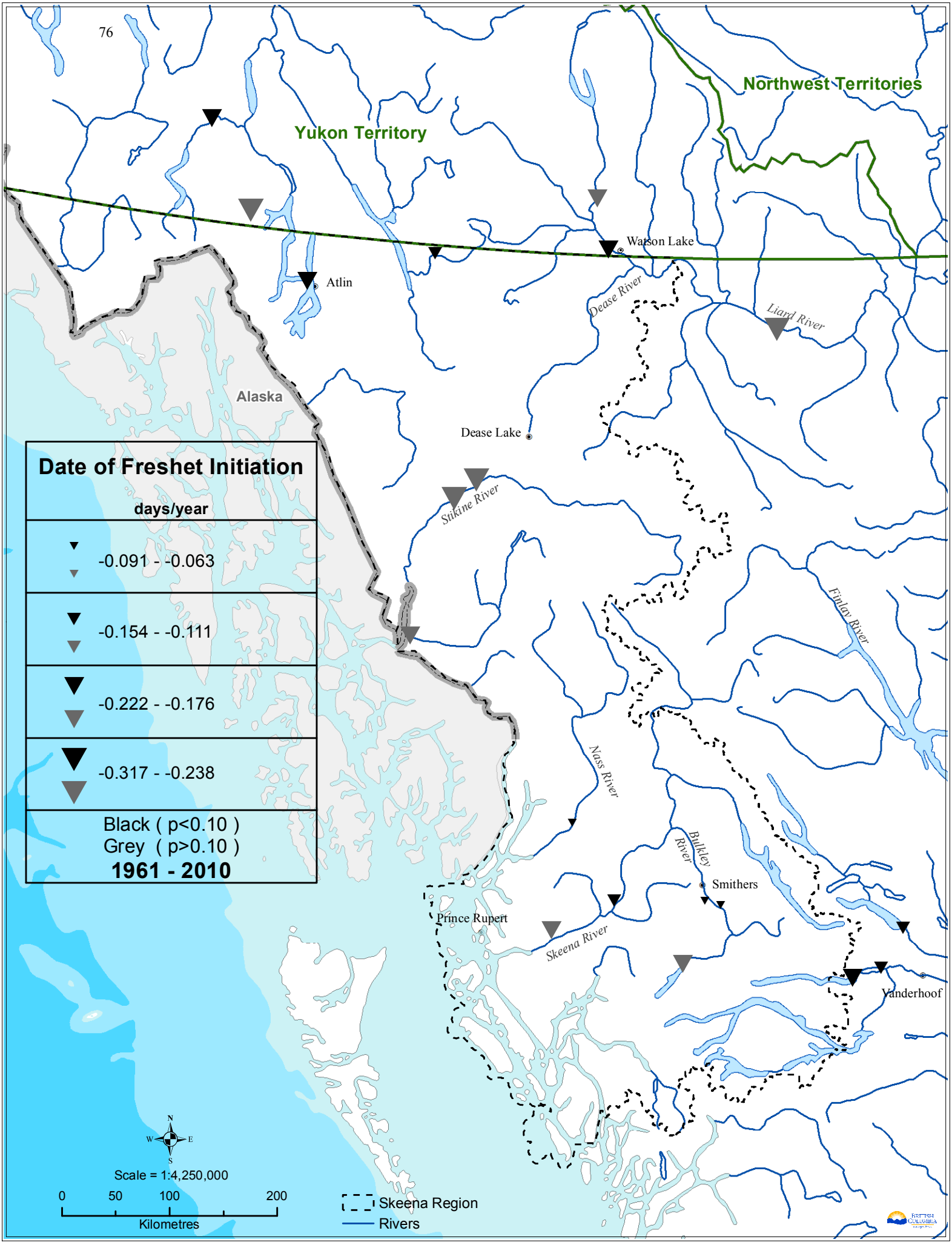
Streamflow Trends in the Skeena Region

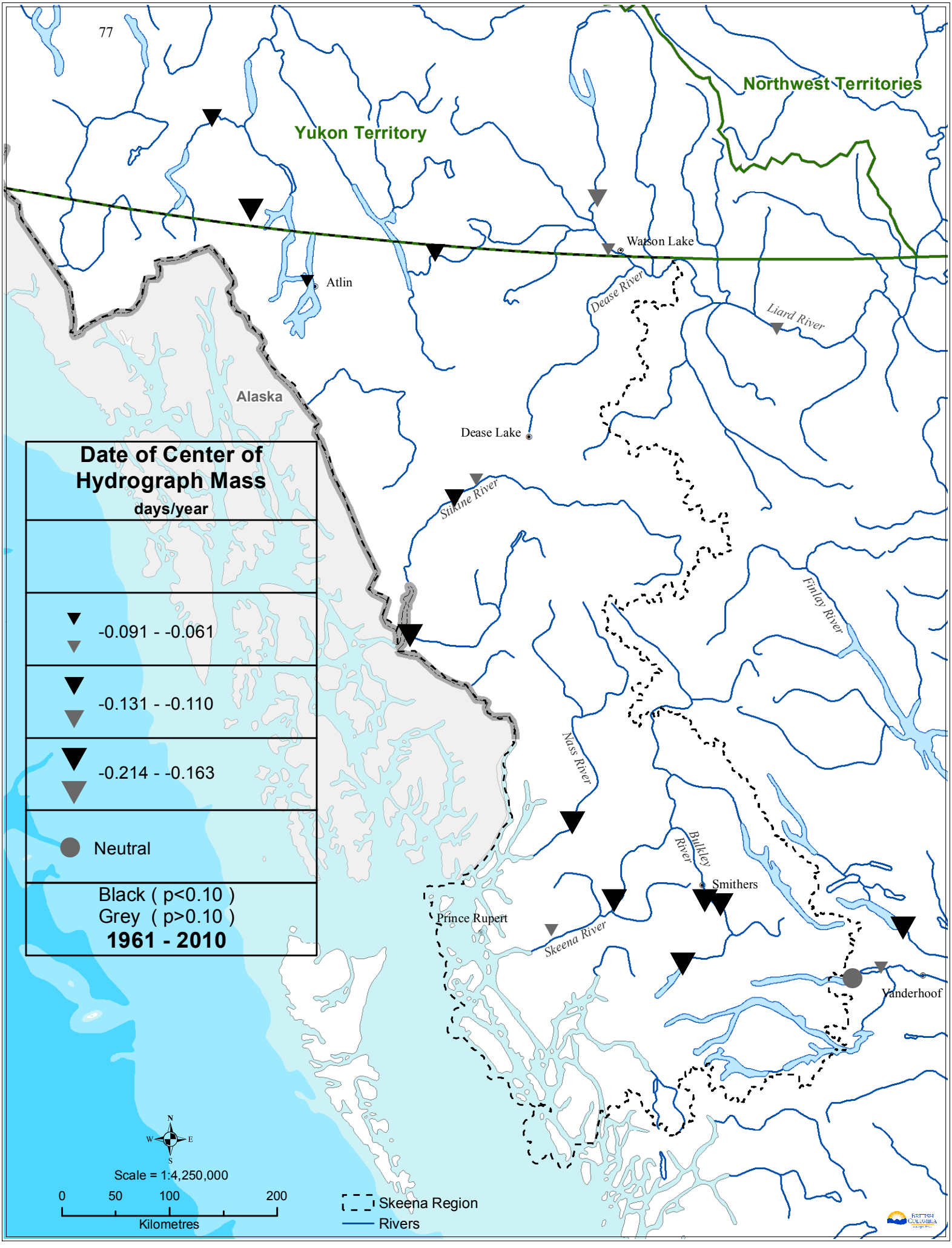
Appendix 2 – Maps

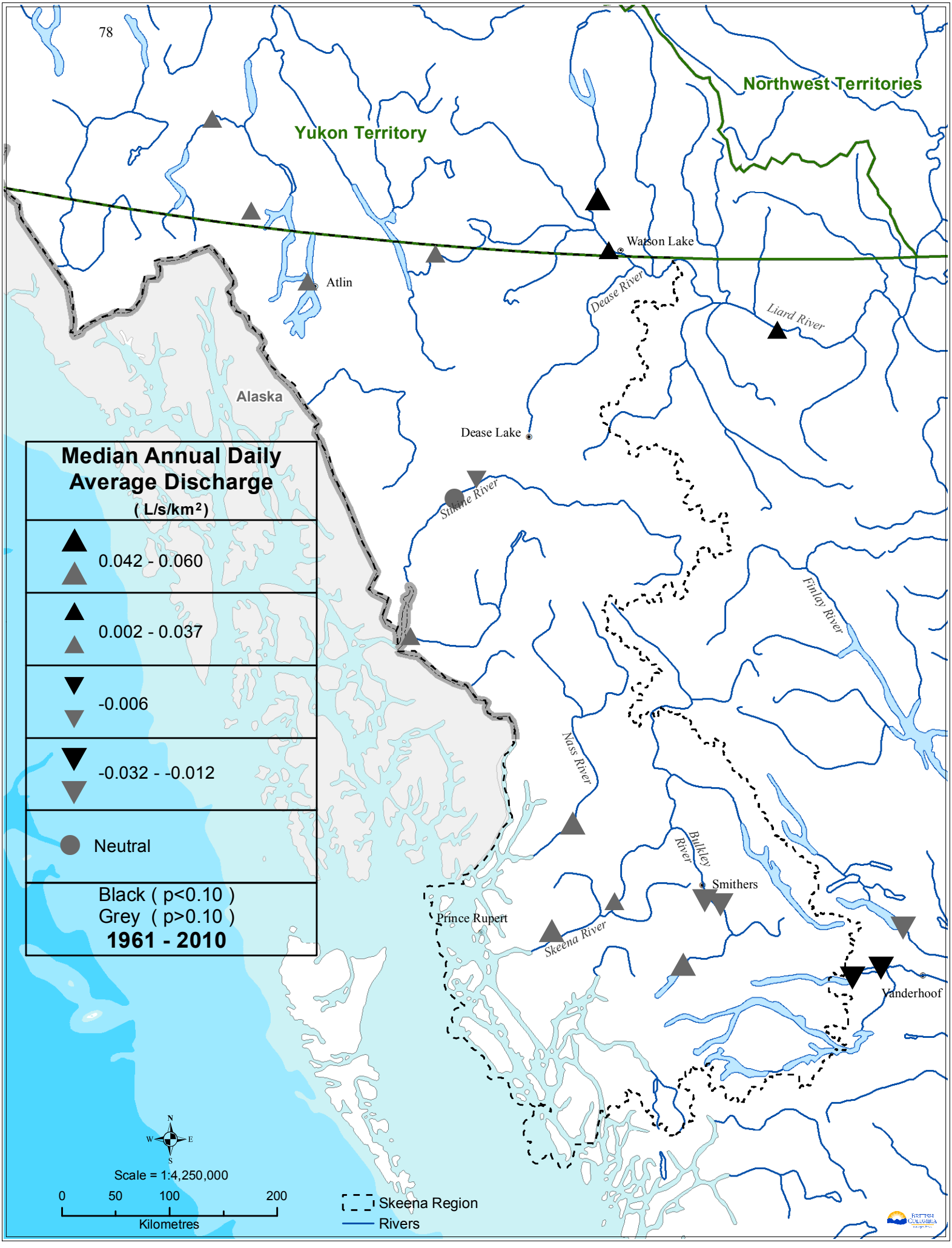
Page No.	Map Title	Period
75	Minimum Annual Average Daily Discharge	(1961-2010)
76	Date of Freshet Initiation	(1961-2010)
77	Date of Hydrograph Centre of Mass	(1961-2010)
78	Median Annual Average Daily Discharge	(1961-2010)
79	Average Annual Average Daily Discharge	(1961-2010)
80	Median Water Year Daily Discharge	(1961-2010)
81	Average Water Year Daily Discharge	(1961-2010)
82	Annual Minimum 7-day Average Low Flow	(1961-2010)
83	Annual Minimum 30-day Average Low Flow	(1961-2010)
84	June-September Minimum 7-day Average Low Flow	(1961-2010)
85	June-September Minimum 30-day Average Low Flow	(1961-2010)
86	January Median Daily Discharge	(1961-2010)
87	February Median Daily Discharge	(1961-2010)
88	March Median Daily Discharge	(1961-2010)
89	April Median Daily Discharge	(1961-2010)
90	May Median Daily Discharge	(1961-2010)
91	June Median Daily Discharge	(1961-2010)
92	July Median Daily Discharge	(1961-2010)
93	August Median Daily Discharge	(1961-2010)
94	September Median Daily Discharge	(1961-2010)
95	October Median Daily Discharge	(1961-2010)
96	November Median Daily Discharge	(1961-2010)
97	December Median Daily Discharge	(1961-2010)
98	Minimum Annual Average Daily Discharge	(1971-2010)
99	Date of Freshet Initiation	(1971-2010)
100	Date of Hydrograph Centre of Mass	(1971-2010)
101	Median Annual Average Daily Discharge	(1971-2010)
102	Average Annual Average Daily Discharge	(1971-2010)
103	Median Water Year Daily Discharge	(1971-2010)
104	Average Water Year Daily Discharge	(1971-2010)
105	Annual Minimum 7-day Average Low Flow	(1971-2010)
106	Annual Minimum 30-day Average Low Flow	(1971-2010)
107	June-September Minimum 7-day Average Low Flow	(1971-2010)
108	June-September Minimum 30-day Average Low Flow	(1971-2010)
109	January Median Daily Discharge	(1971-2010)
110	February Median Daily Discharge	(1971-2010)
111	March Median Daily Discharge	(1971-2010)
112	April Median Daily Discharge	(1971-2010)
113	May Median Daily Discharge	(1971-2010)
114	June Median Daily Discharge	(1971-2010)
115	July Median Daily Discharge	(1971-2010)
116	August Median Daily Discharge	(1971-2010)
117	September Median Daily Discharge	(1971-2010)
118	October Median Daily Discharge	(1971-2010)
119	November Median Daily Discharge	(1971-2010)
120	December Median Daily Discharge	(1971-2010)
121	Minimum Annual Average Daily Discharge	(1981-2010)
122	Date of Freshet Initiation	(1981-2010)
123	Date of Hydrograph Centre of Mass	(1981-2010)

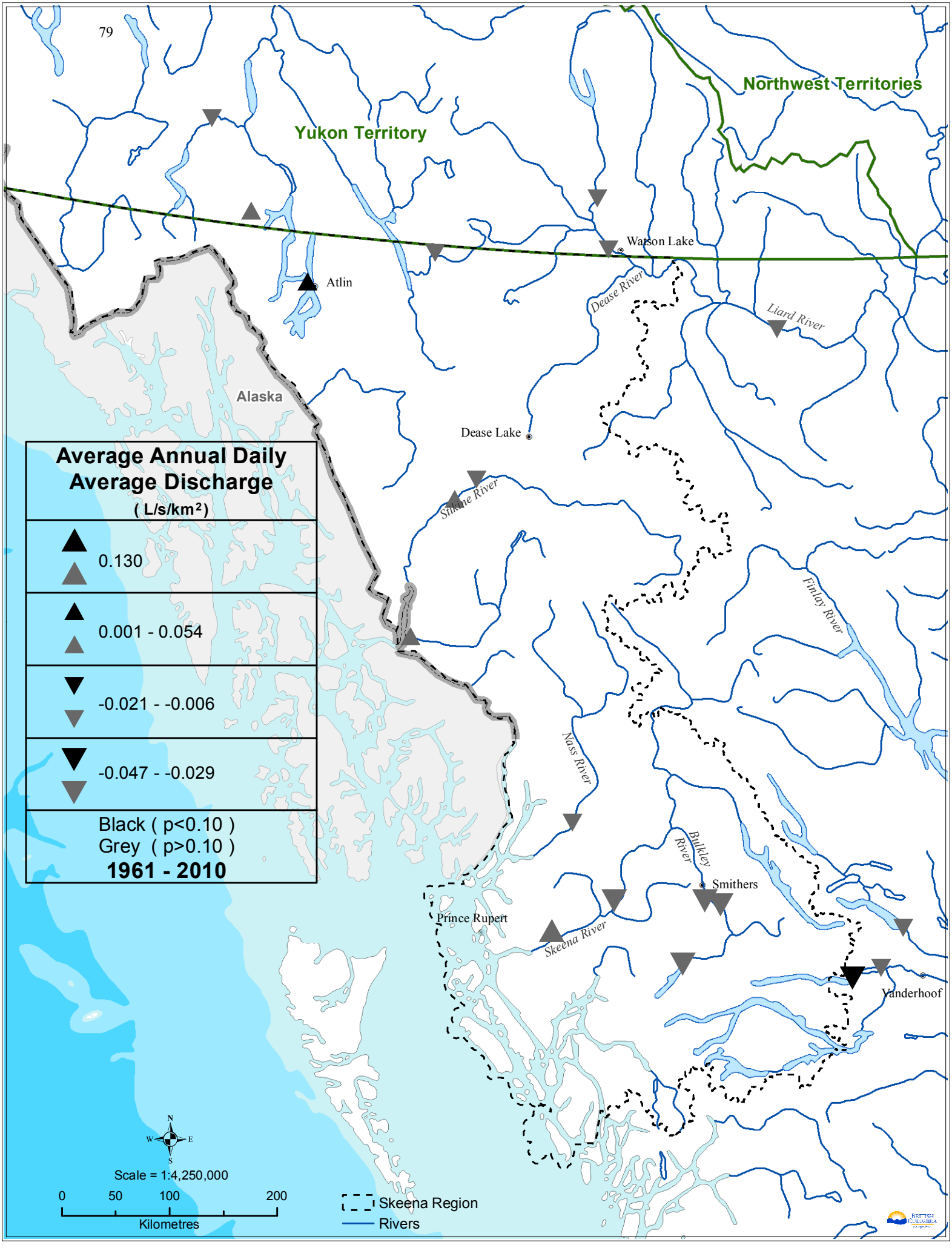
124	Median Annual Average Daily Discharge	(1981-2010)
125	Average Annual Average Daily Discharge	(1981-2010)
126	Median Water Year Daily Discharge	(1981-2010)
127	Average Water Year Daily Discharge	(1981-2010)
128	Annual Minimum 7-day Average Low Flow	(1981-2010)
129	Annual Minimum 30-day Average Low Flow	(1981-2010)
130	June-September Minimum 7-day Average Low Flow	(1981-2010)
131	June-September Minimum 30-day Average Low Flow	(1981-2010)
132	January Median Daily Discharge	(1981-2010)
133	February Median Daily Discharge	(1981-2010)
134	March Median Daily Discharge	(1981-2010)
135	April Median Daily Discharge	(1981-2010)
136	May Median Daily Discharge	(1981-2010)
137	June Median Daily Discharge	(1981-2010)
138	July Median Daily Discharge	(1981-2010)
139	August Median Daily Discharge	(1981-2010)
140	September Median Daily Discharge	(1981-2010)
141	October Median Daily Discharge	(1981-2010)
142	November Median Daily Discharge	(1981-2010)
143	December Median Daily Discharge	(1981-2010)
144	Minimum Annual Average Daily Discharge	(1997-2010)
145	Date of Freshet Initiation	(1997-2010)
146	Date of Hydrograph Centre of Mass	(1997-2010)
147	Median Annual Average Daily Discharge	(1997-2010)
148	Average Annual Average Daily Discharge	(1997-2010)
149	Median Water Year Daily Discharge	(1997-2010)
150	Average Water Year Daily Discharge	(1997-2010)
151	Annual Minimum 7-day Average Low Flow	(1997-2010)
152	Annual Minimum 30-day Average Low Flow	(1997-2010)
153	June-September Minimum 7-day Average Low Flow	(1997-2010)
154	June-September Minimum 30-day Average Low Flow	(1997-2010)
155	January Median Daily Discharge	(1997-2010)
156	February Median Daily Discharge	(1997-2010)
157	March Median Daily Discharge	(1997-2010)
158	April Median Daily Discharge	(1997-2010)
159	May Median Daily Discharge	(1997-2010)
160	June Median Daily Discharge	(1997-2010)
161	July Median Daily Discharge	(1997-2010)
162	August Median Daily Discharge	(1997-2010)
163	September Median Daily Discharge	(1997-2010)
164	October Median Daily Discharge	(1997-2010)
165	November Median Daily Discharge	(1997-2010)
166	December Median Daily Discharge	(1997-2010)

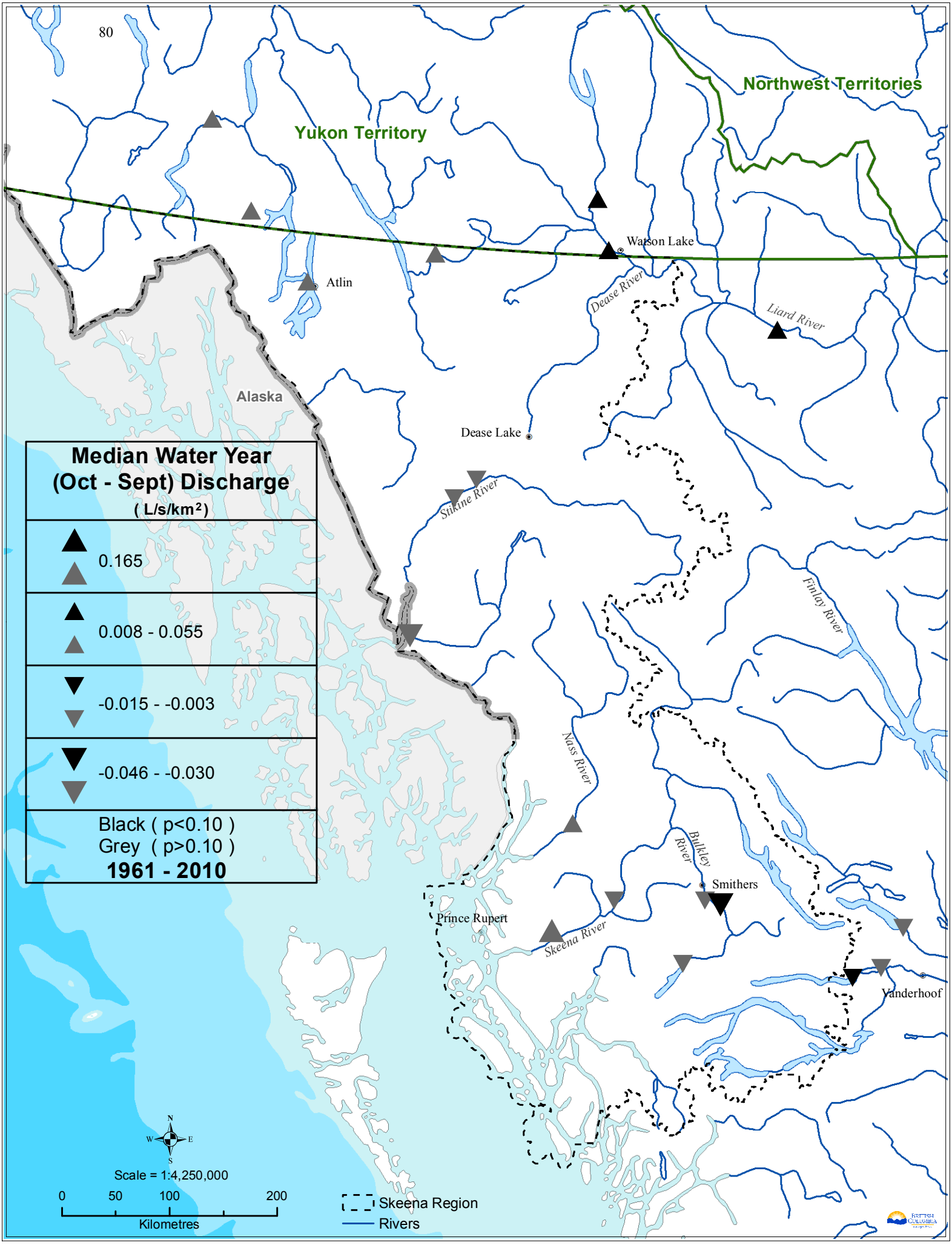

Yukon Territory
Northwest Territories
Alaska
Watson Lake
Atlin
Dease River
Liard River
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
Minimum Annual Daily Average Discharge
(L/s/km²)
0.037 - 0.046
0.002 - 0.014
-0.005 - -0.001
-0.020
Neutral
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

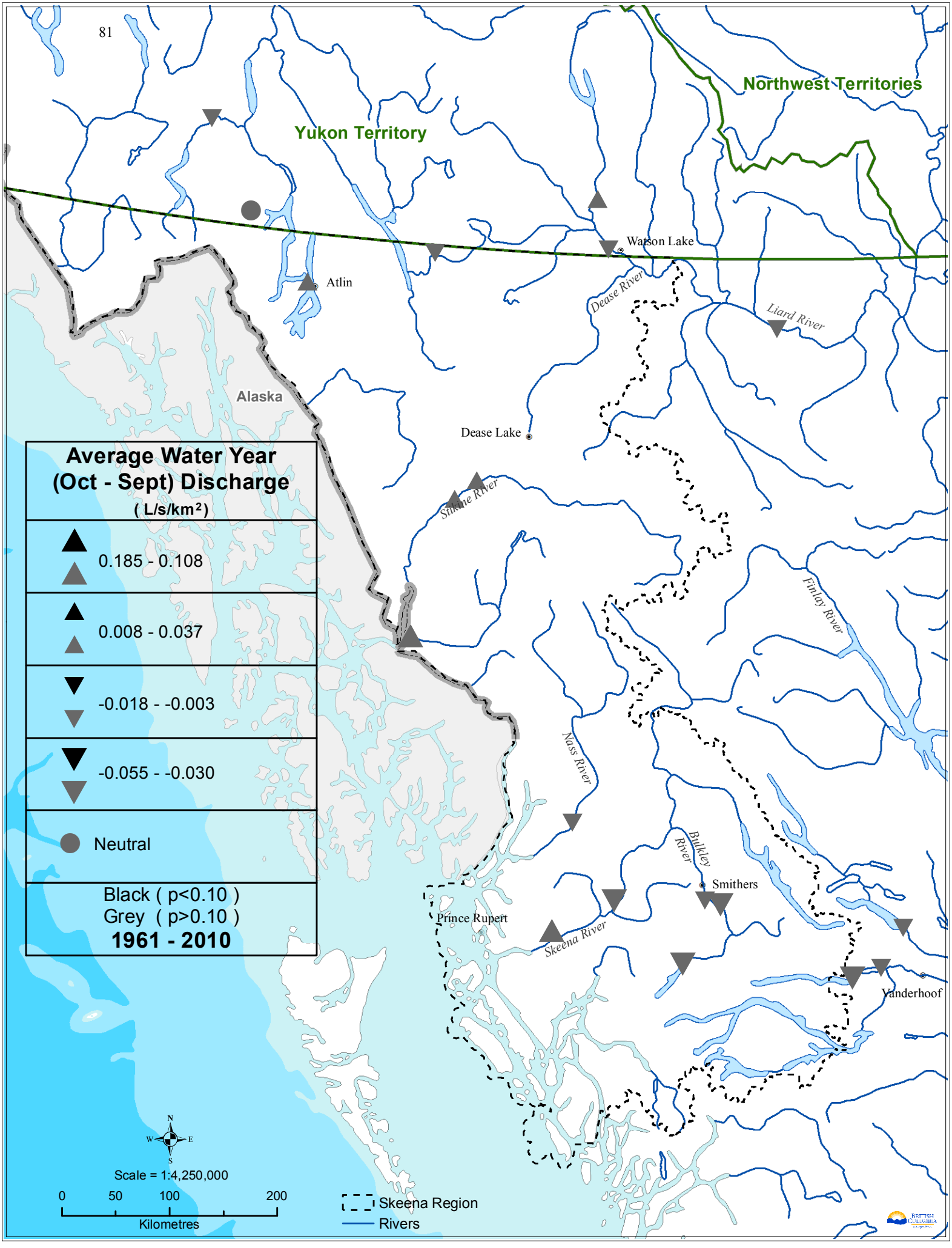

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Sikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Date of Freshet Initiation
days/year
-0.091 - -0.063
-0.154 - -0.111
-0.222 - -0.176
-0.317 - -0.238
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

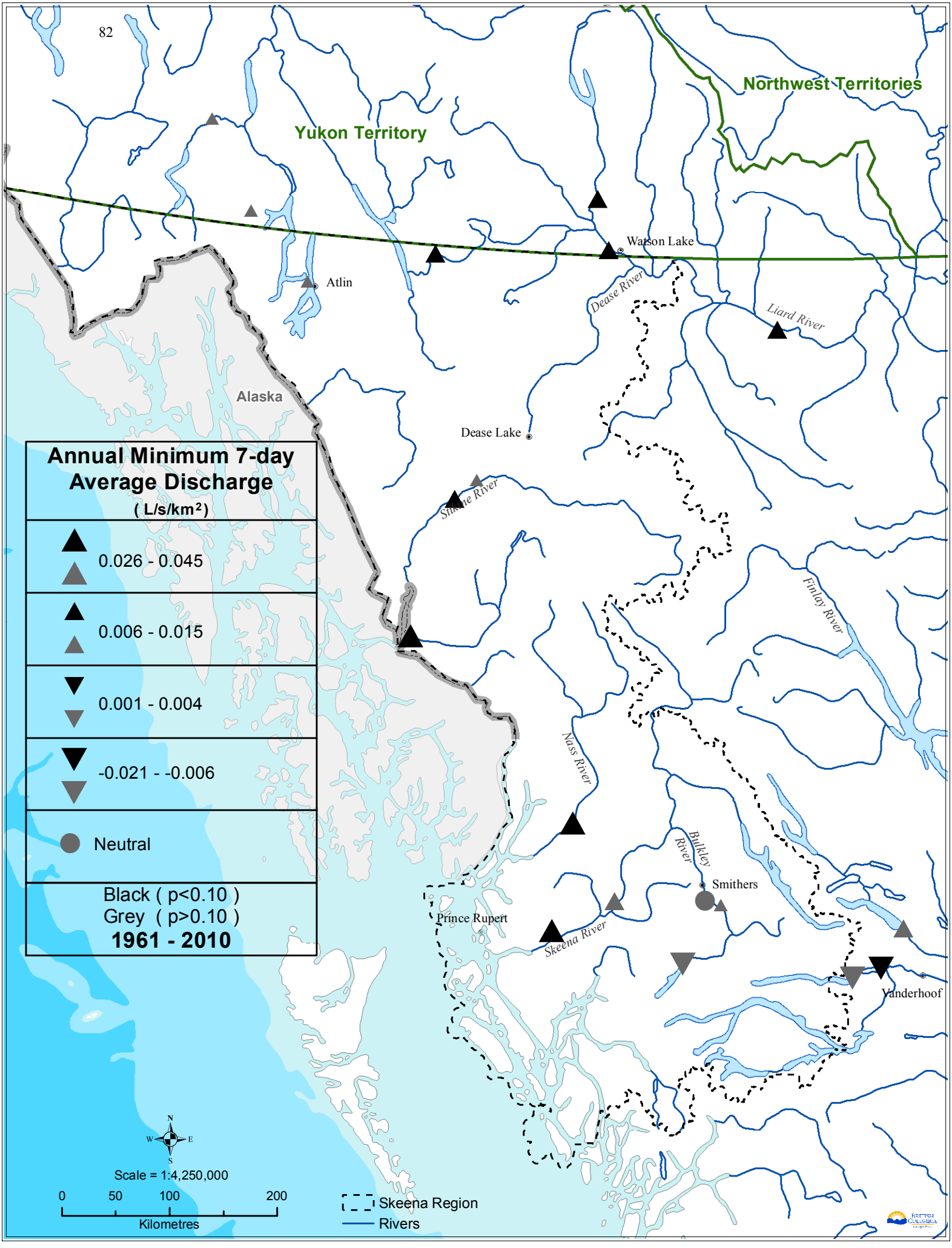

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Date of Center of Hydrograph Mass
days/year
-0.091 - -0.061
-0.131 - -0.110
-0.214 - -0.163
Neutral
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

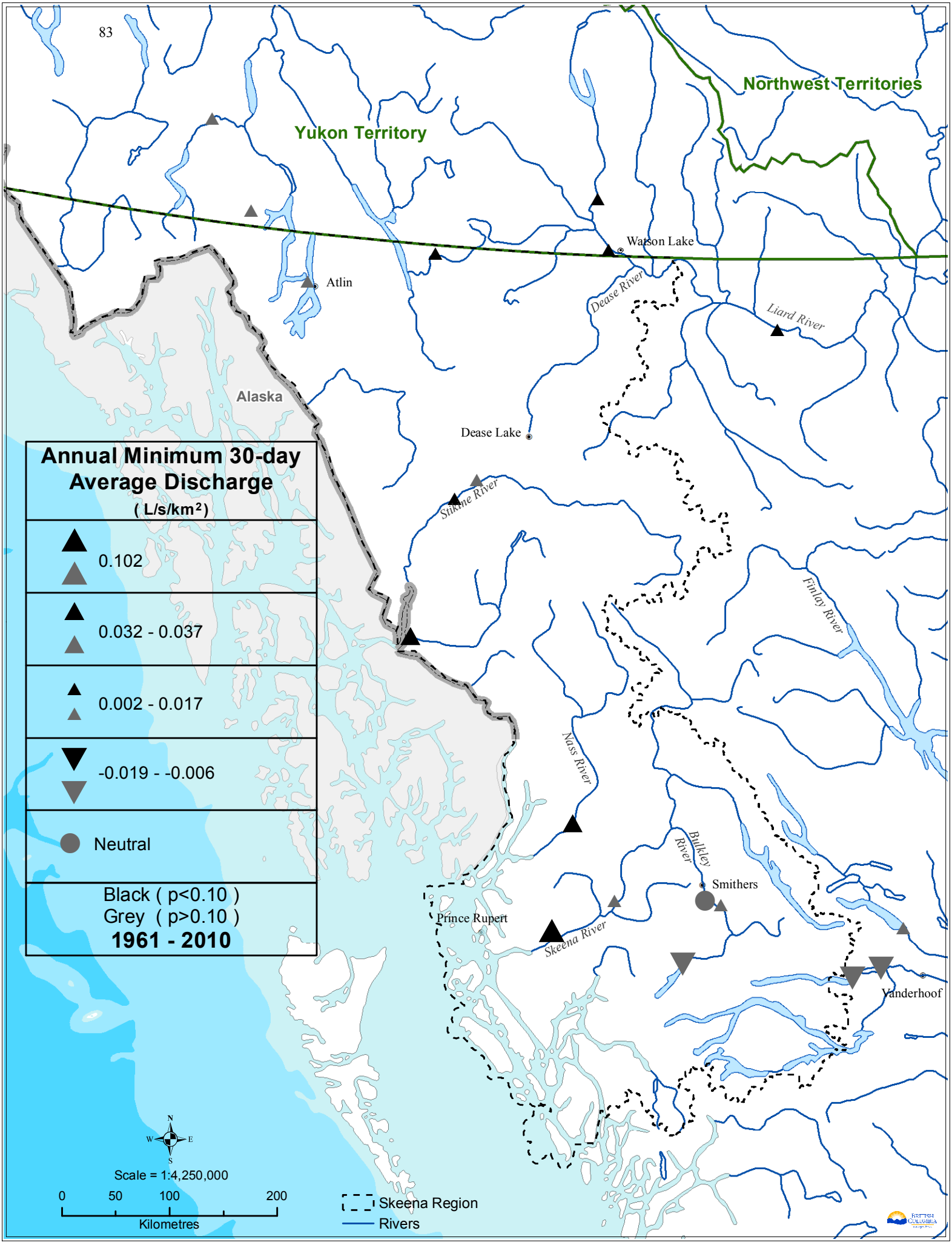

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median Annual Daily Average Discharge
(L/s/km²)
0.042 - 0.060
0.002 - 0.037
-0.006
-0.032 - -0.012
Neutral
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

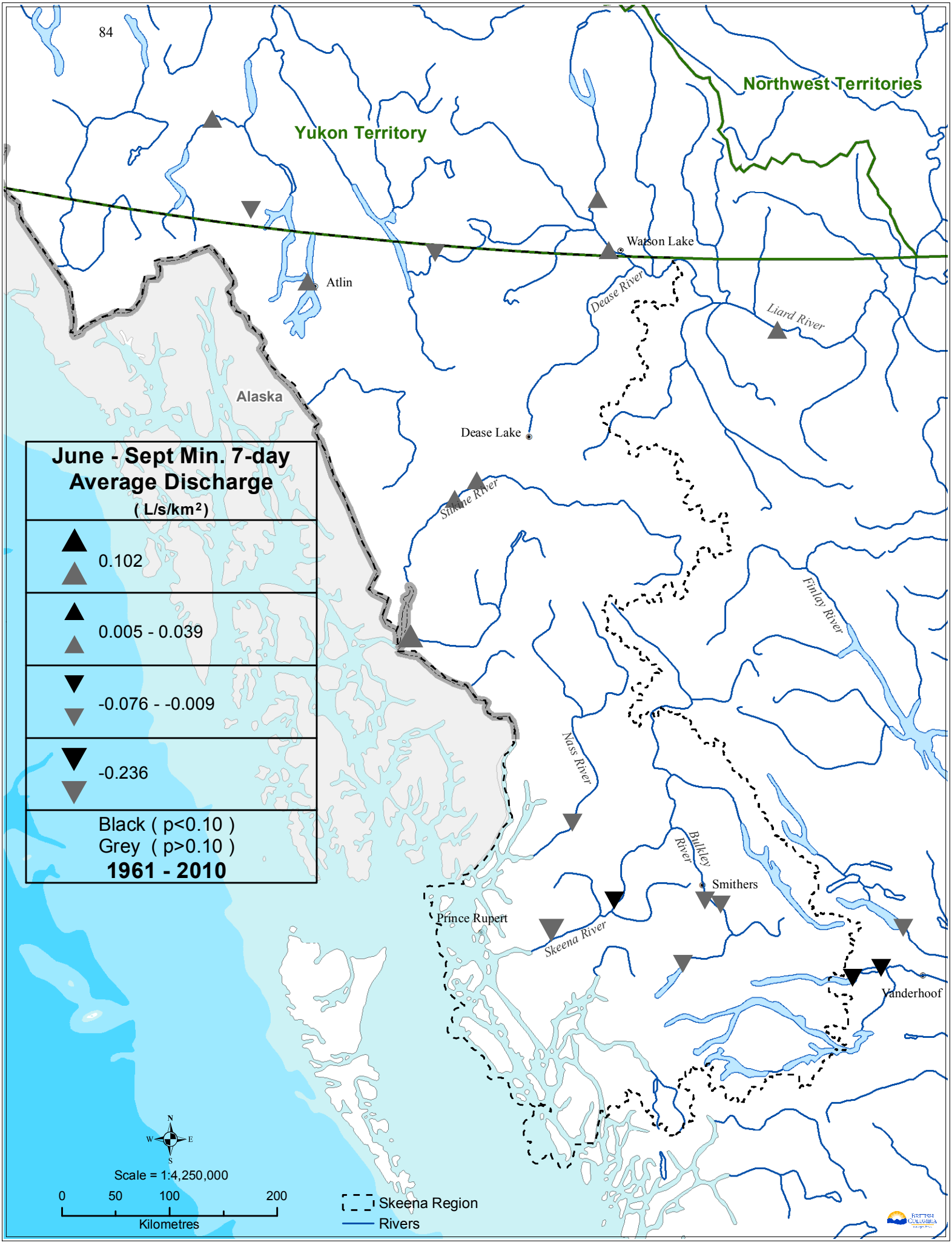

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Average Annual Daily Average Discharge
(L/s/km²)
0.130
0.001 - 0.054
-0.021 - -0.006
-0.047 - -0.029
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

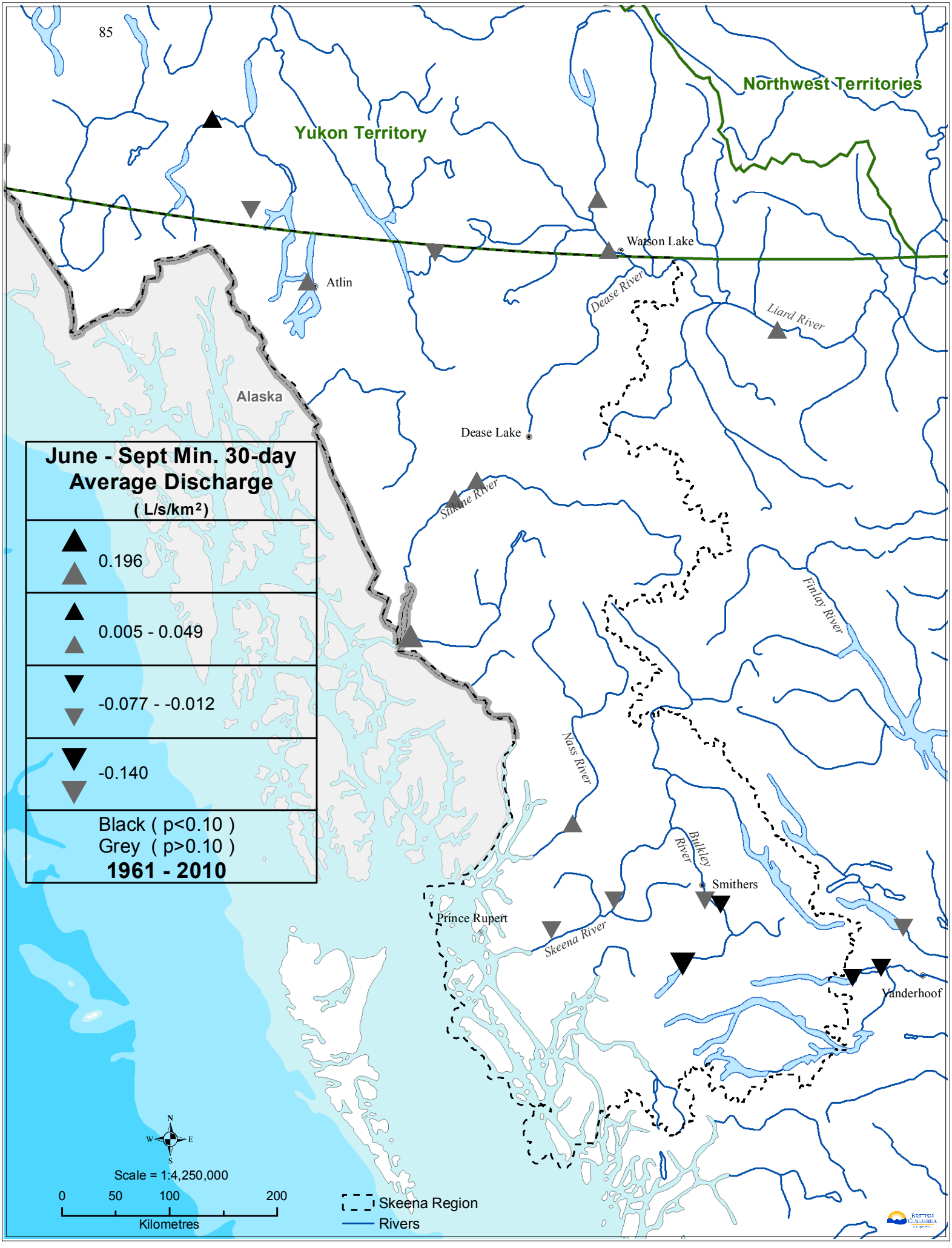

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median Water Year
(Oct - Sept) Discharge
(L/s/km²)
0.165
0.008 - 0.055
-0.015 - -0.003
-0.046 - -0.030
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

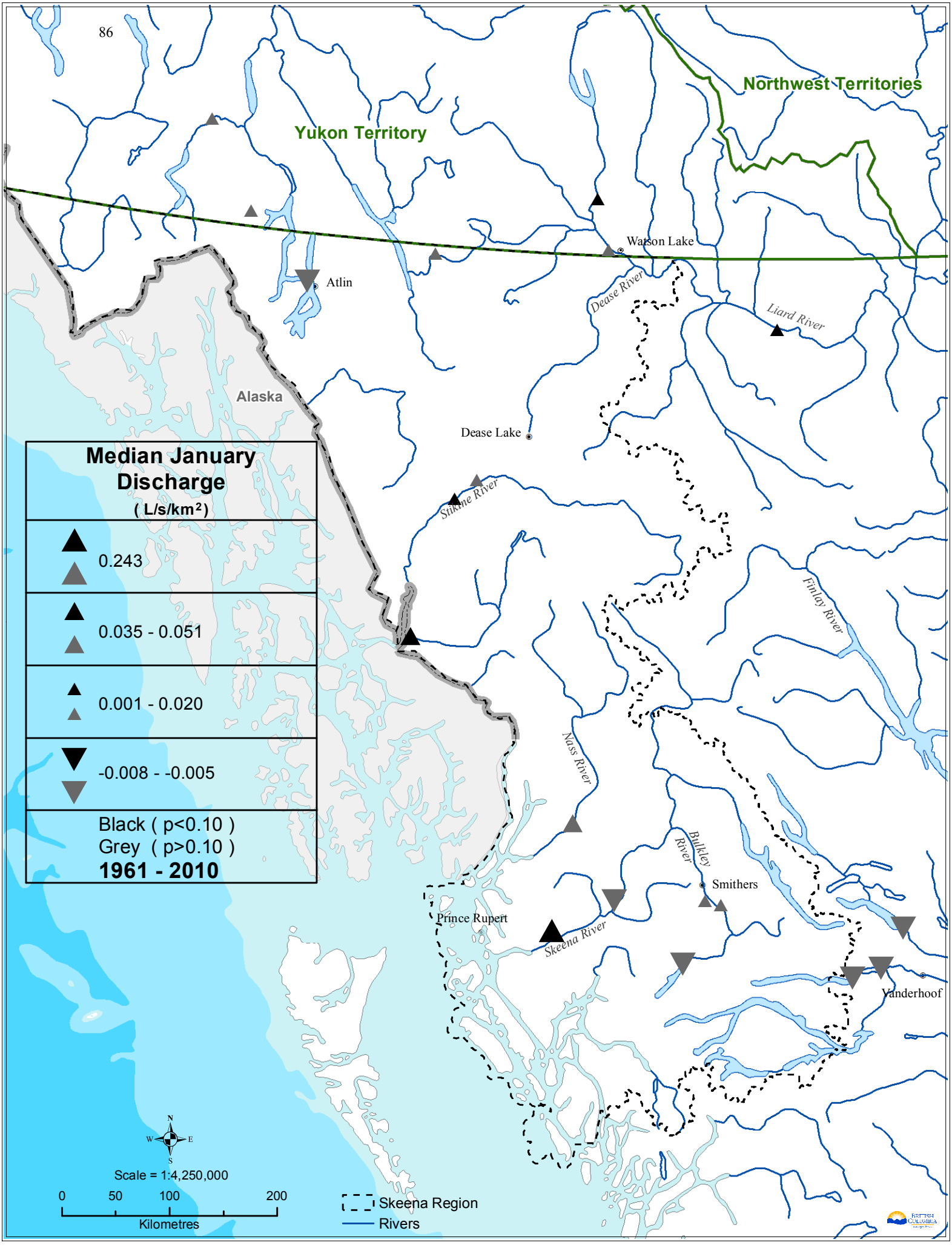

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Average Water Year
(Oct - Sept) Discharge
(L/s/km²)
0.185 - 0.108
0.008 - 0.037
-0.018 - -0.003
-0.055 - -0.030
Neutral
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

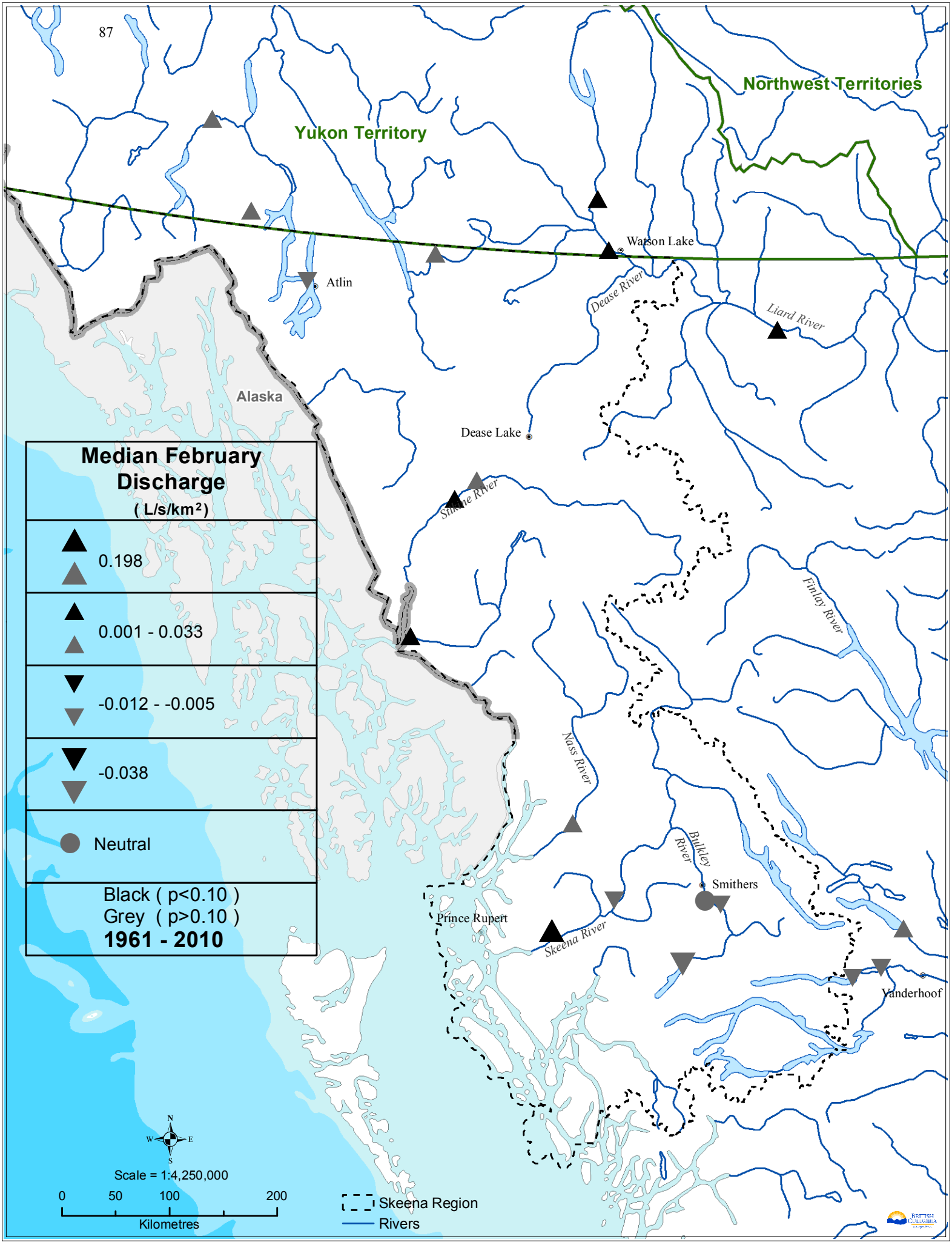

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Annual Minimum 7-day Average Discharge
(L/s/km²)
0.026 - 0.045
0.006 - 0.015
0.001 - 0.004
-0.021 - -0.006
Neutral
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

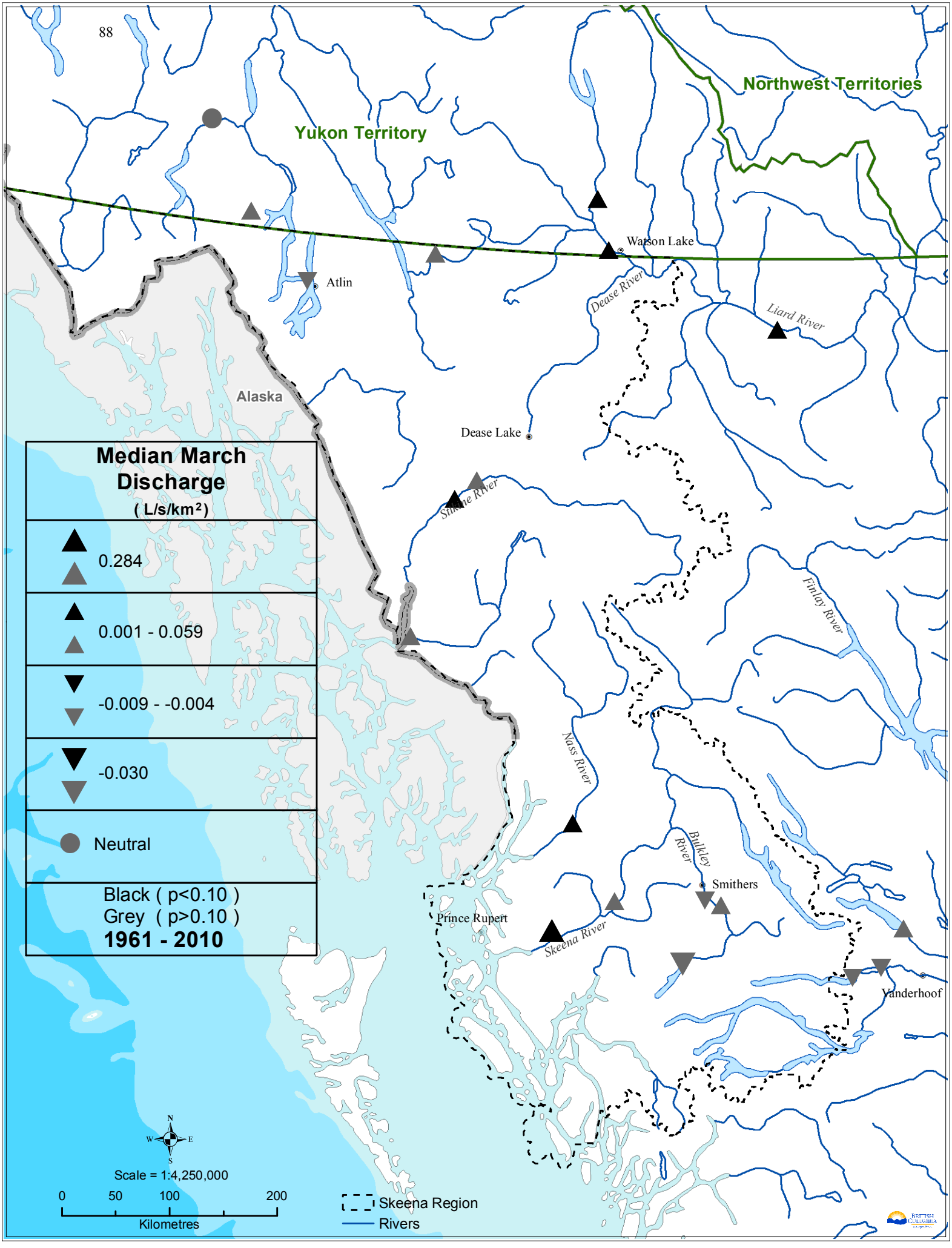

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
Annual Minimum 30-day Average Discharge
(L/s/km²)
0.102
0.032 - 0.037
0.002 - 0.017
-0.019 - -0.006
Neutral
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

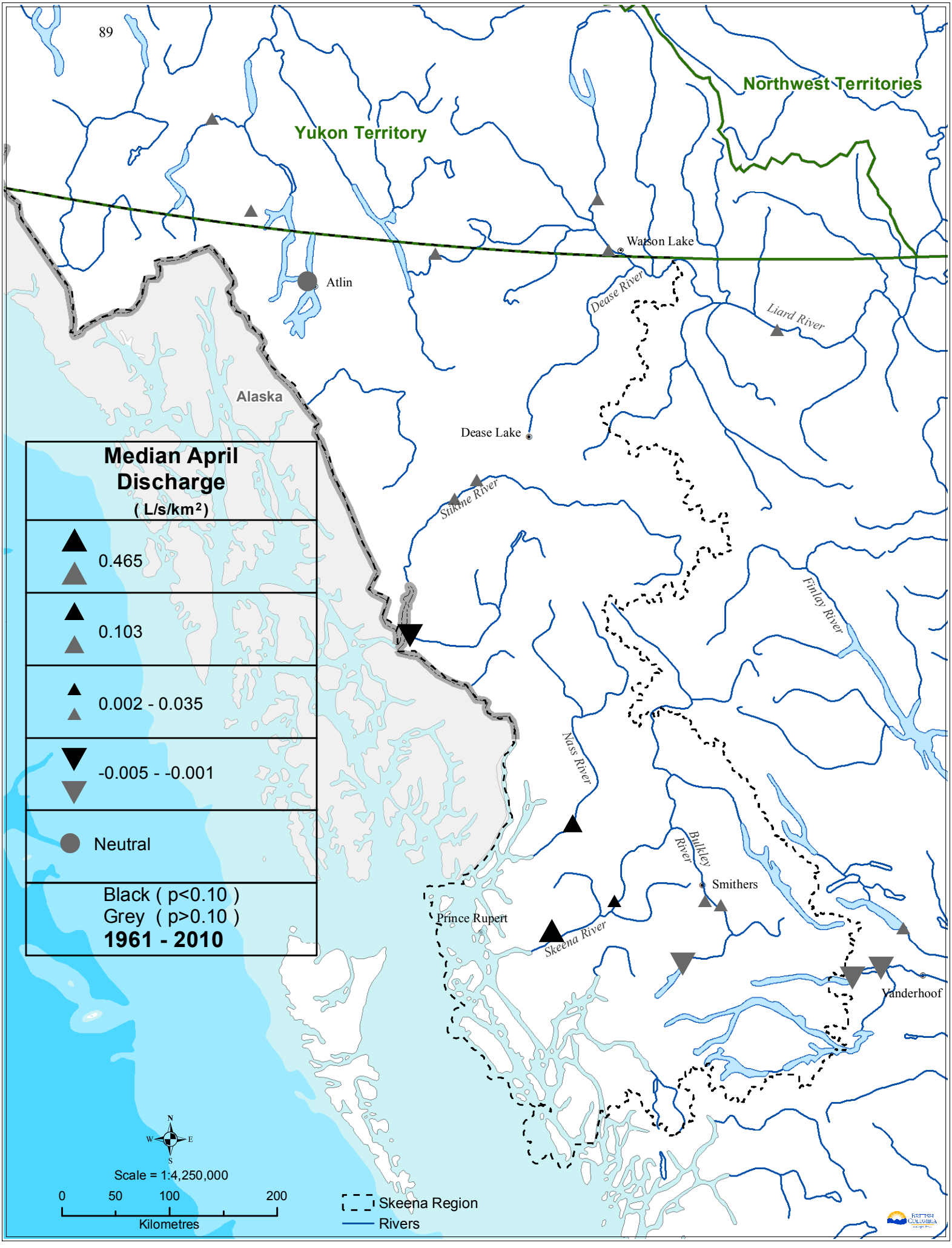

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
June - Sept Min. 7-day Average Discharge
(L/s/km²)
0.102
0.005 - 0.039
-0.076 - -0.009
-0.236
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

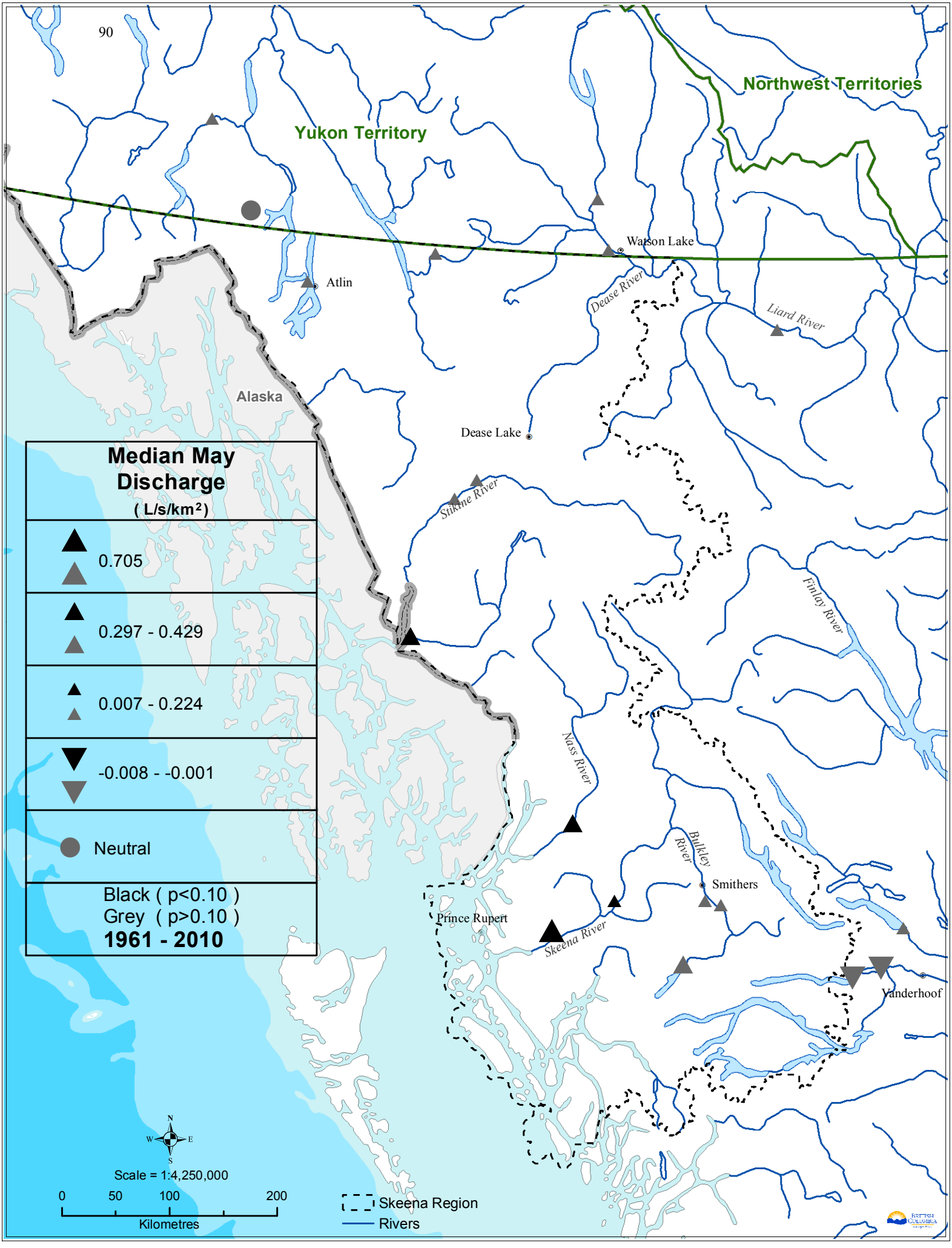

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
June - Sept Min. 30-day Average Discharge
(L/s/km²)
0.196
0.005 - 0.049
-0.077 - -0.012
-0.140
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

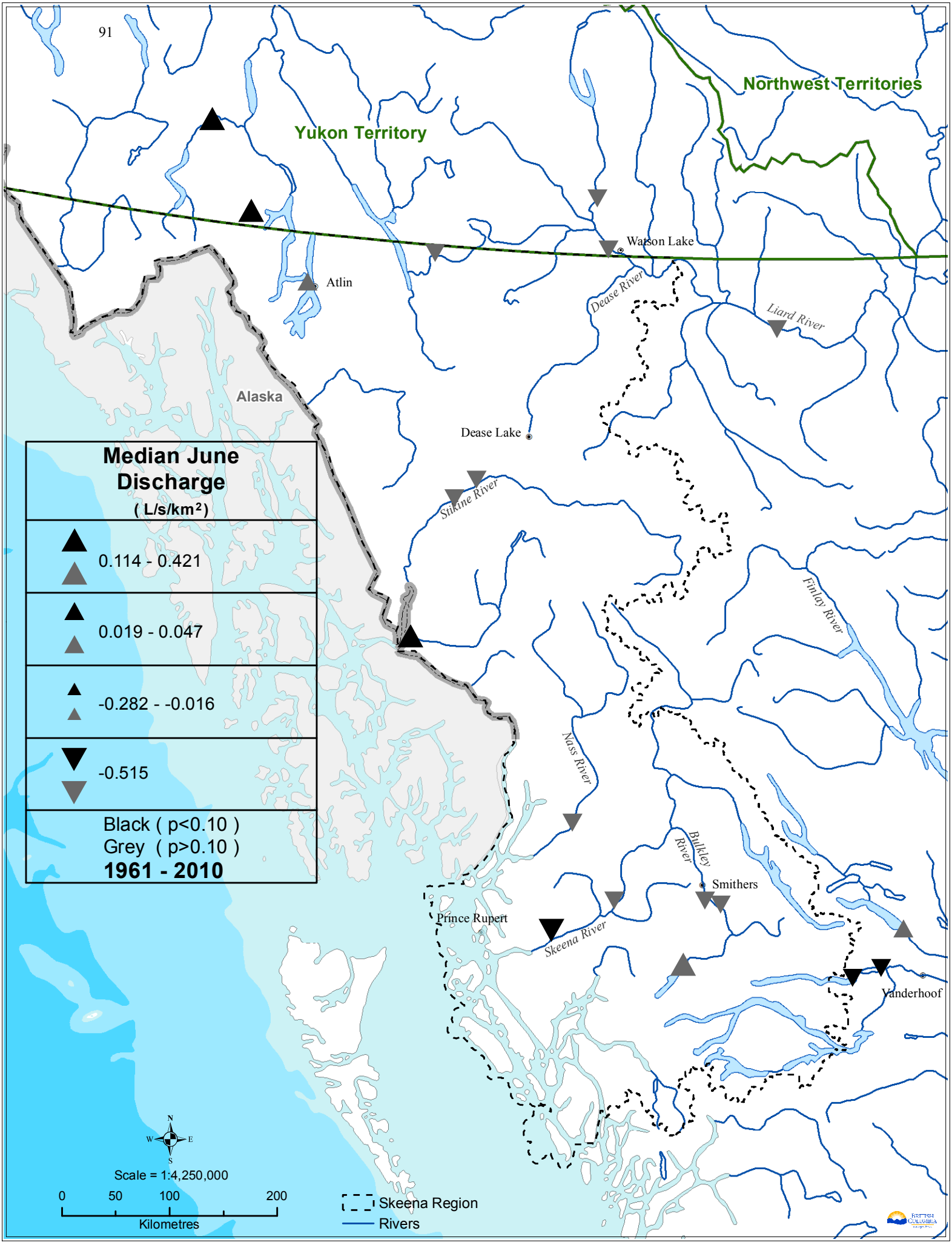

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median January Discharge
(L/s/km²)
0.243
0.035 - 0.051
0.001 - 0.020
-0.008 - -0.005
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

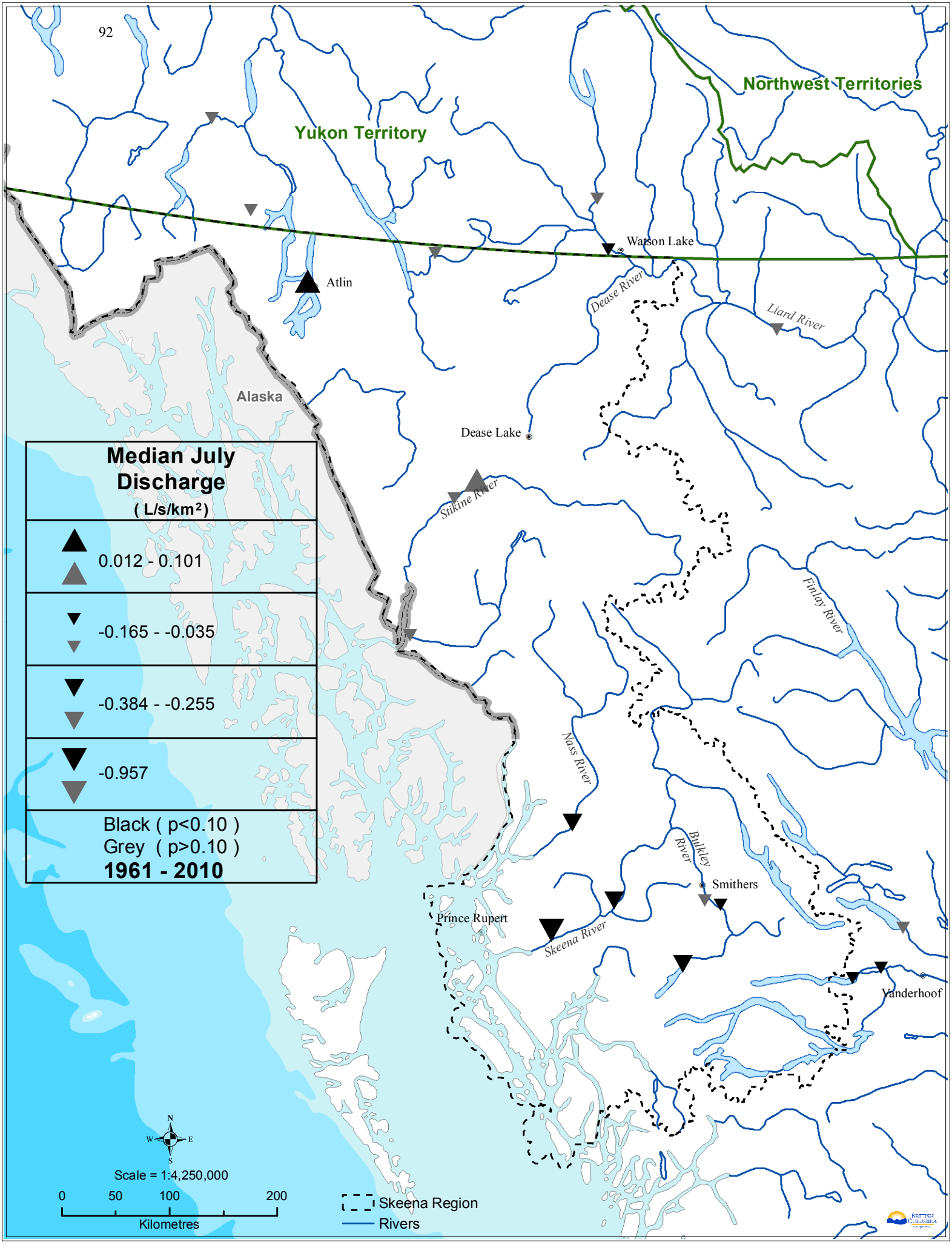

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median February Discharge
(L/s/km²)
0.198
0.001 - 0.033
-0.012 - -0.005
-0.038
Neutral
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

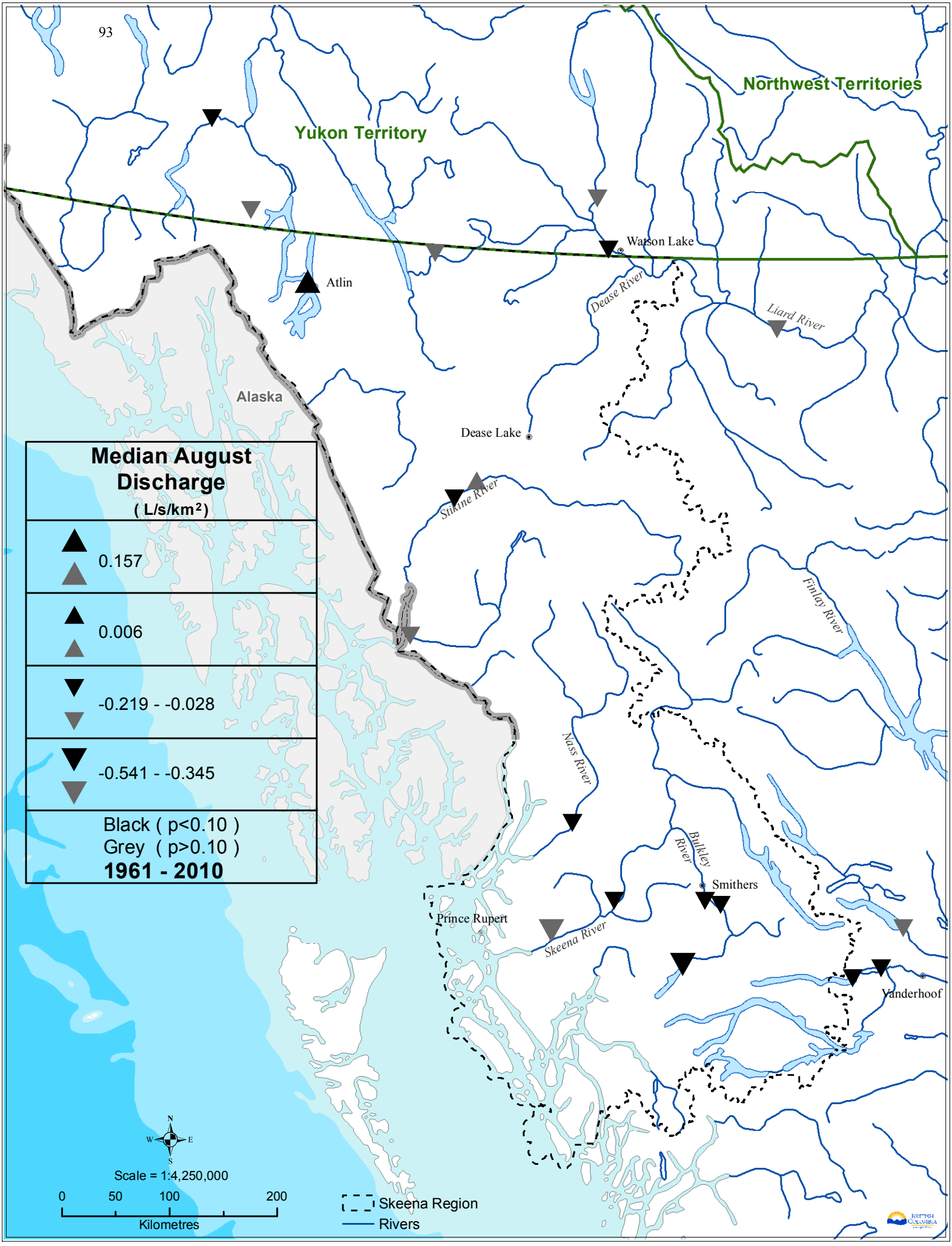

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median March Discharge
(L/s/km²)
0.284
0.001 - 0.059
-0.009 - -0.004
-0.030
Neutral
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

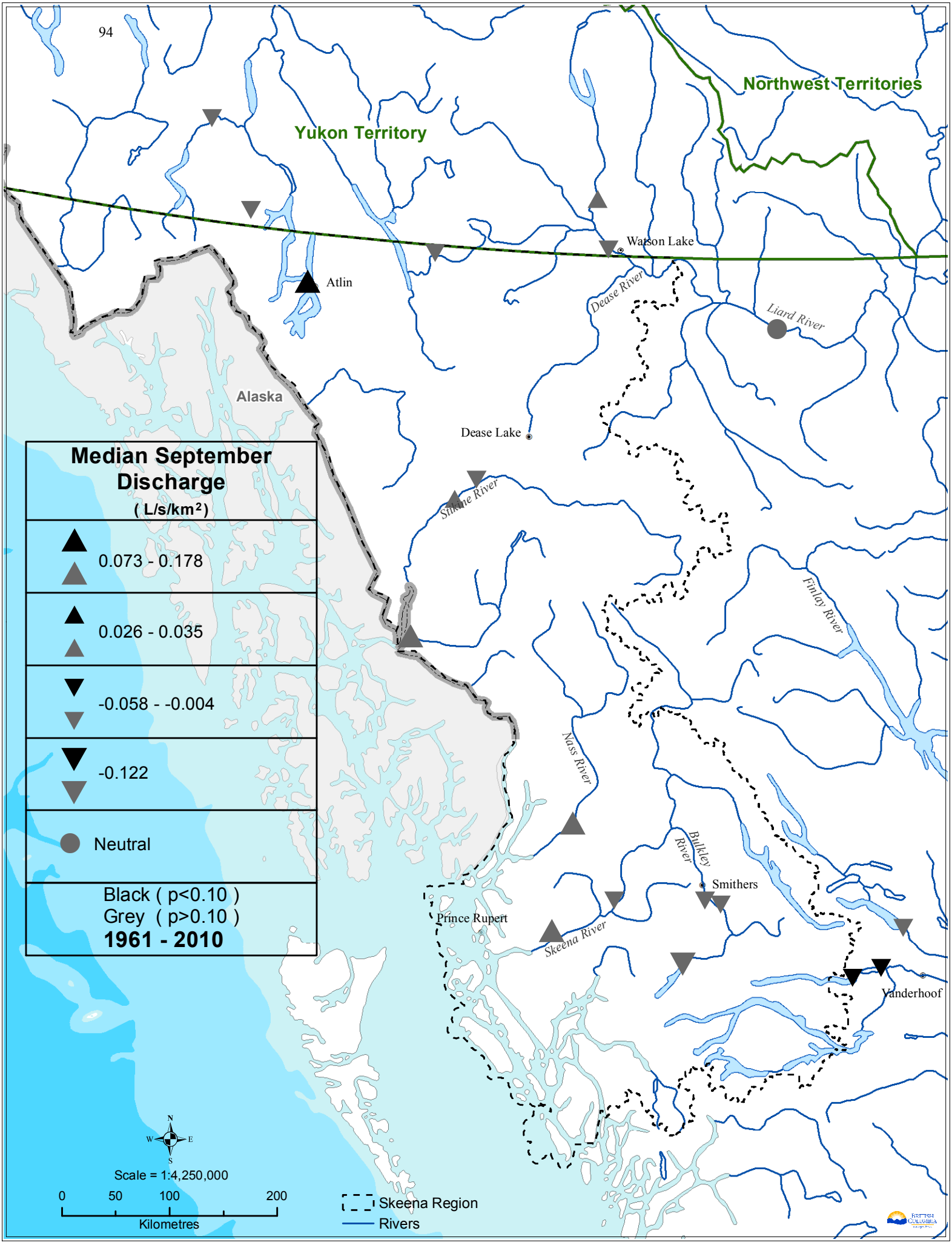

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median April Discharge
(L/s/km²)
0.465
0.103
0.002 - 0.035
-0.005 - -0.001
Neutral
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

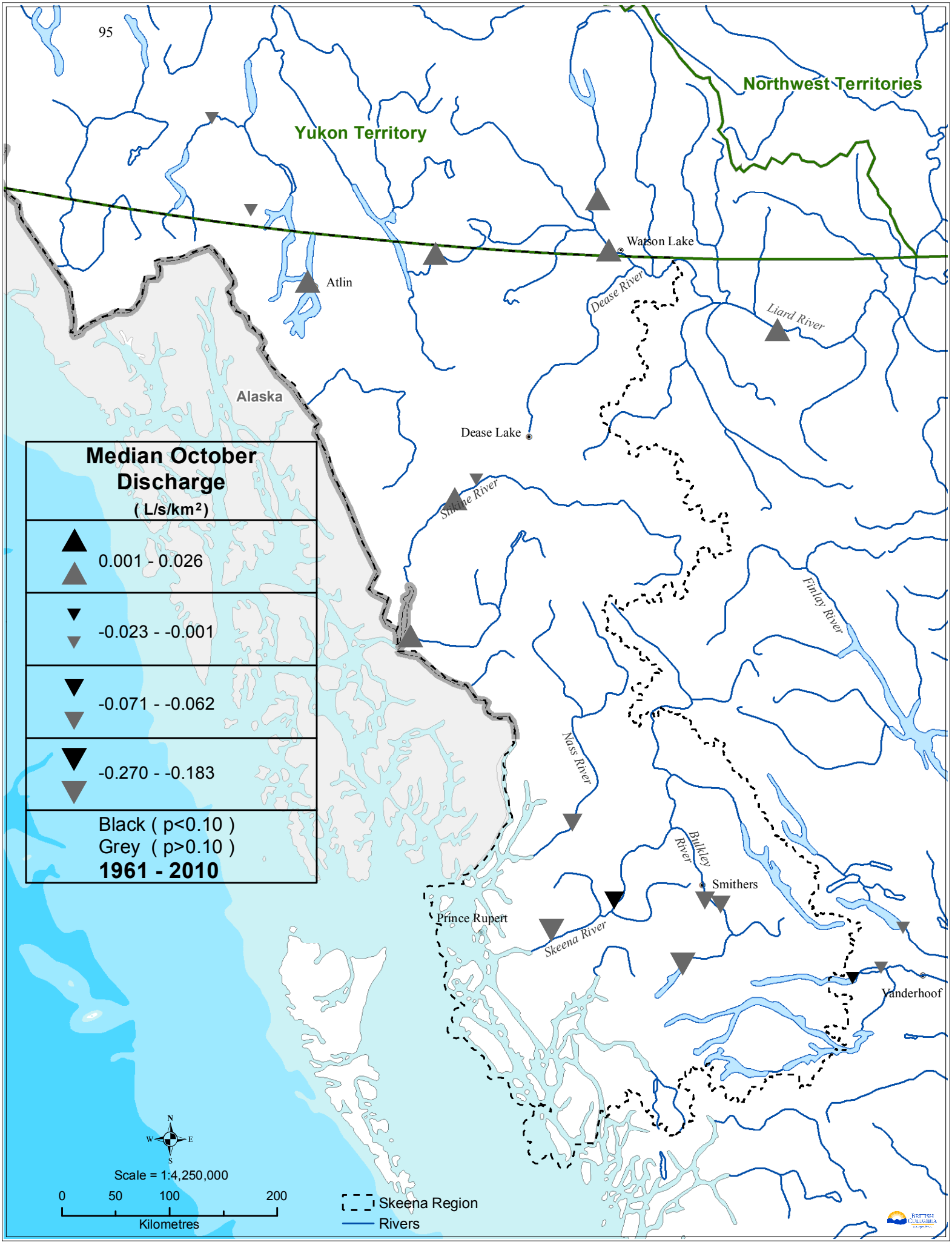

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median May Discharge
(L/s/km²)
0.705
0.297 - 0.429
0.007 - 0.224
-0.008 - -0.001
Neutral
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

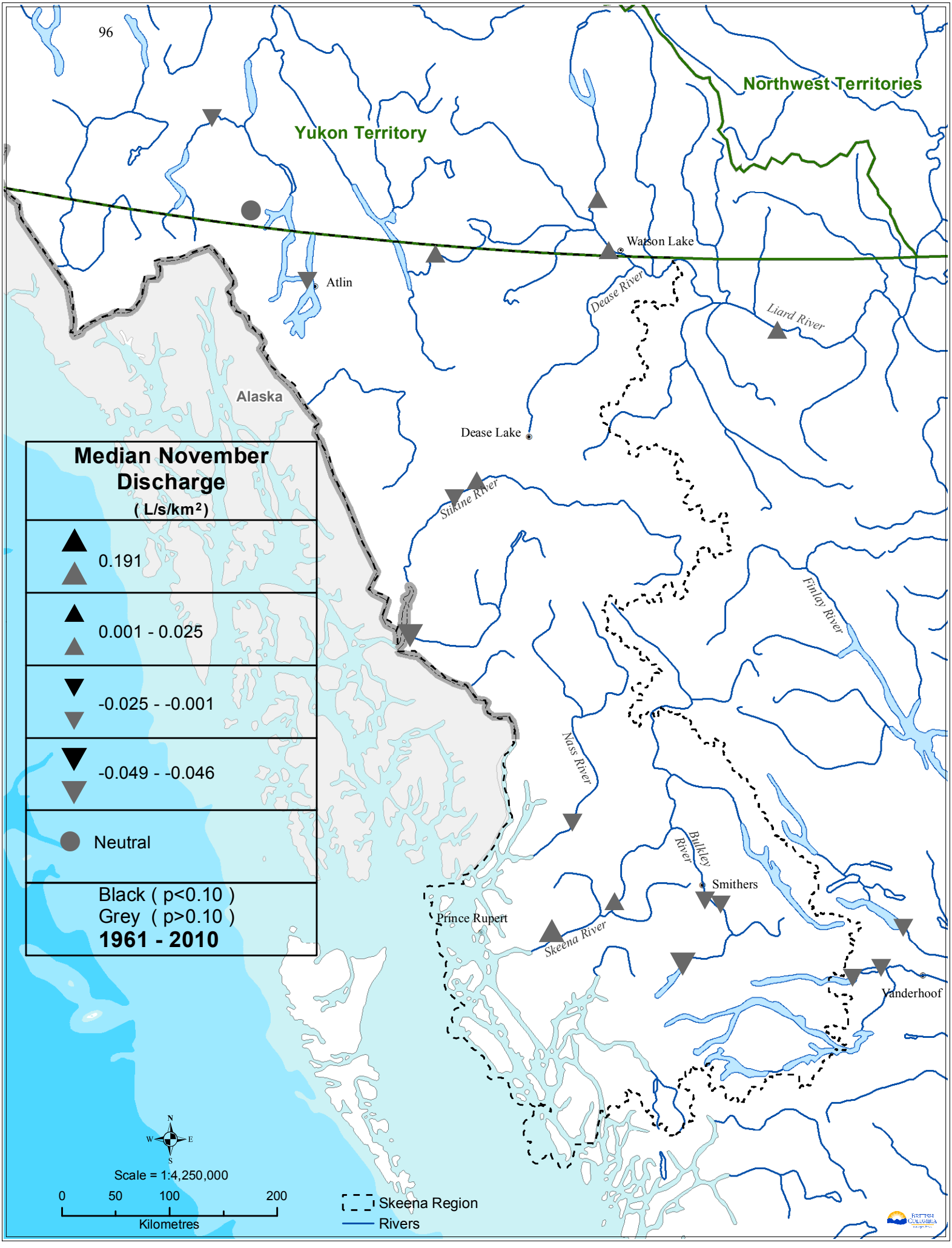

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median June Discharge
(L/s/km²)
0.114 - 0.421
0.019 - 0.047
-0.282 - -0.016
-0.515
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

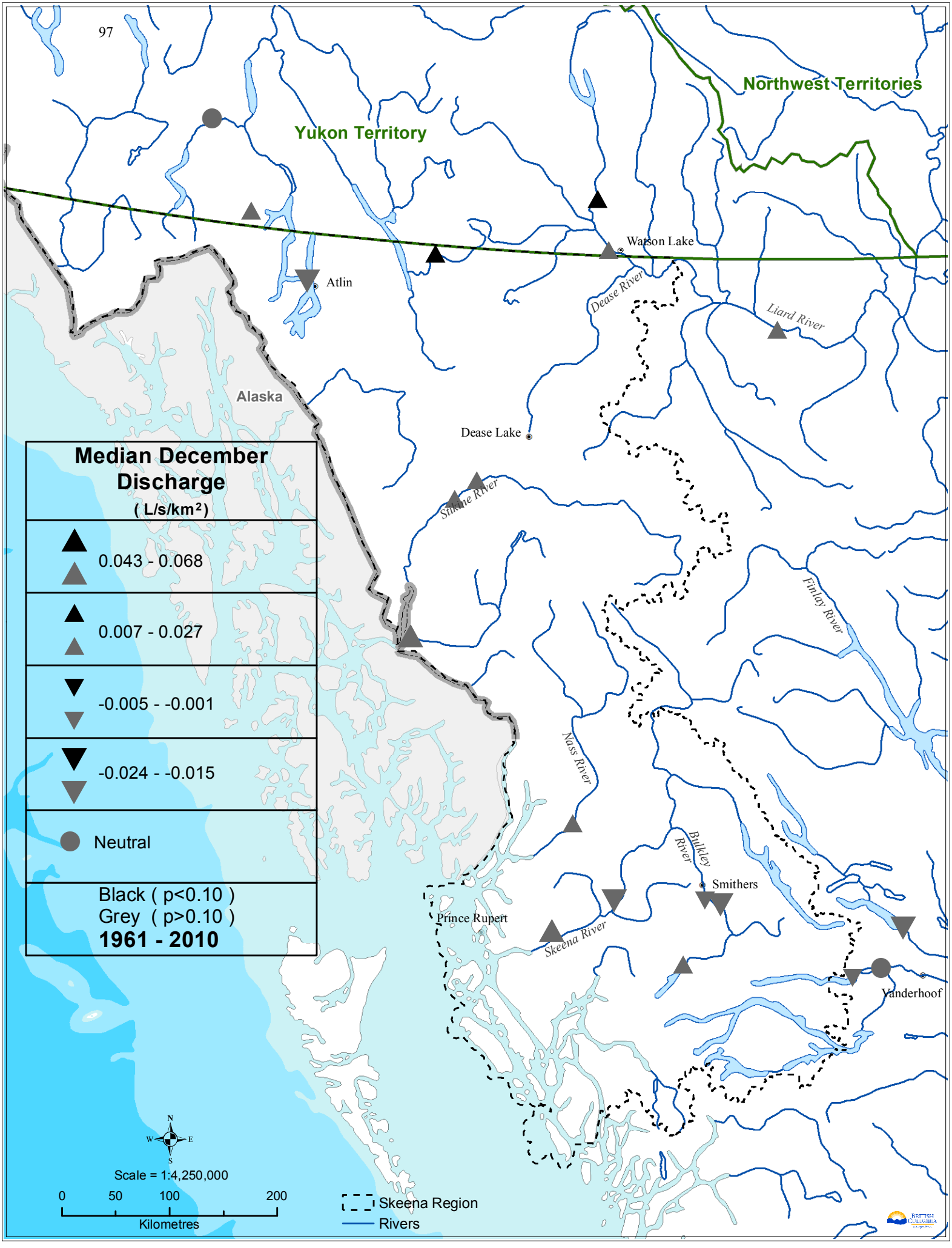

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median July Discharge
(L/s/km²)
0.012 - 0.101
-0.165 - -0.035
-0.384 - -0.255
-0.957
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

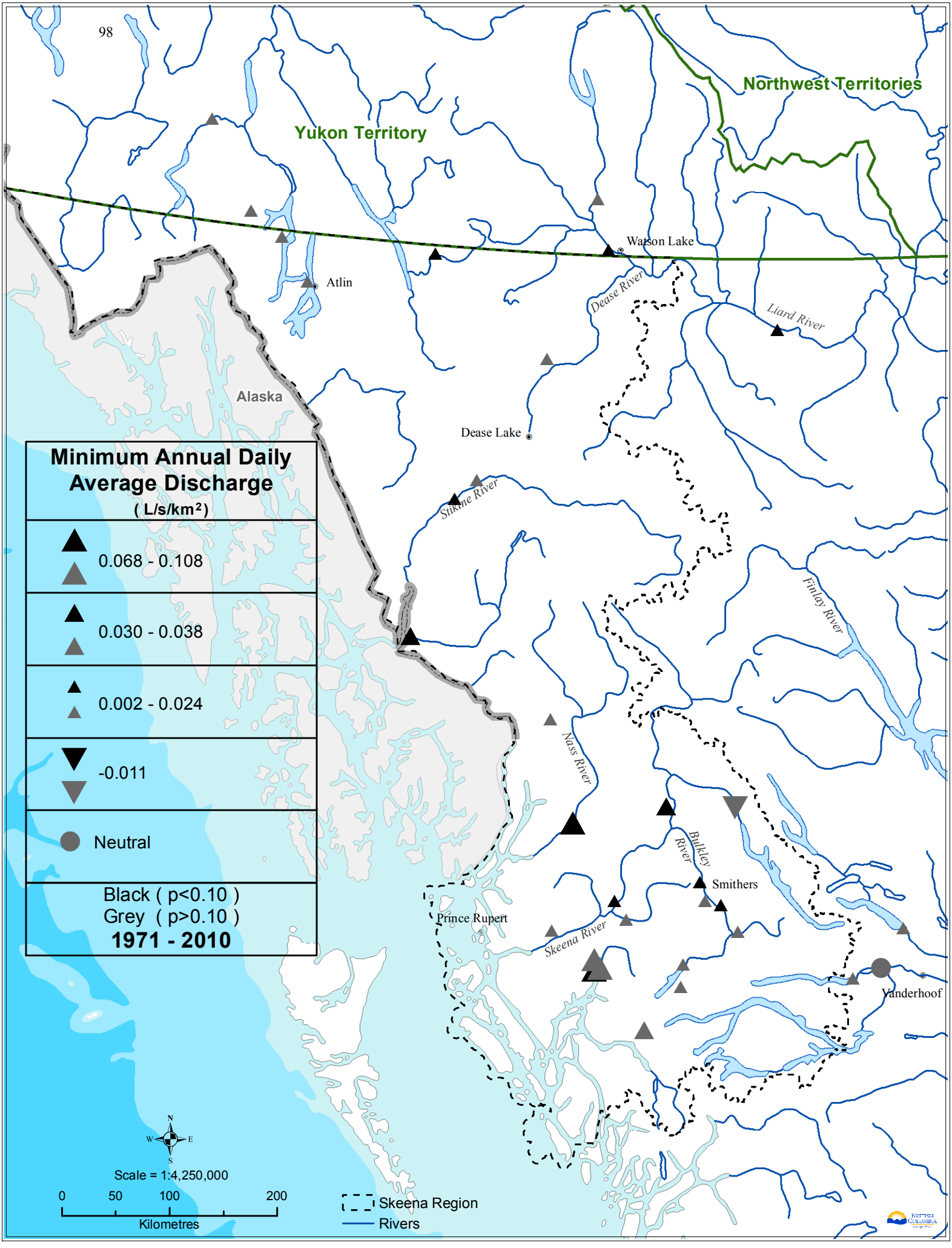

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median August Discharge
(L/s/km²)
0.157
0.006
-0.219 - -0.028
-0.541 - -0.345
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

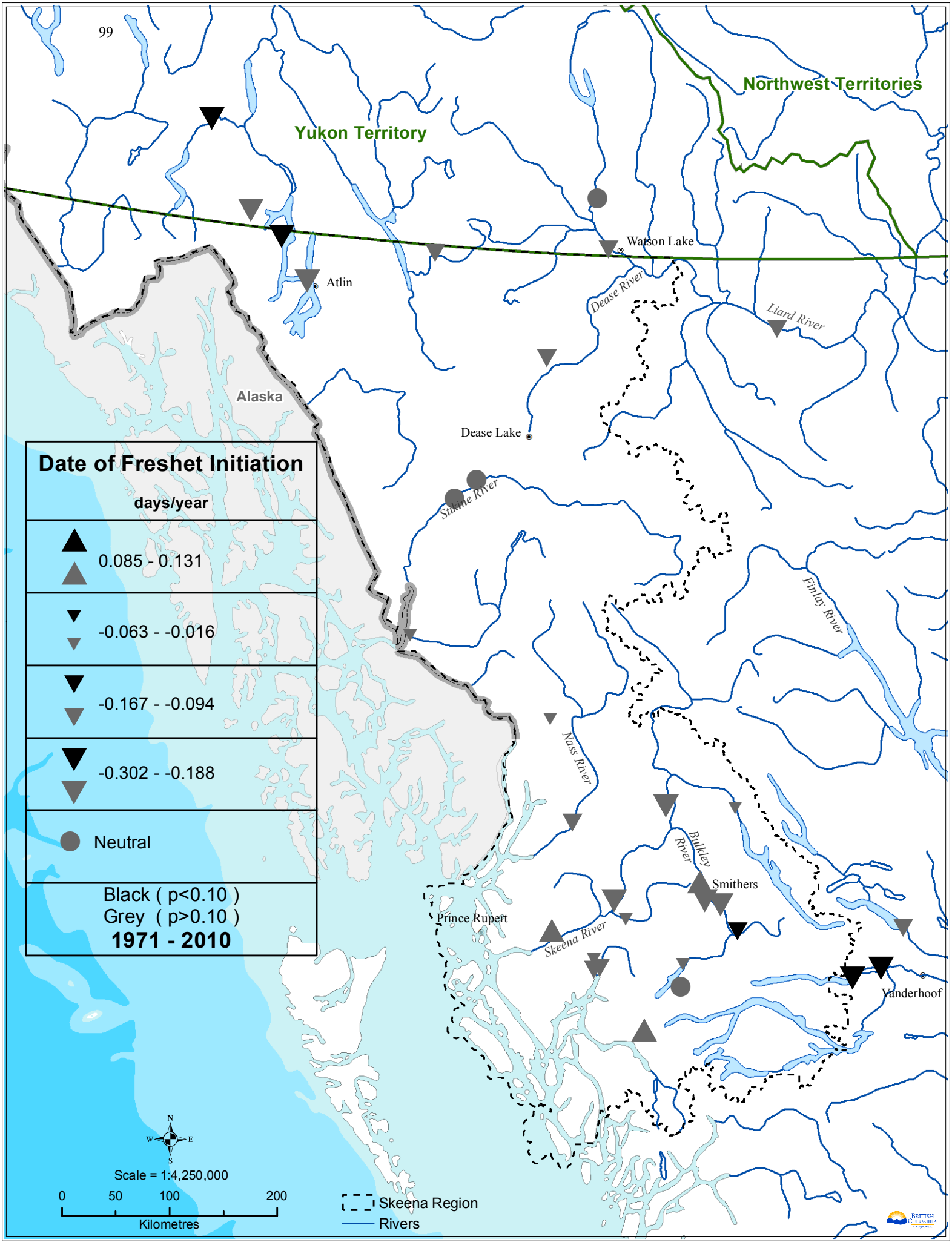

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median September Discharge
(L/s/km²)
0.073 - 0.178
0.026 - 0.035
-0.058 - -0.004
-0.122
Neutral
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

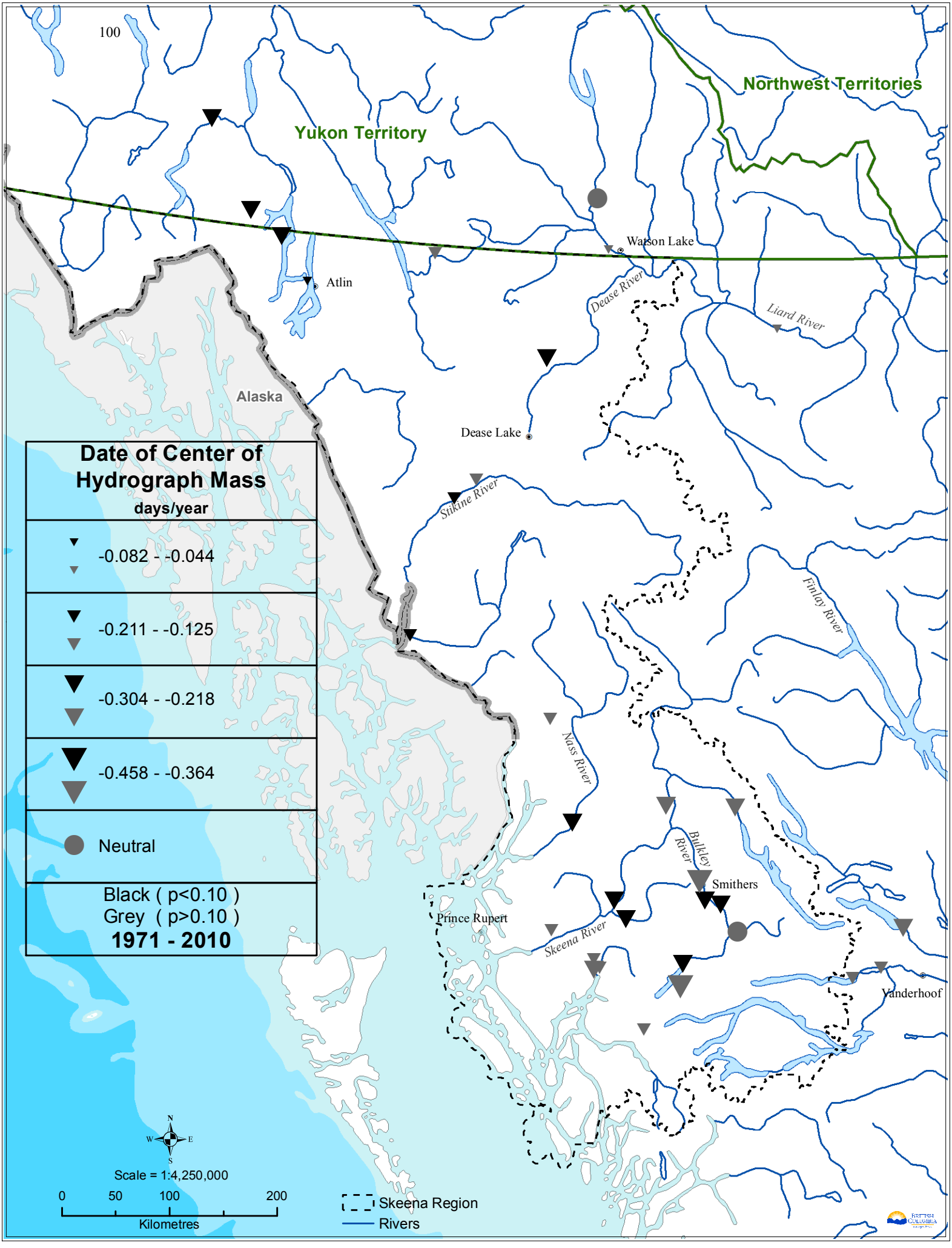

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median October Discharge
(L/s/km²)
0.001 - 0.026
-0.023 - -0.001
-0.071 - -0.062
-0.270 - -0.183
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

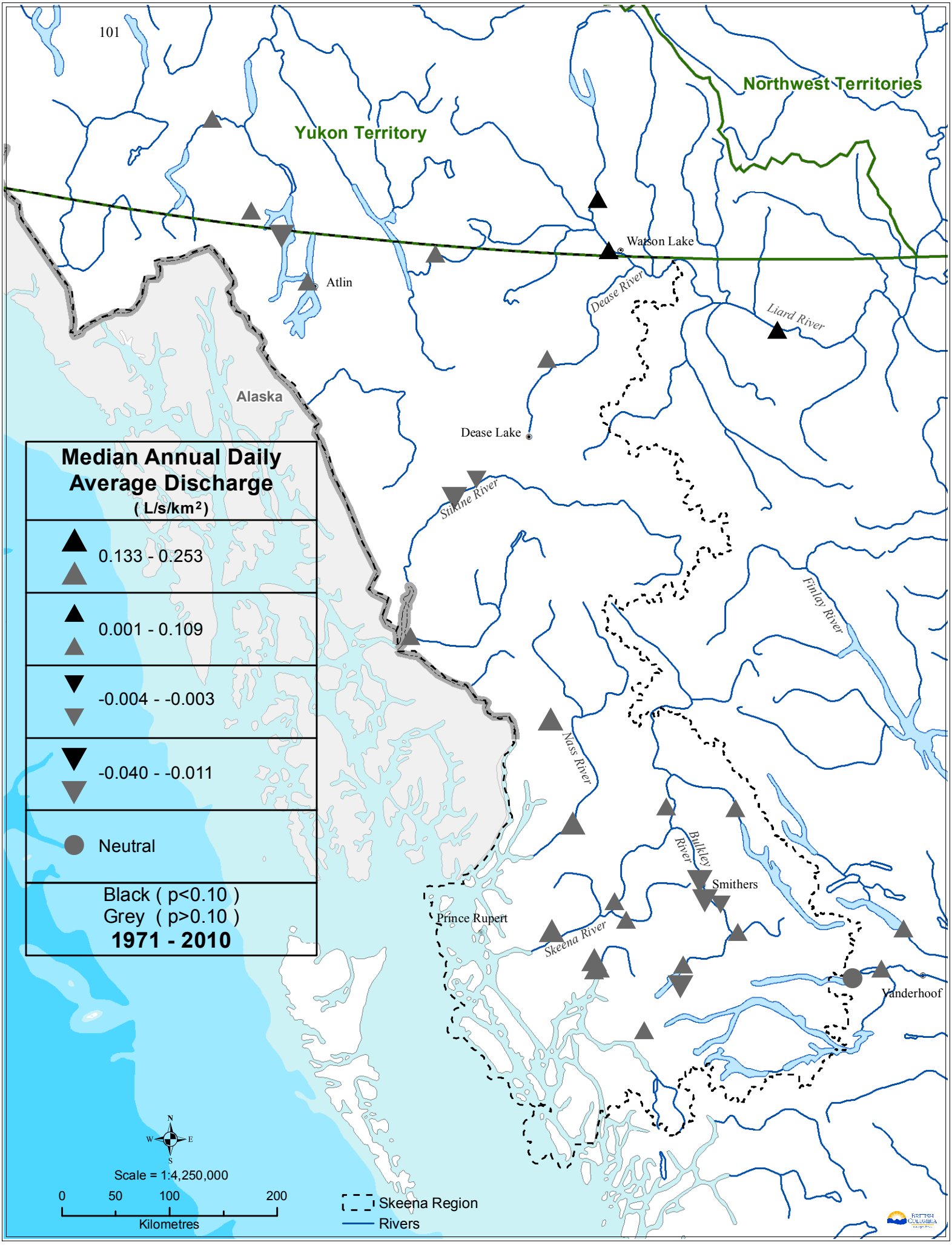

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median November Discharge
(L/s/km²)
0.191
0.001 - 0.025
-0.025 - -0.001
-0.049 - -0.046
Neutral
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

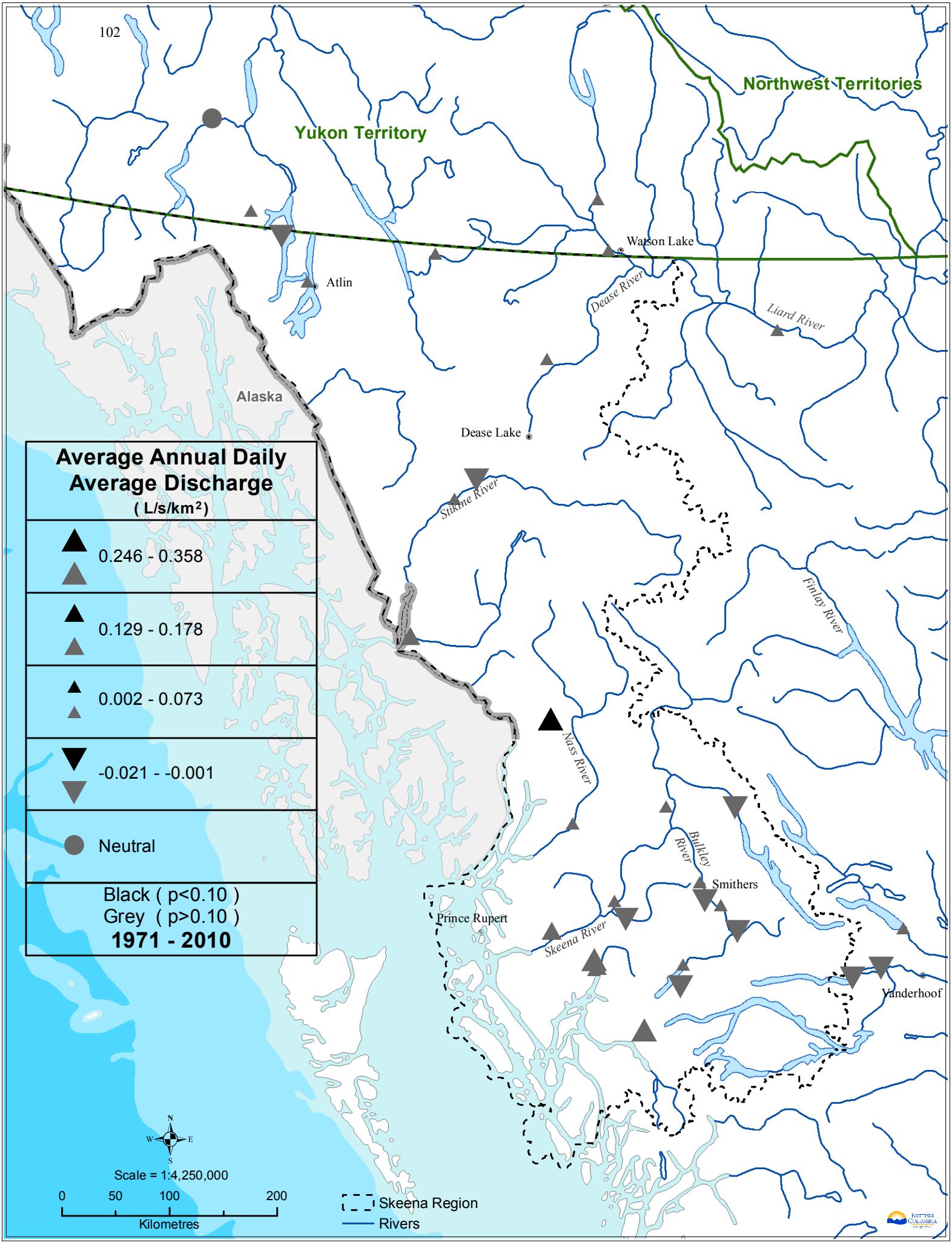

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median December Discharge
(L/s/km²)
0.043 - 0.068
0.007 - 0.027
-0.005 - -0.001
-0.024 - -0.015
Neutral
Black (p<0.10)
Grey (p>0.10)
1961 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

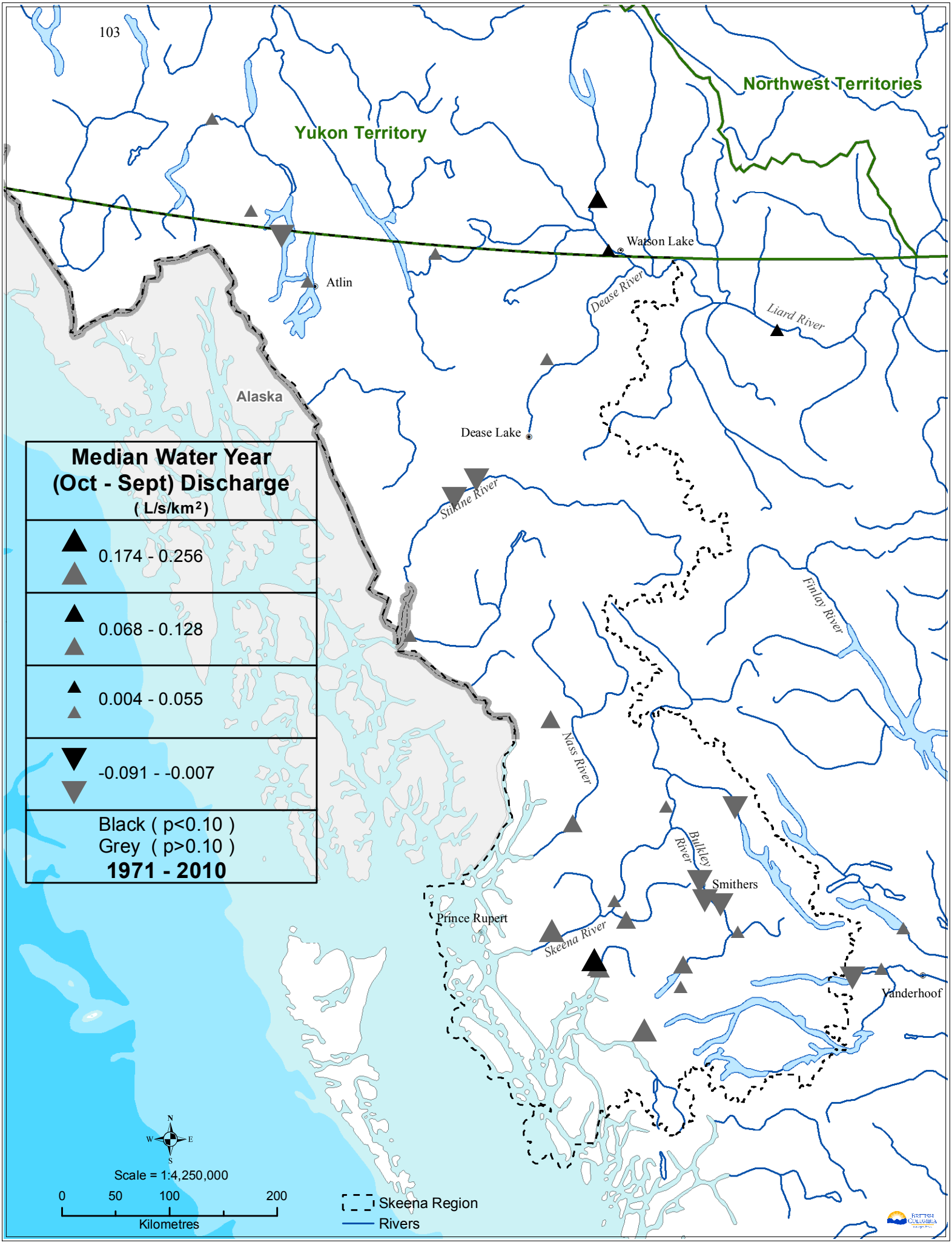

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
Minimum Annual Daily Average Discharge
(L/s/km²)
0.068 - 0.108
0.030 - 0.038
0.002 - 0.024
-0.011
Neutral
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

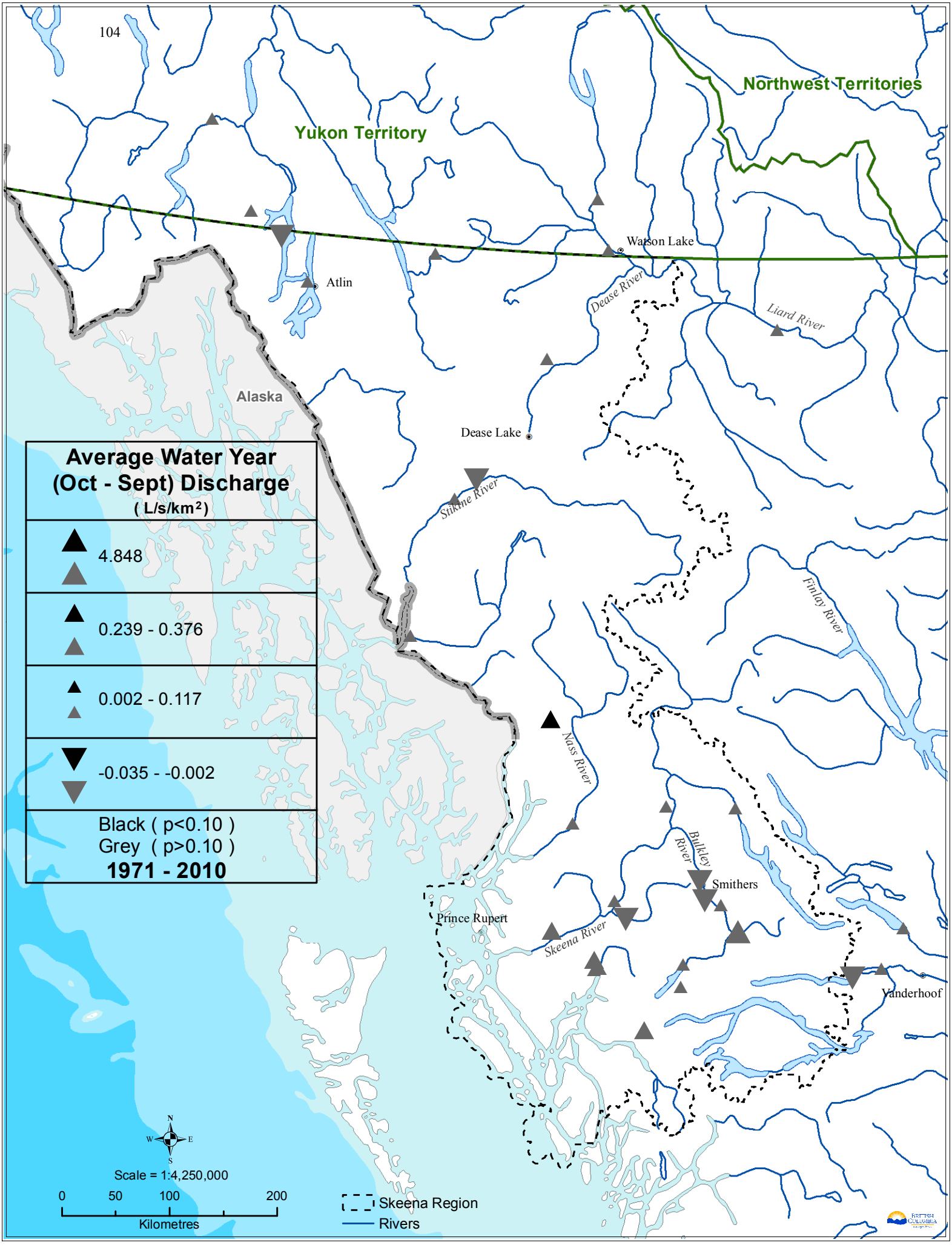

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Date of Freshet Initiation
days/year
0.085 - 0.131
-0.063 - -0.016
-0.167 - -0.094
-0.302 - -0.188
Neutral
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

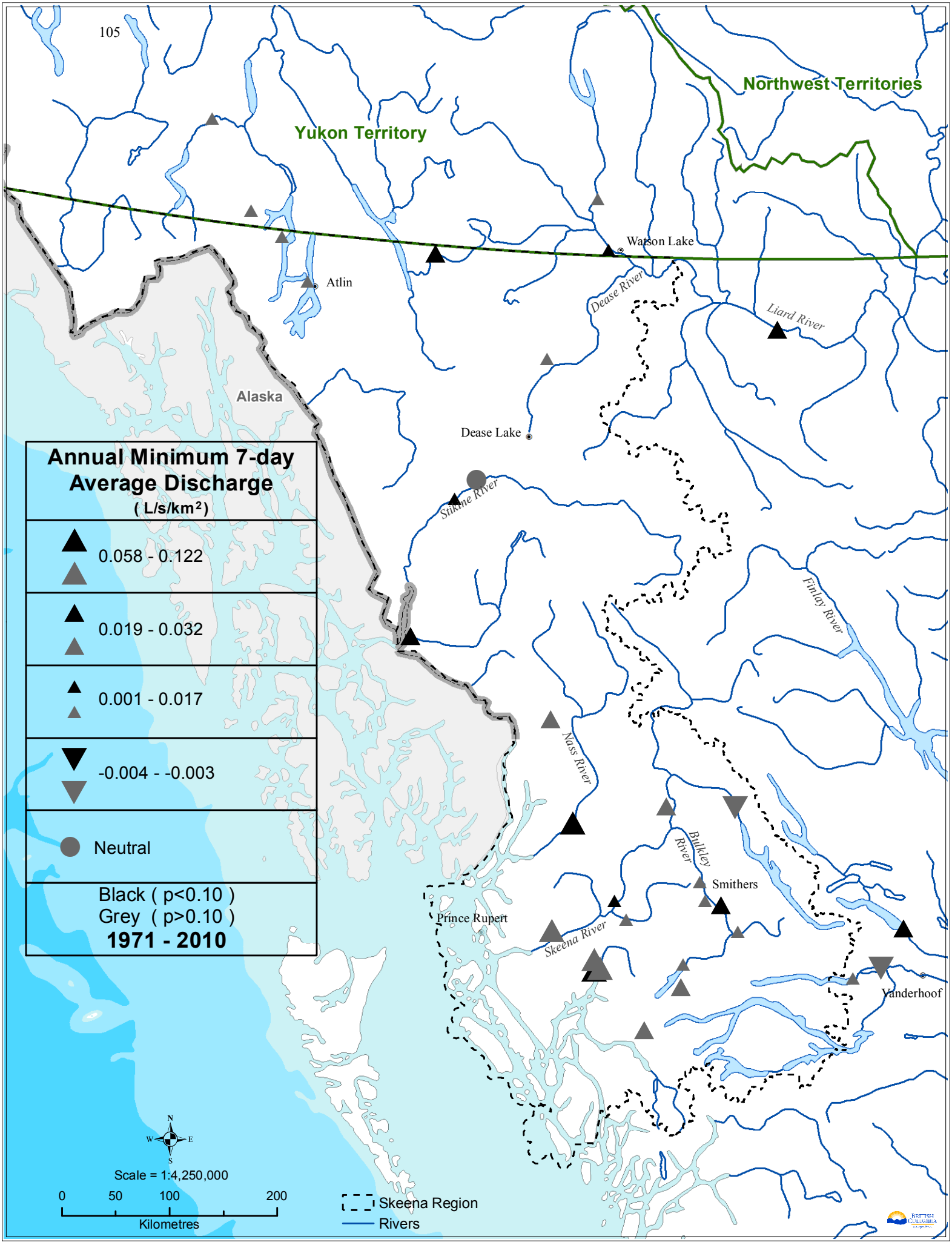

100
Yukon Territory
Northwest Territories
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Date of Center of Hydrograph Mass
days/year
-0.082 - -0.044
-0.211 - -0.125
-0.304 - -0.218
-0.458 - -0.364
Neutral
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

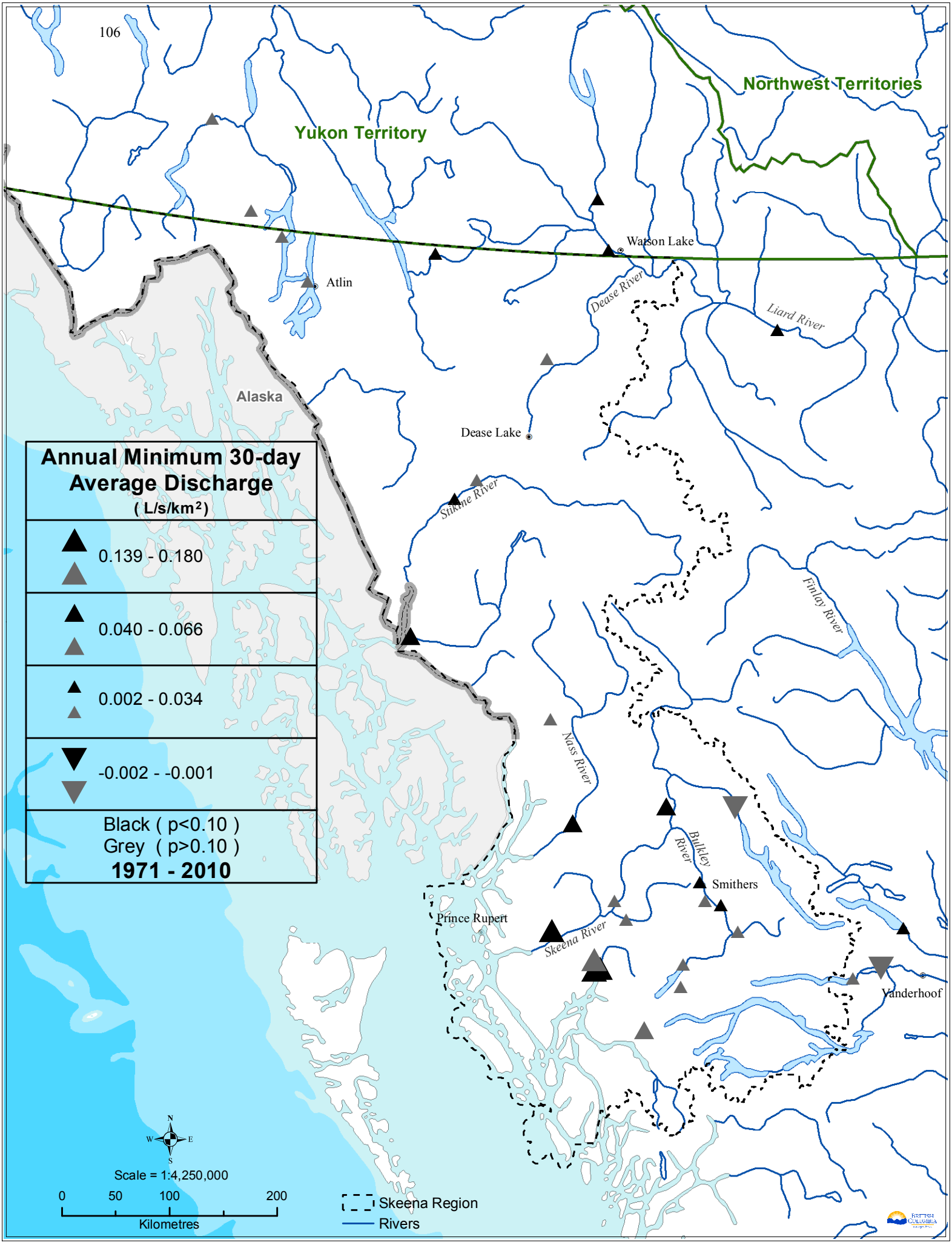

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
Median Annual Daily Average Discharge
(L/s/km²)
0.133 - 0.253
0.001 - 0.109
-0.004 - -0.003
-0.040 - -0.011
Neutral
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

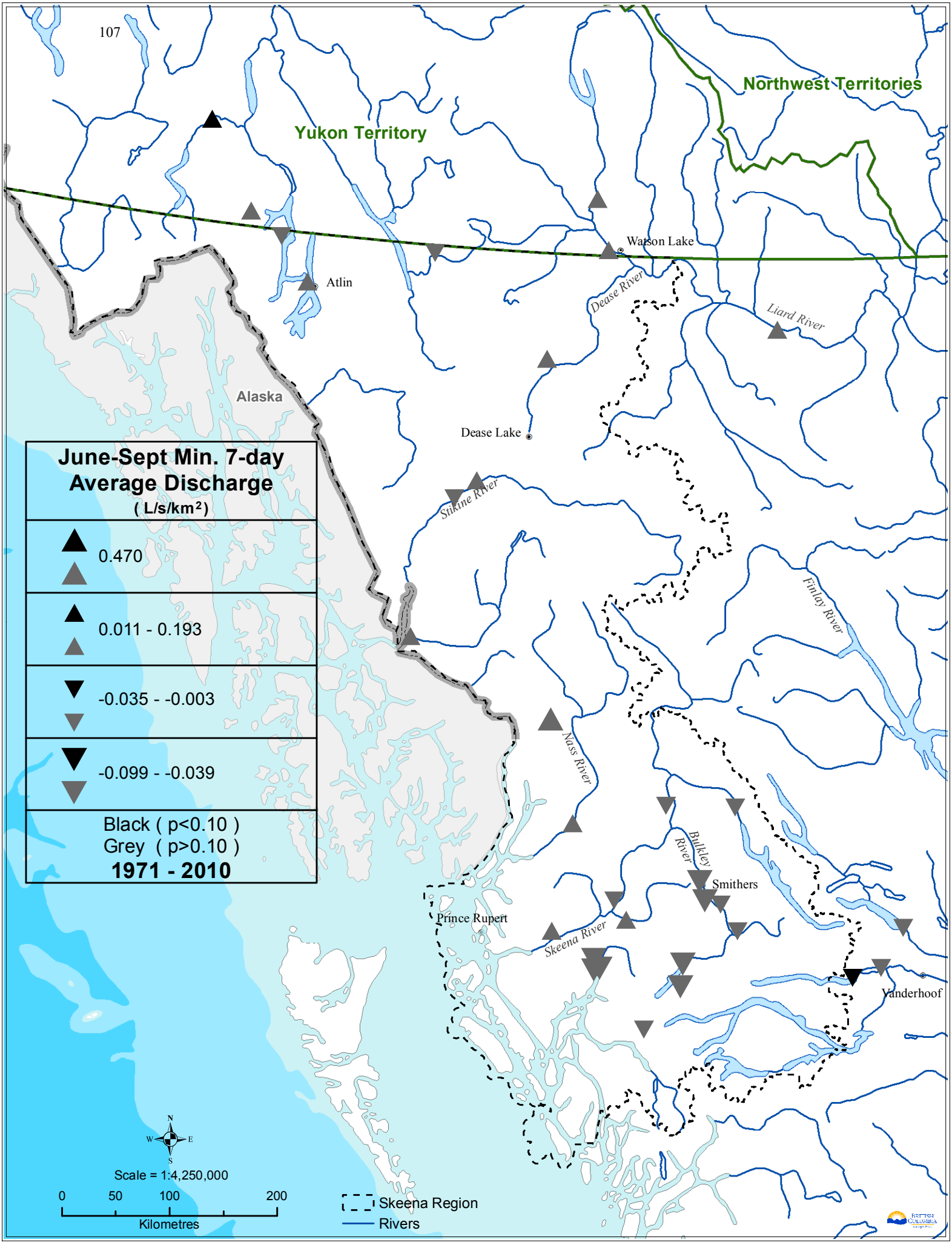

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Average Annual Daily Average Discharge
(L/s/km²)
0.246 - 0.358
0.129 - 0.178
0.002 - 0.073
-0.021 - -0.001
Neutral
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

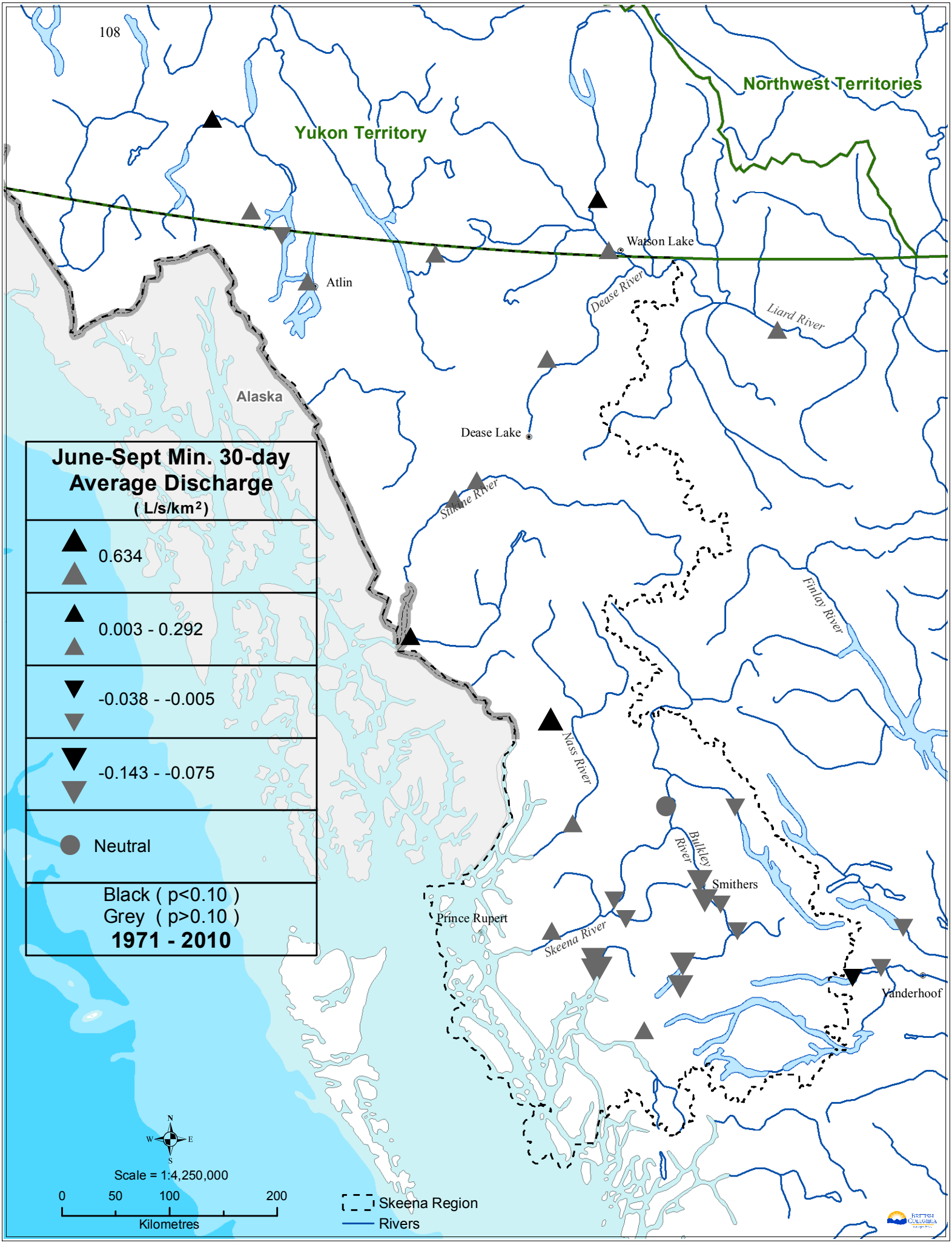

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median Water Year
(Oct - Sept) Discharge
(L/s/km²)
0.174 - 0.256
0.068 - 0.128
0.004 - 0.055
-0.091 - -0.007
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

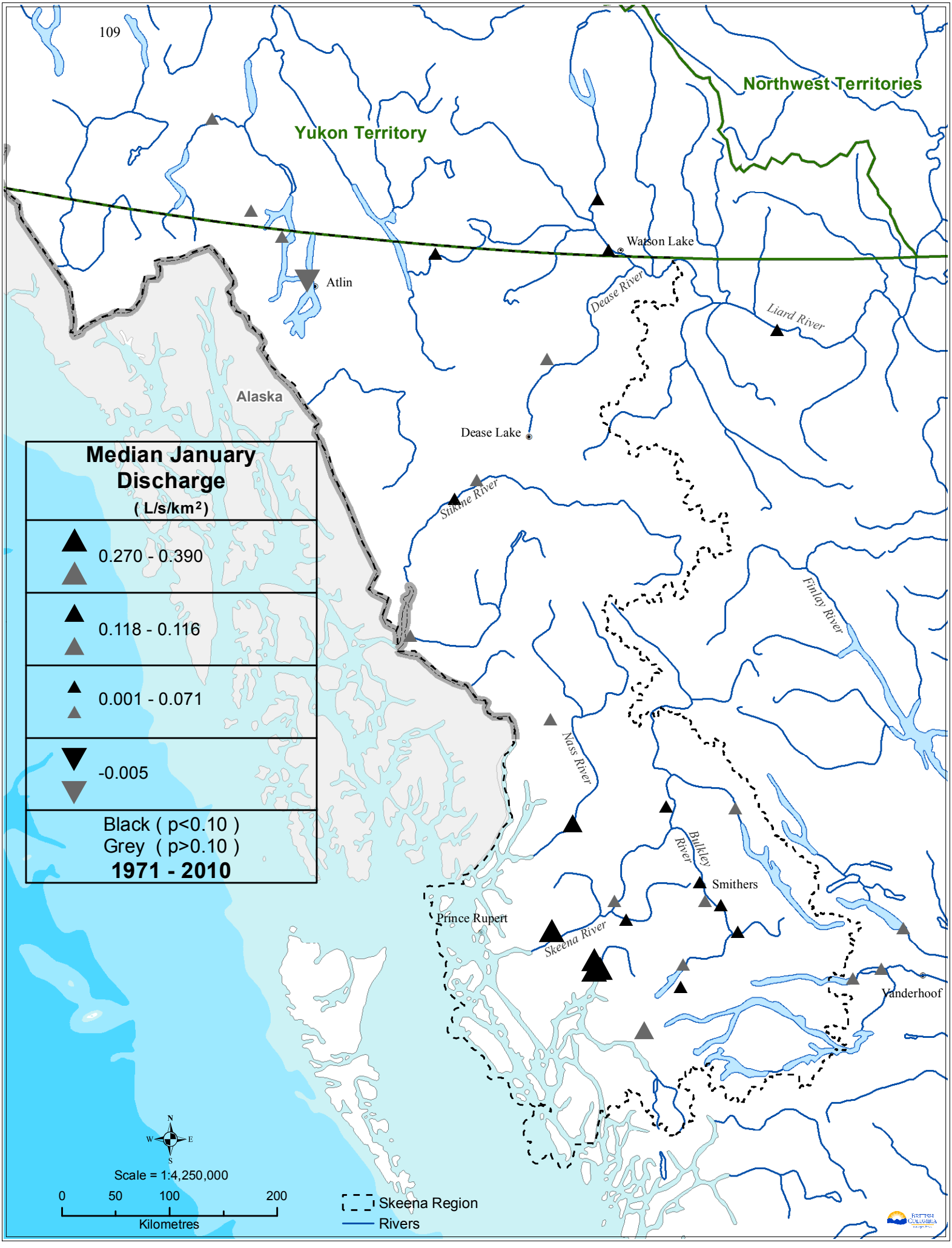

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
Average Water Year
(Oct - Sept) Discharge
(L/s/km²)
4.848
0.239 - 0.376
0.002 - 0.117
-0.035 - -0.002
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

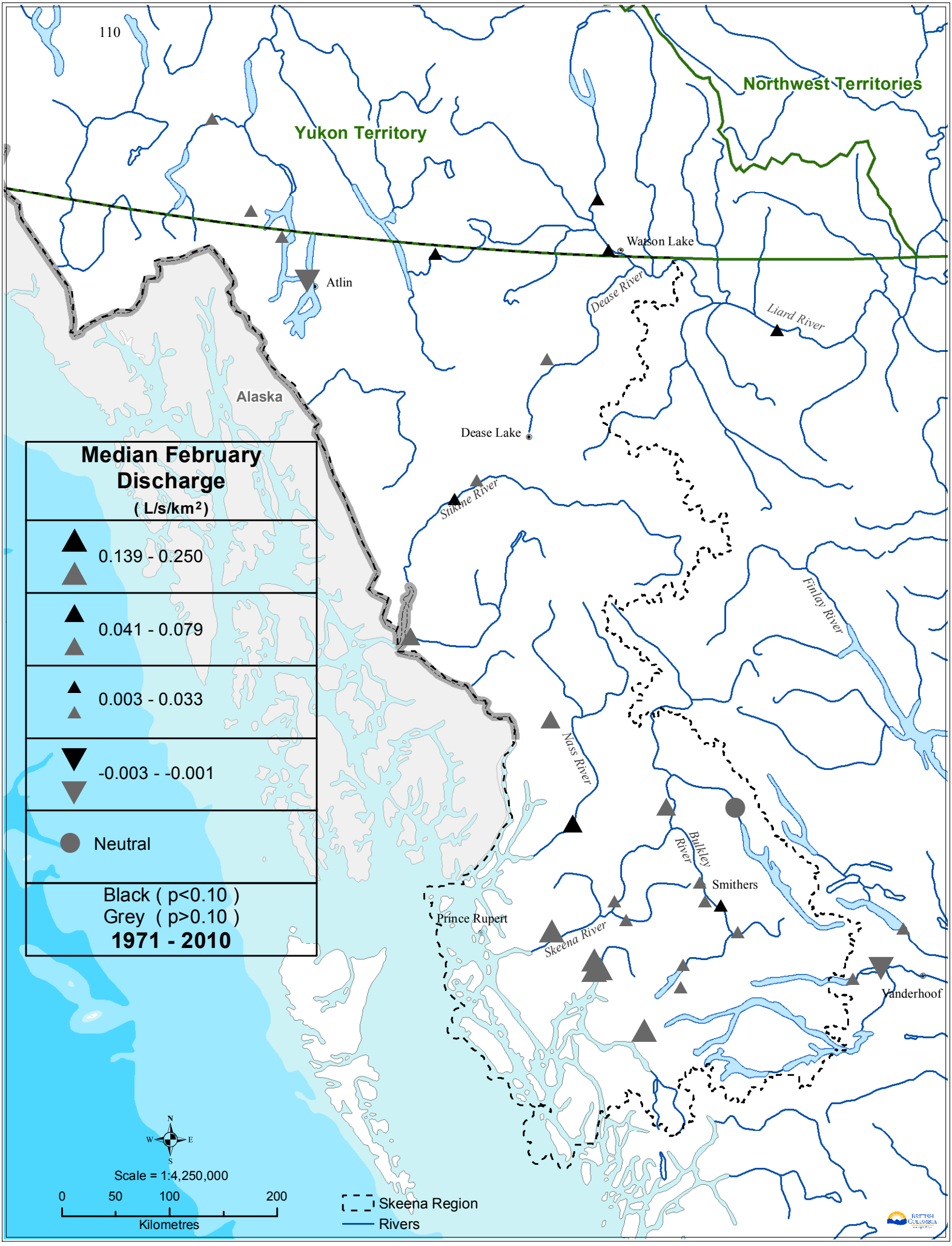

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
Annual Minimum 7-day Average Discharge
(L/s/km²)
0.058 - 0.122
0.019 - 0.032
0.001 - 0.017
-0.004 - -0.003
Neutral
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

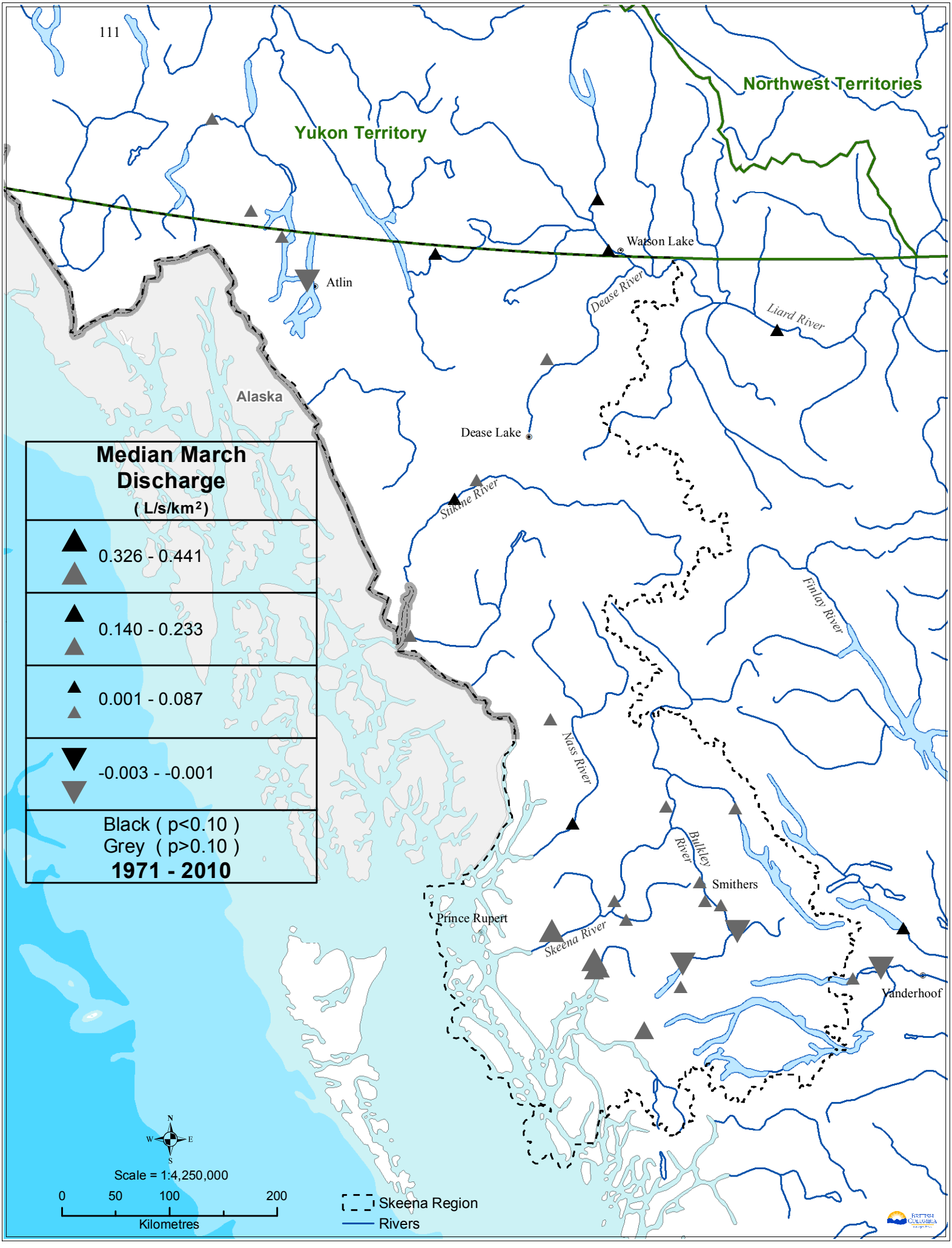

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
Annual Minimum 30-day Average Discharge
(L/s/km²)
0.139 - 0.180
0.040 - 0.066
0.002 - 0.034
-0.002 - -0.001
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

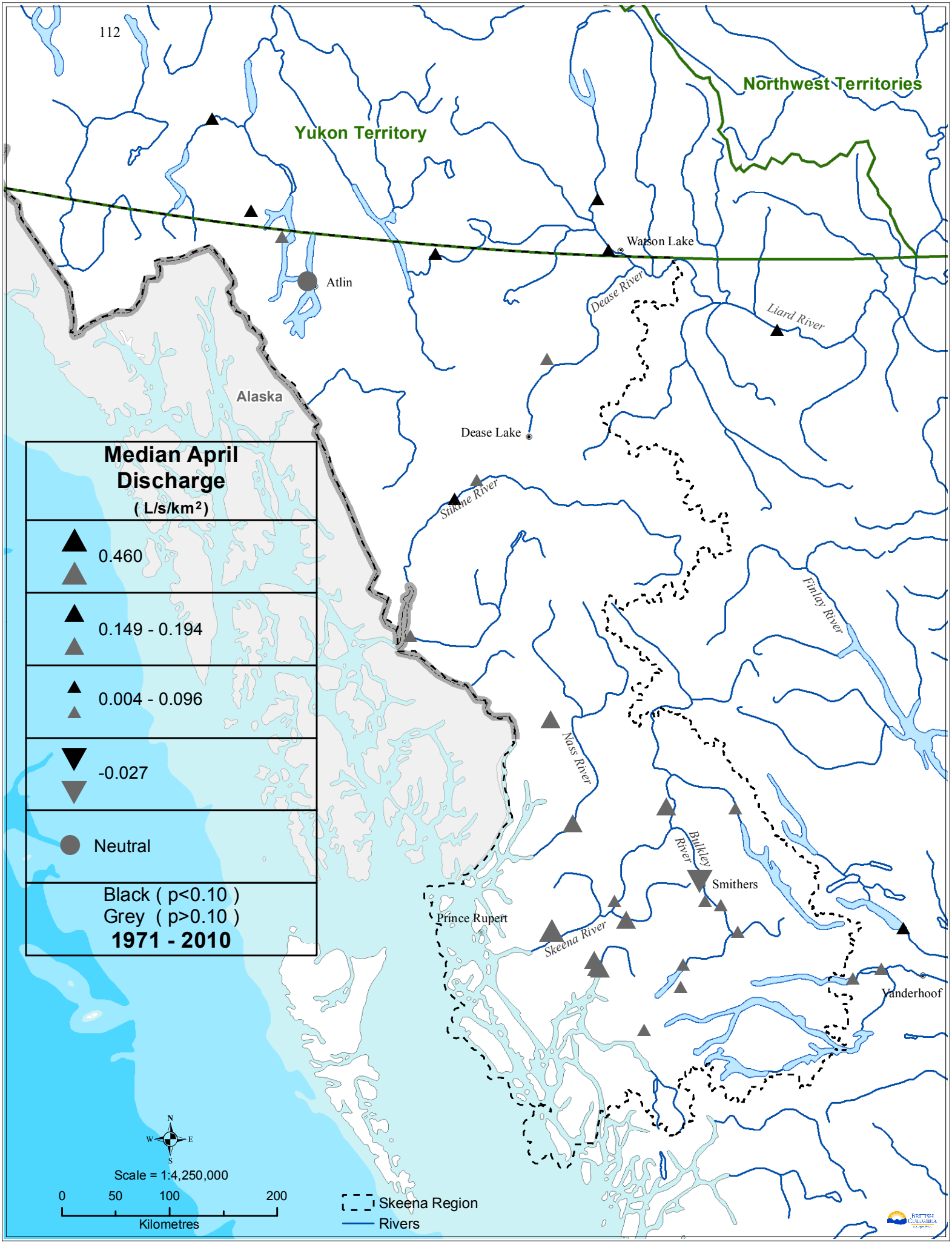

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
June-Sept Min. 7-day Average Discharge
(L/s/km²)
0.470
0.011 - 0.193
-0.035 - -0.003
-0.099 - -0.039
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

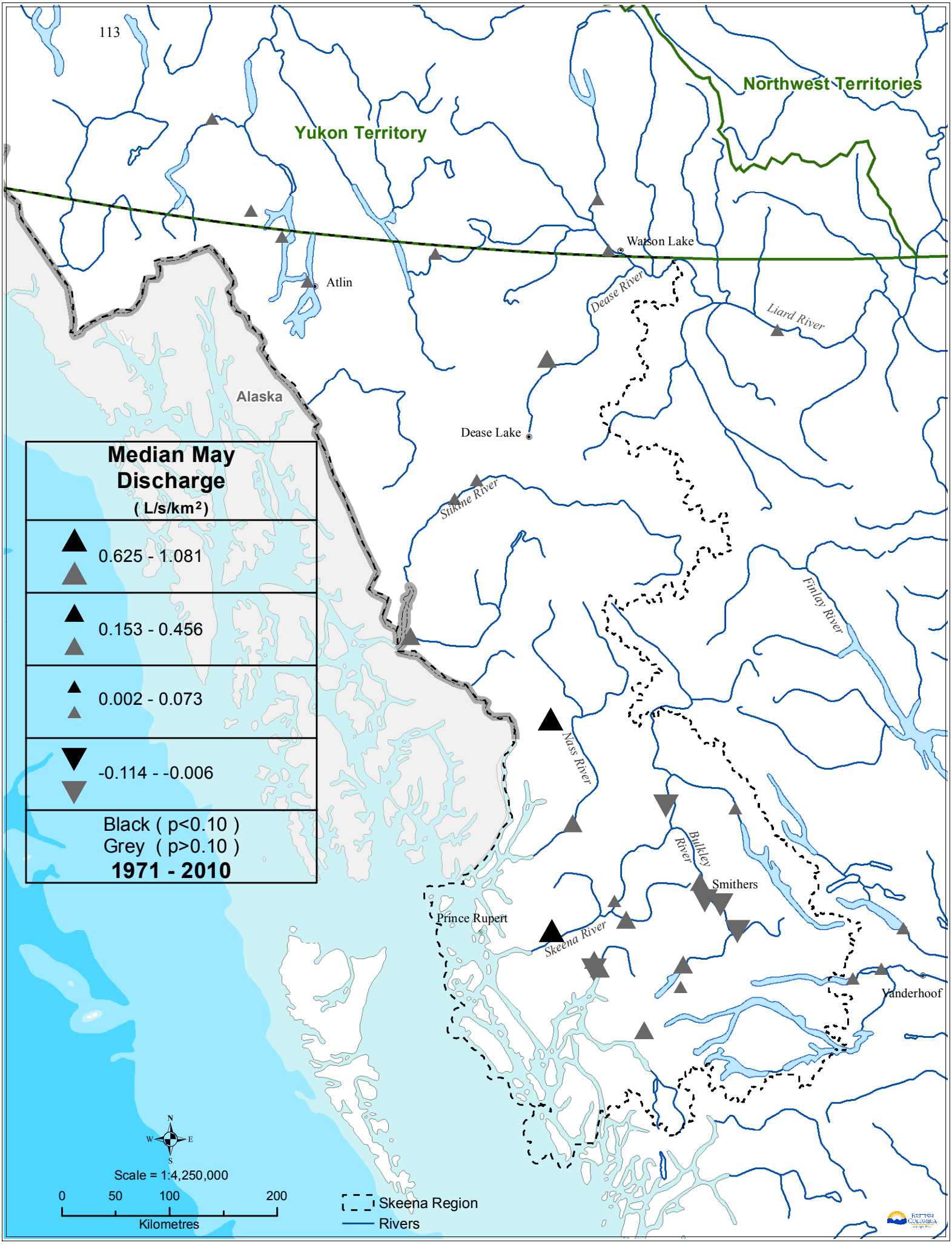

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
June-Sept Min. 30-day Average Discharge
(L/s/km²)
0.634
0.003 - 0.292
-0.038 - -0.005
-0.143 - -0.075
Neutral
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

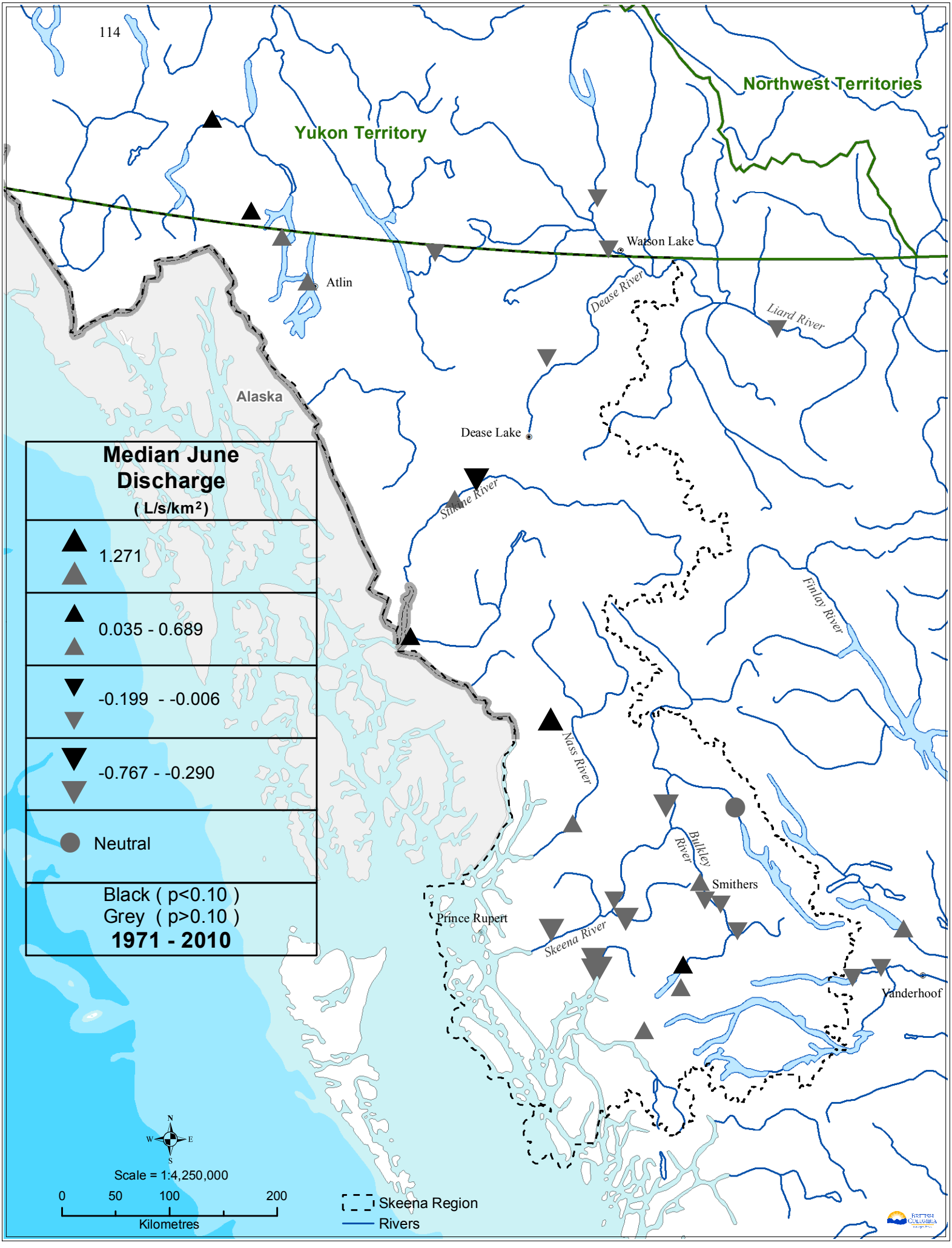

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median January Discharge
(L/s/km²)
0.270 - 0.390
0.118 - 0.116
0.001 - 0.071
-0.005
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

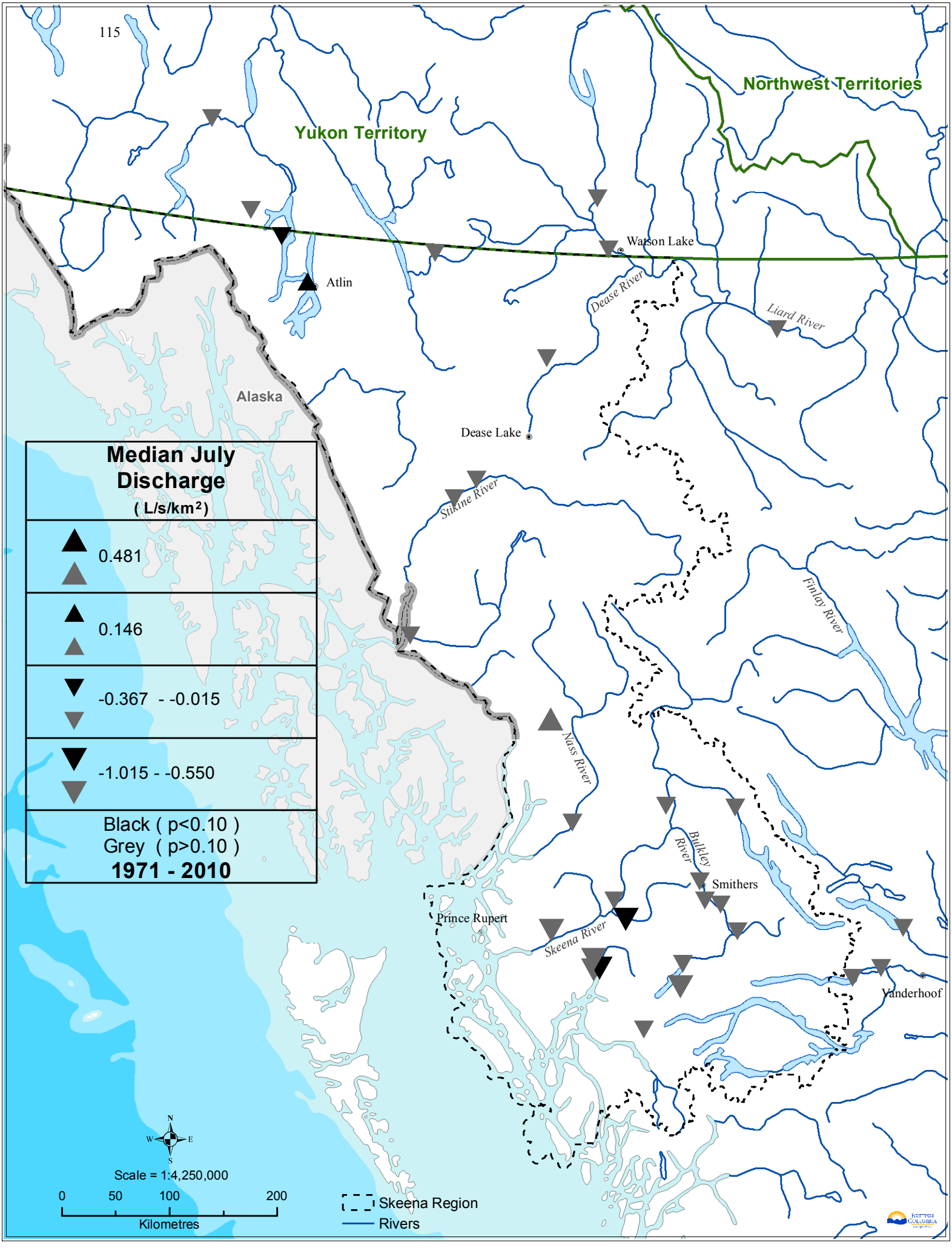

110
Yukon Territory
Northwest Territories
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median February Discharge
(L/s/km²)
0.139 - 0.250
0.041 - 0.079
0.003 - 0.033
-0.003 - -0.001
Neutral
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

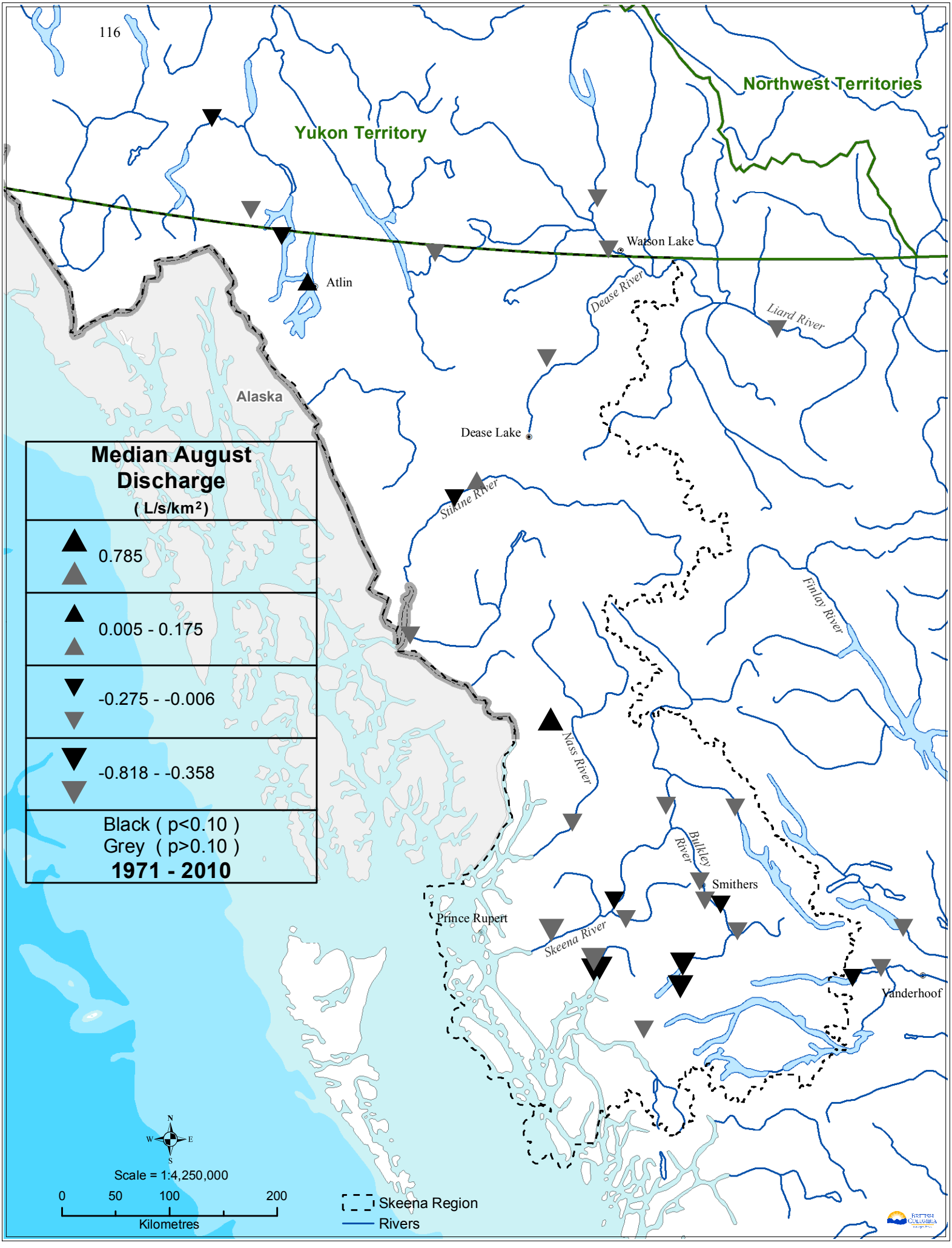

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median March Discharge
(L/s/km²)
0.326 - 0.441
0.140 - 0.233
0.001 - 0.087
-0.003 - -0.001
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

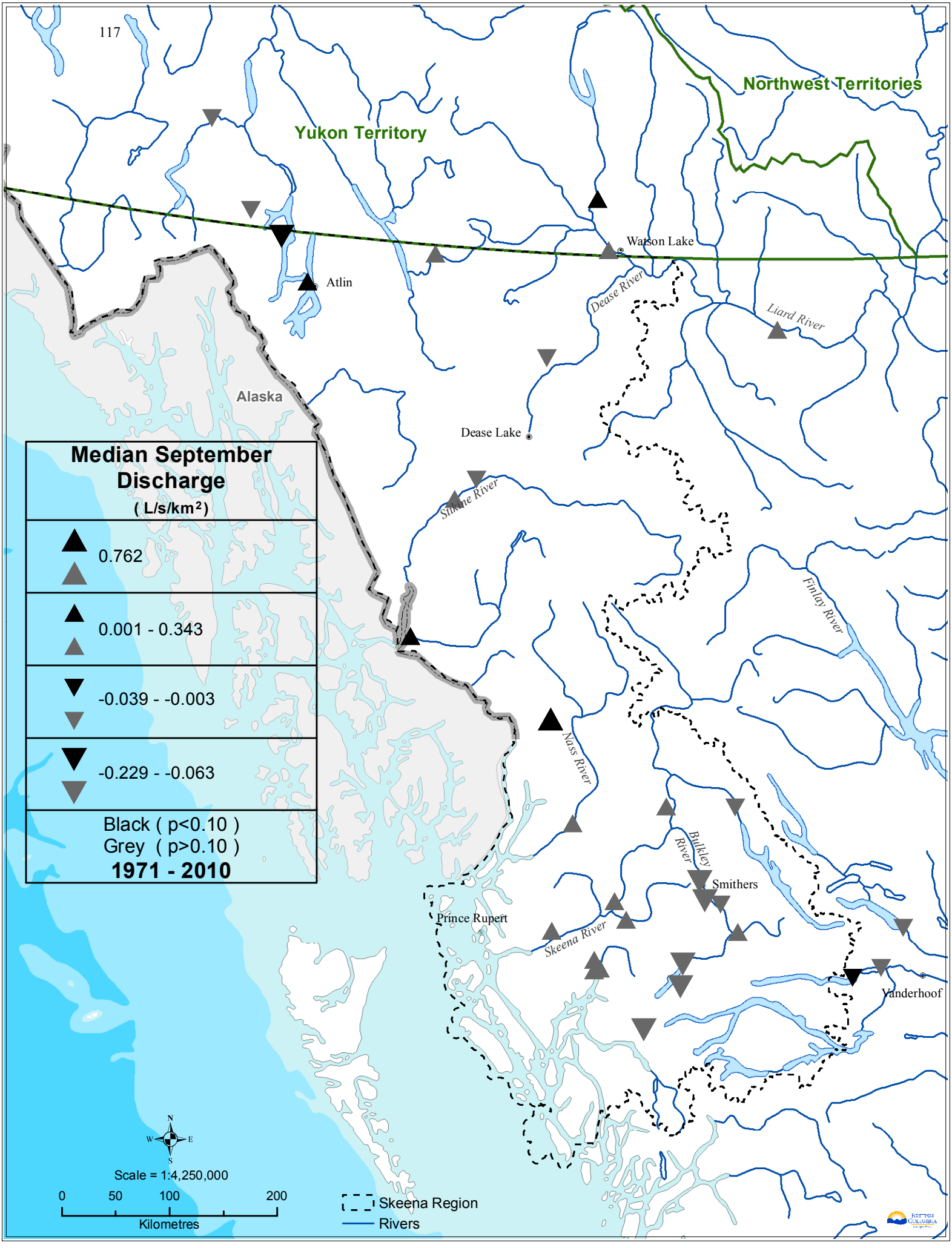

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median April Discharge
(L/s/km²)
0.460
0.149 - 0.194
0.004 - 0.096
-0.027
Neutral
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

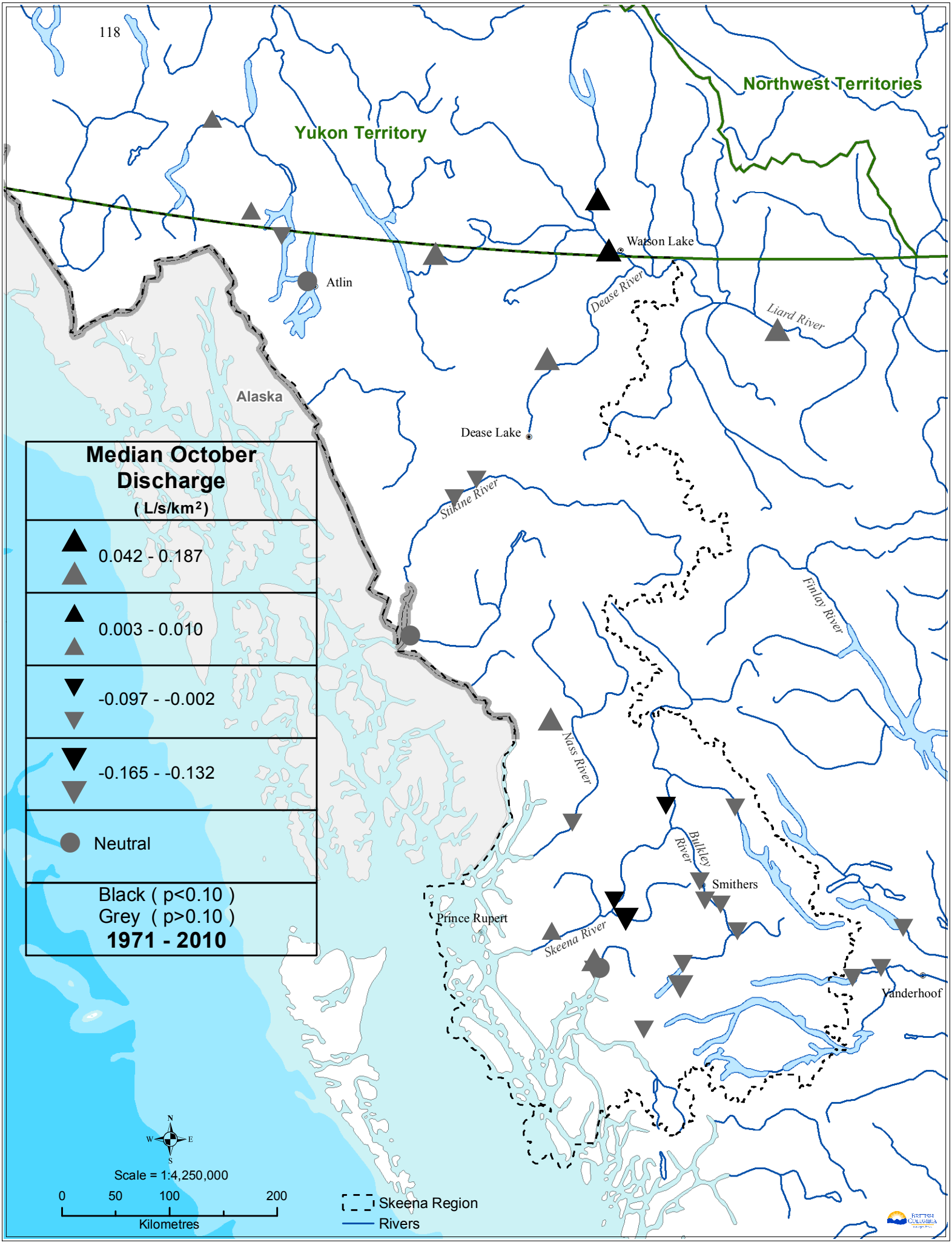

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median May Discharge
(L/s/km²)
0.625 - 1.081
0.153 - 0.456
0.002 - 0.073
-0.114 - -0.006
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

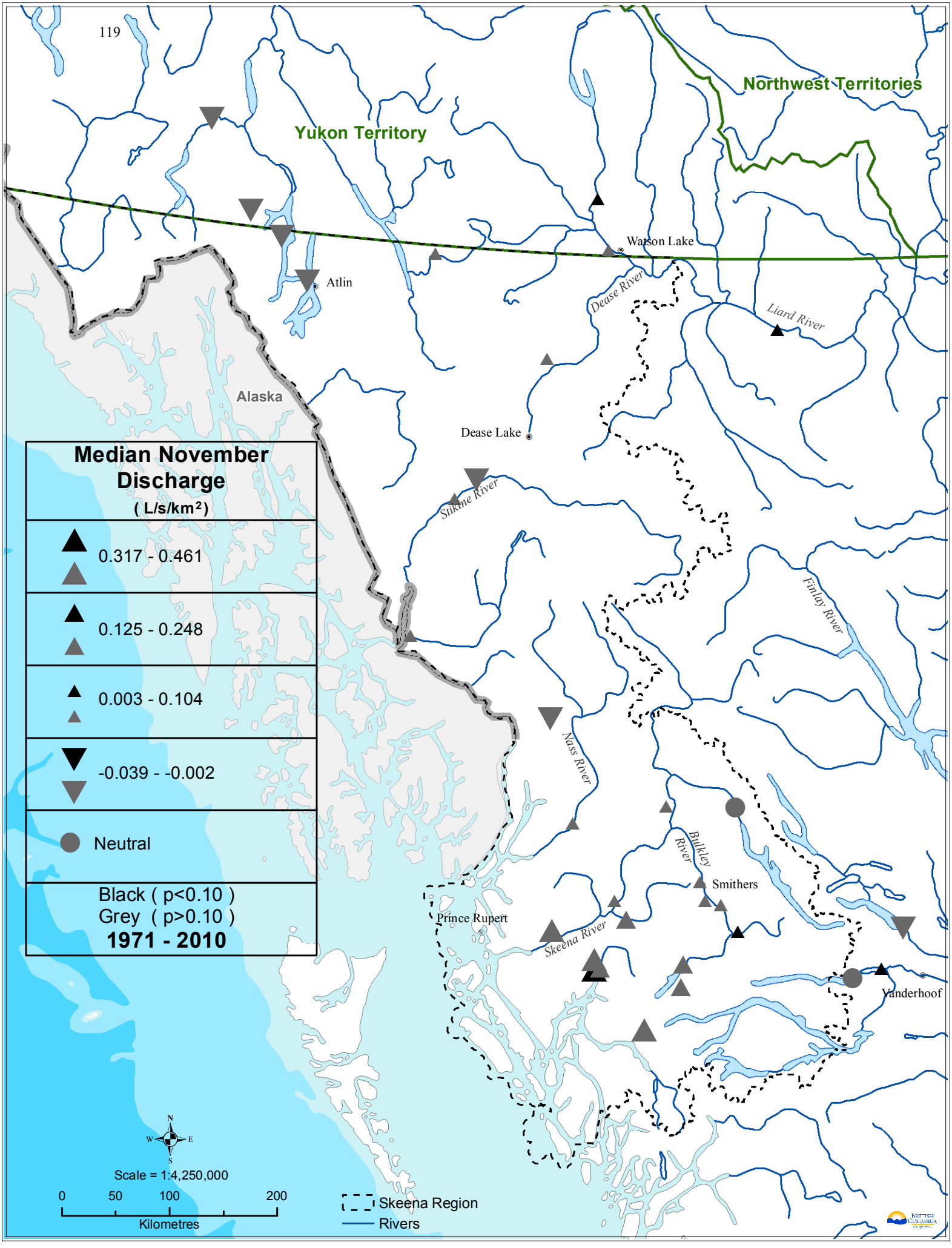

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
Median June Discharge
(L/s/km²)
1.271
0.035 - 0.689
-0.199 - -0.006
-0.767 - -0.290
Neutral
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

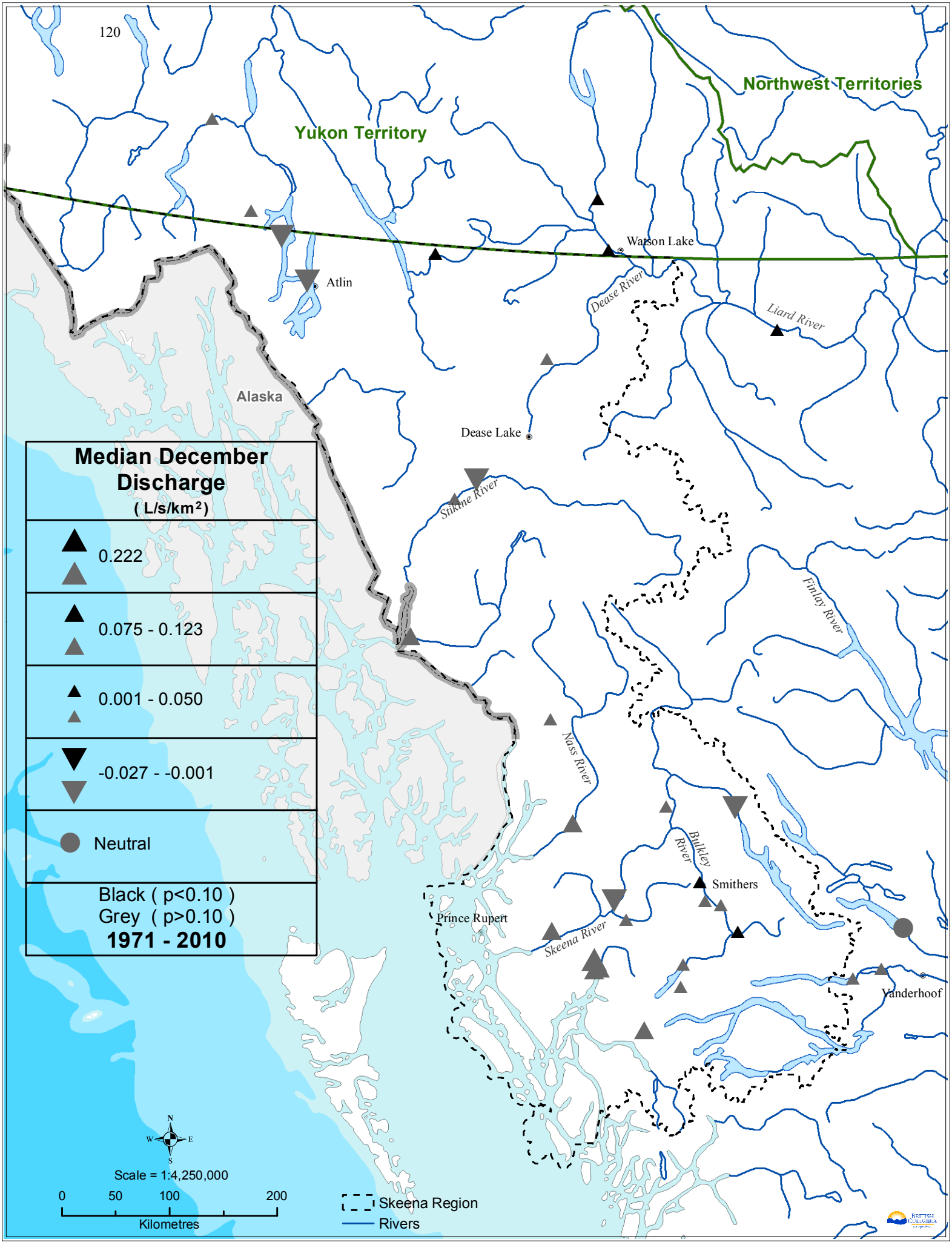

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median July Discharge
(L/s/km²)
0.481
0.146
-0.367 - -0.015
-1.015 - -0.550
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

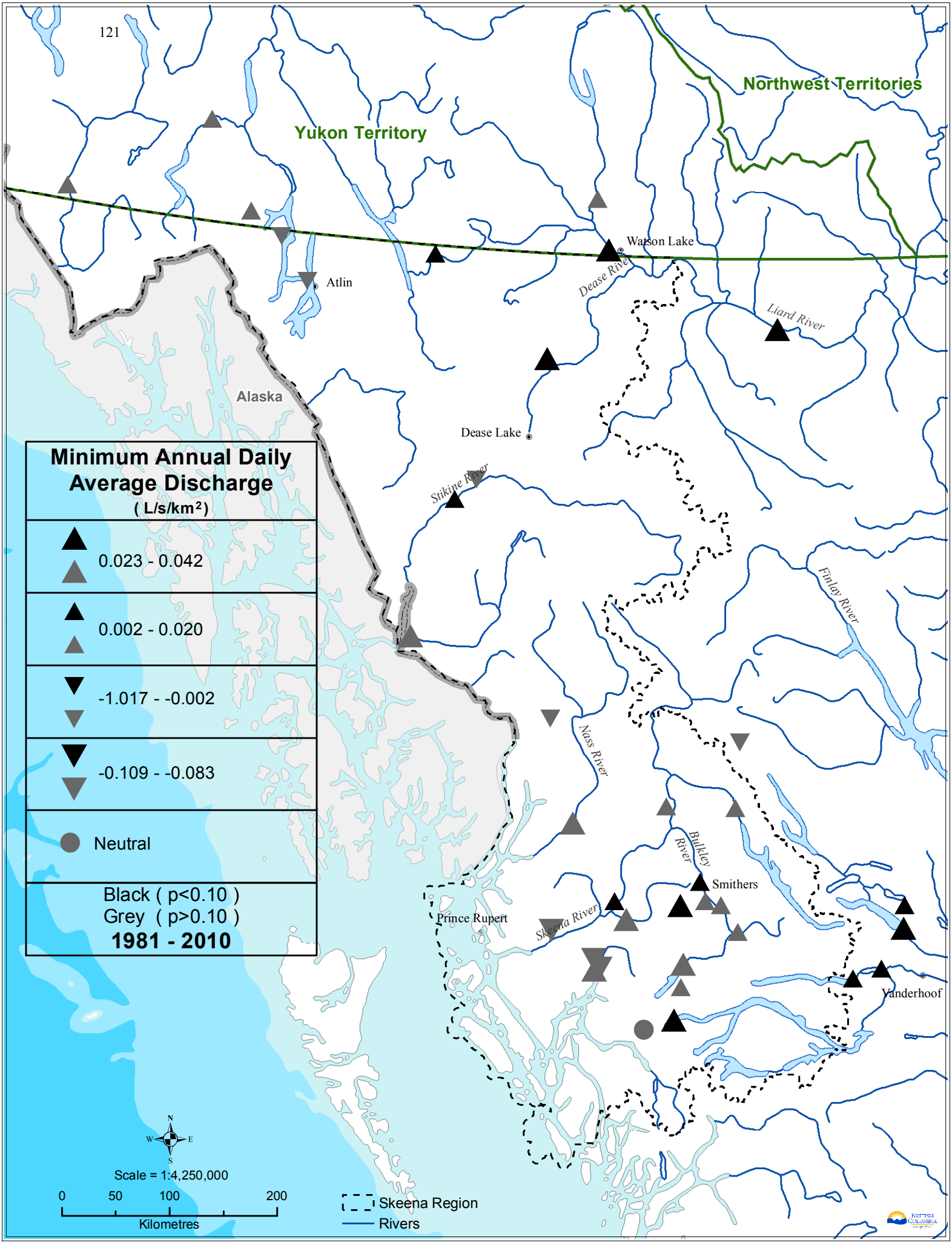

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median August Discharge
(L/s/km²)
0.785
0.005 - 0.175
-0.275 - -0.006
-0.818 - -0.358
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

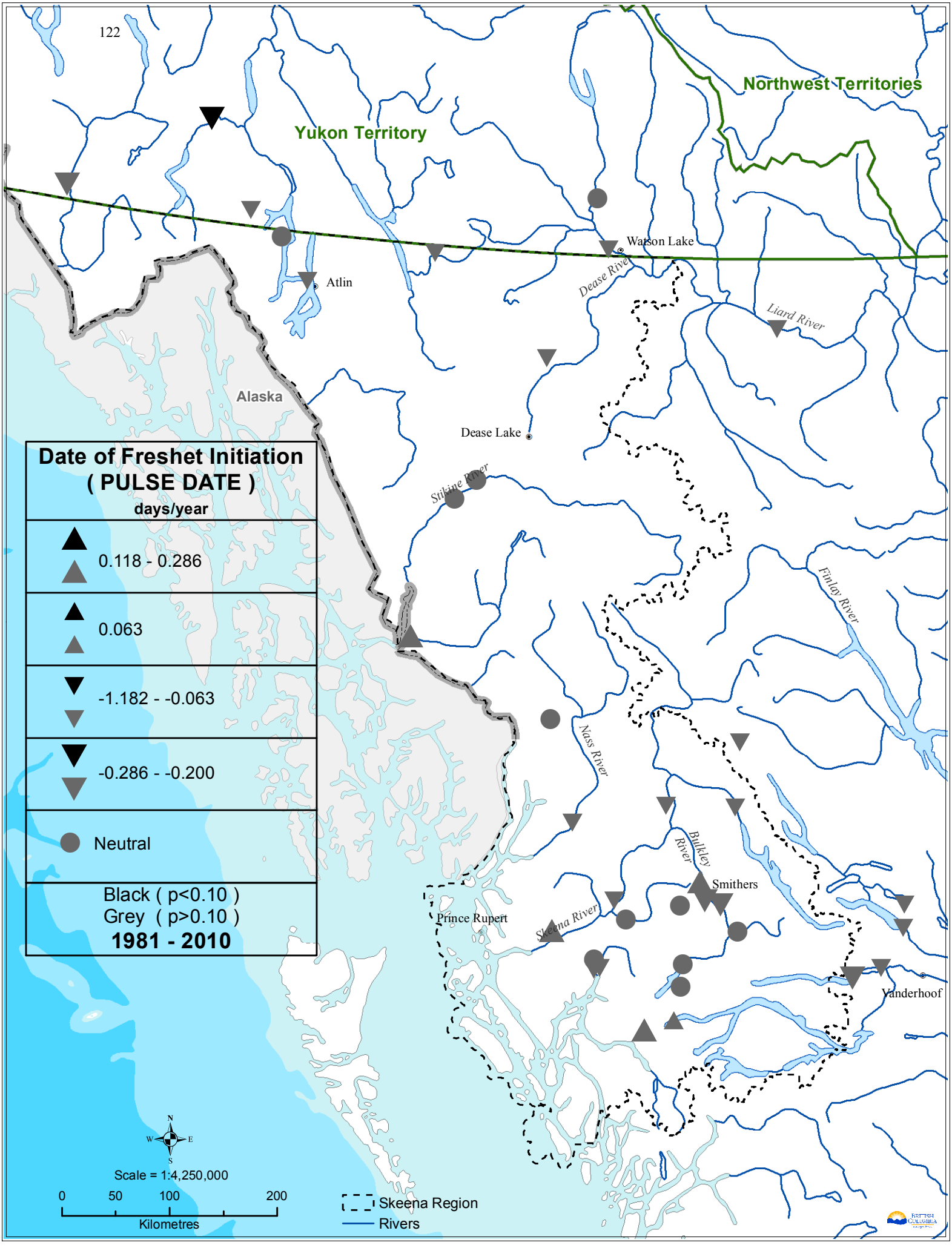

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median September Discharge
(L/s/km²)
0.762
0.001 - 0.343
-0.039 - -0.003
-0.229 - -0.063
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

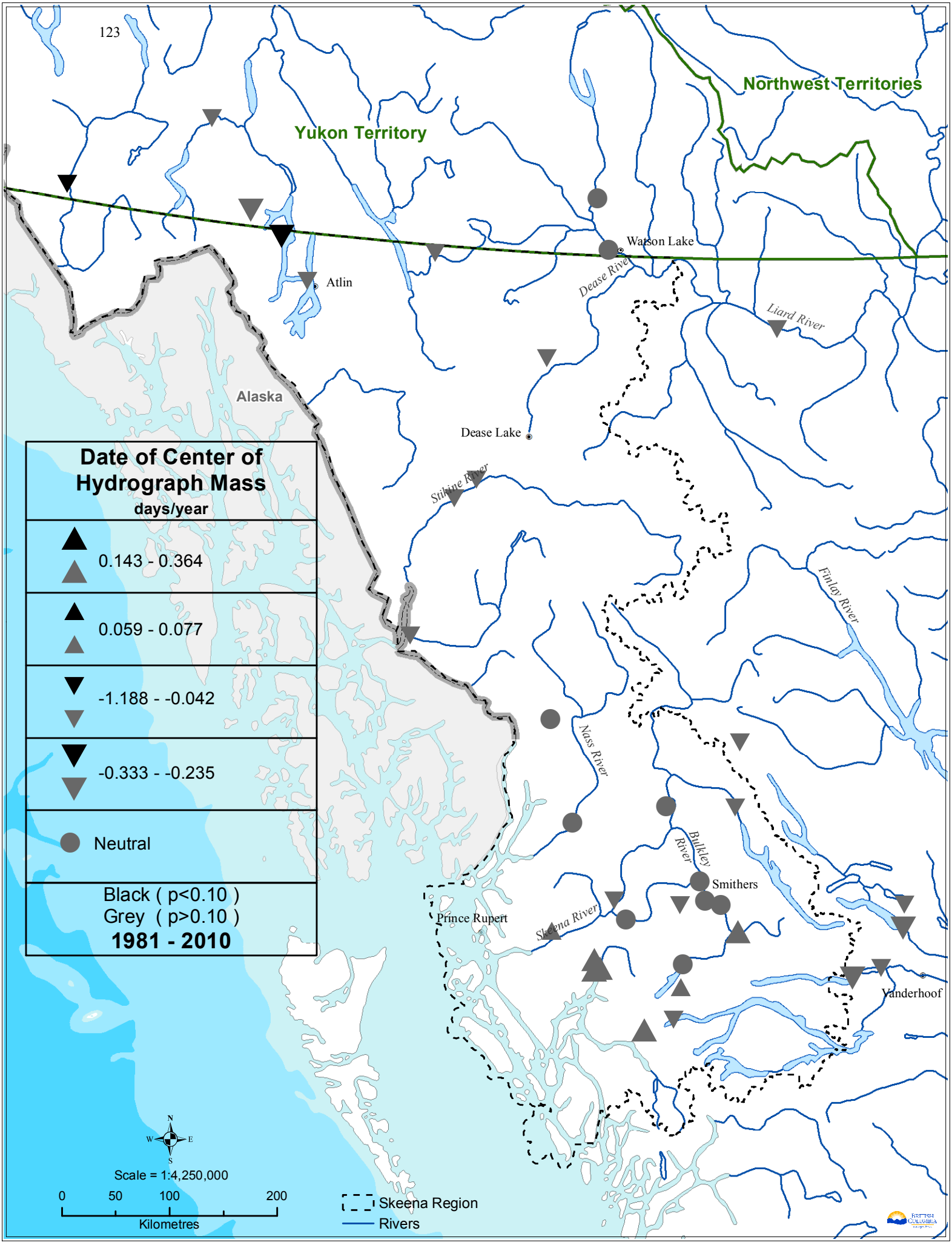

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median October Discharge
(L/s/km²)
0.042 - 0.187
0.003 - 0.010
-0.097 - -0.002
-0.165 - -0.132
Neutral
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

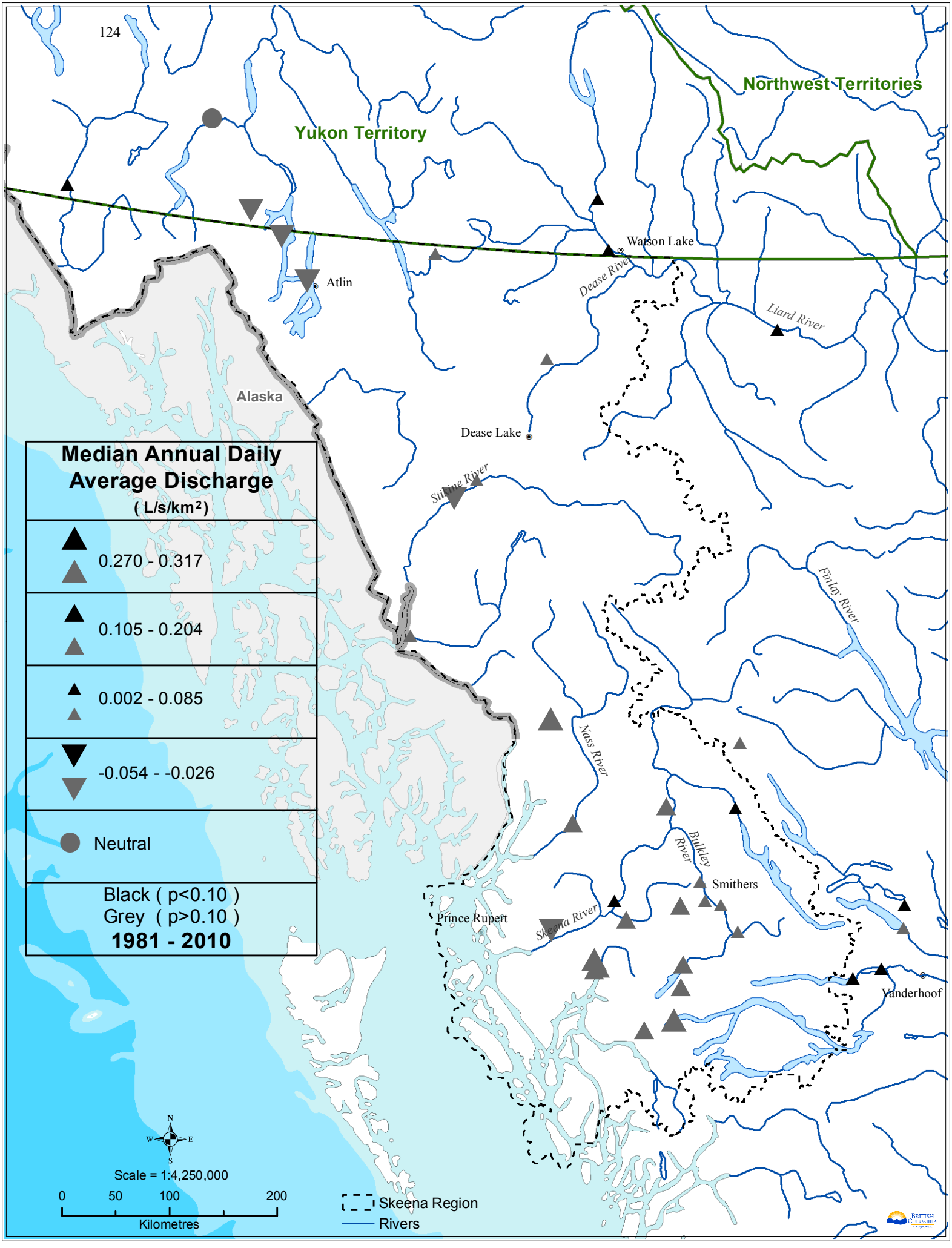

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
Median November Discharge
(L/s/km²)
0.317 - 0.461
0.125 - 0.248
0.003 - 0.104
-0.039 - -0.002
Neutral
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

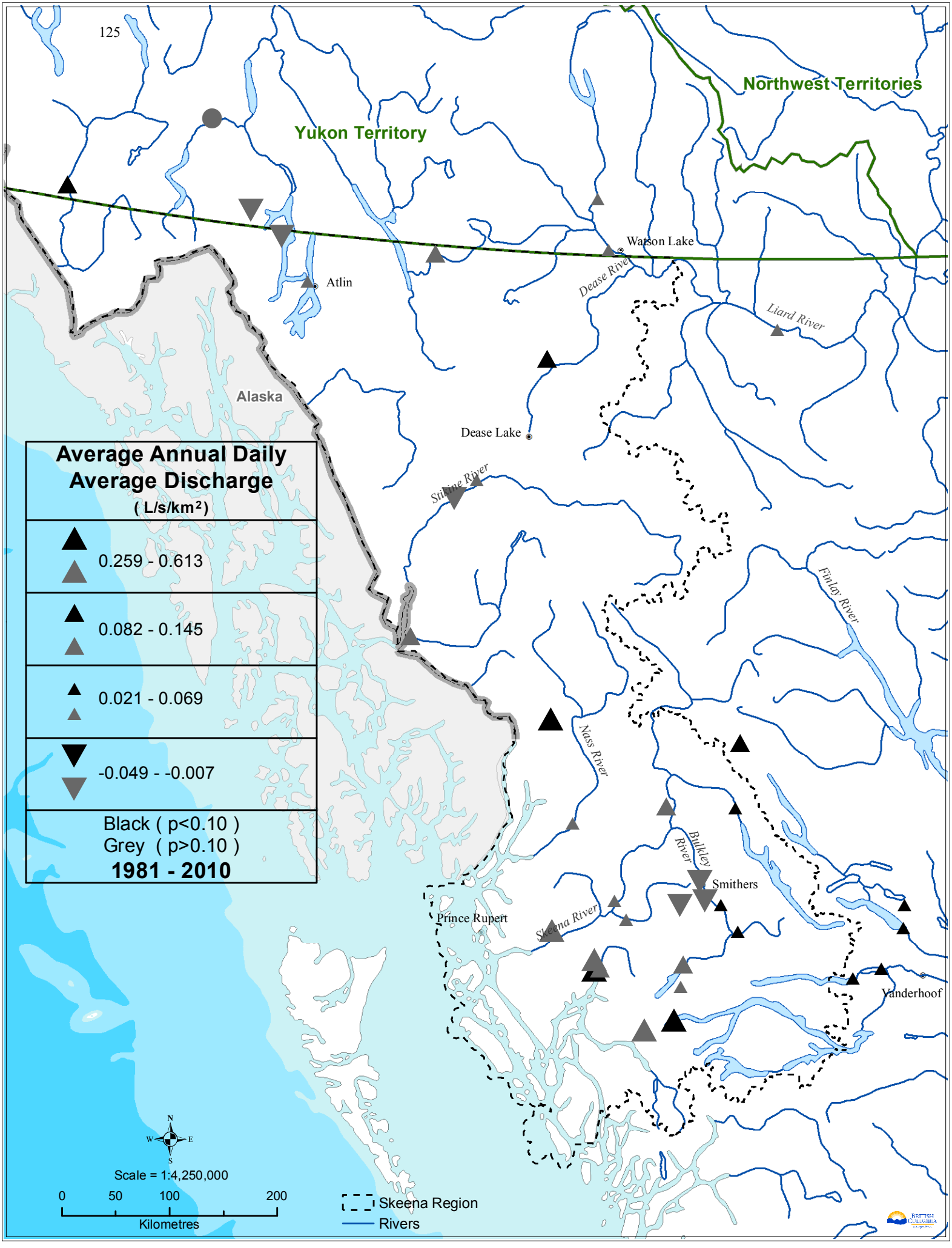

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
Median December Discharge
(L/s/km²)
0.222
0.075 - 0.123
0.001 - 0.050
-0.027 - -0.001
Neutral
Black (p<0.10)
Grey (p>0.10)
1971 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

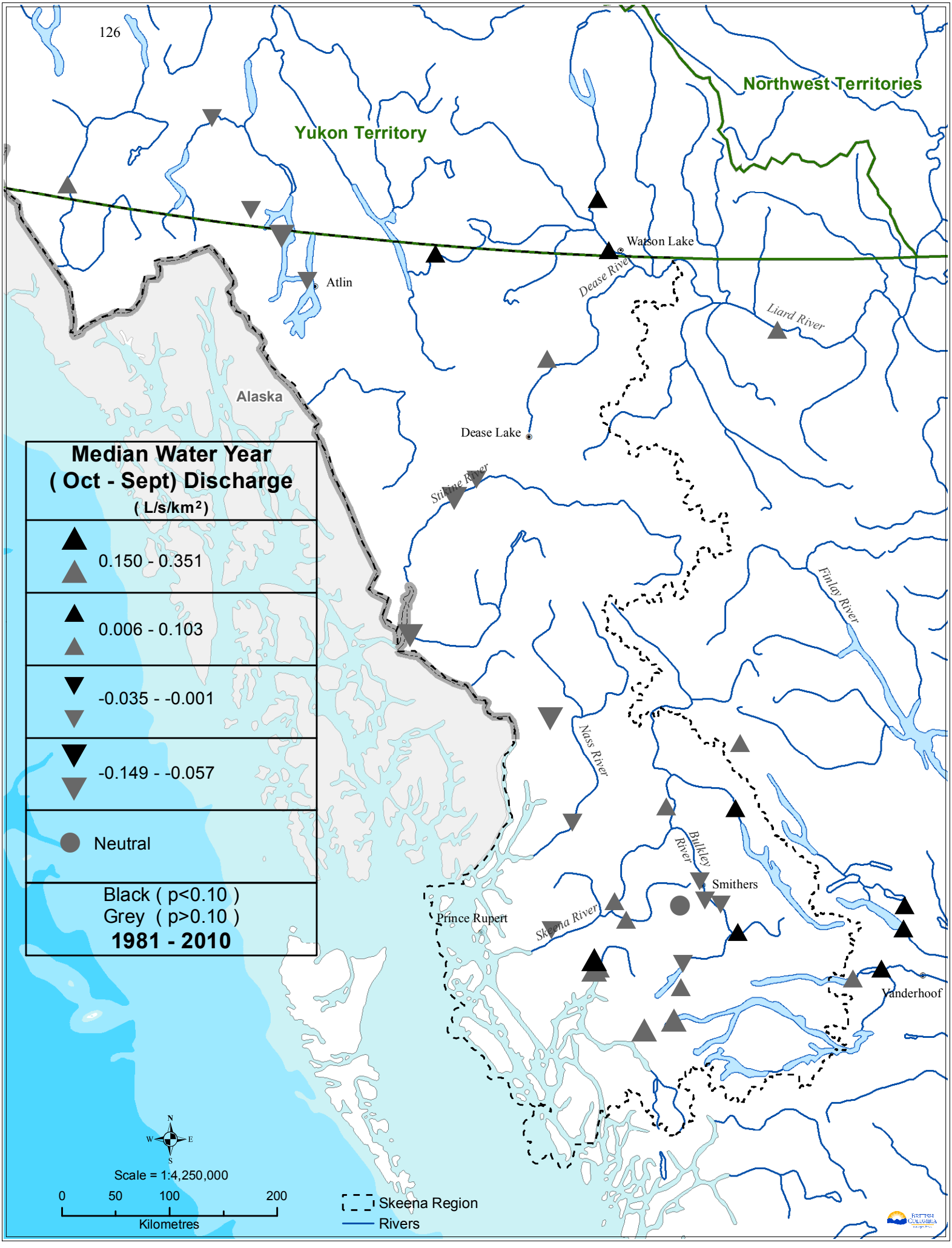

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Minimum Annual Daily Average Discharge
(L/s/km²)
0.023 - 0.042
0.002 - 0.020
-1.017 - -0.002
-0.109 - -0.083
Neutral
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

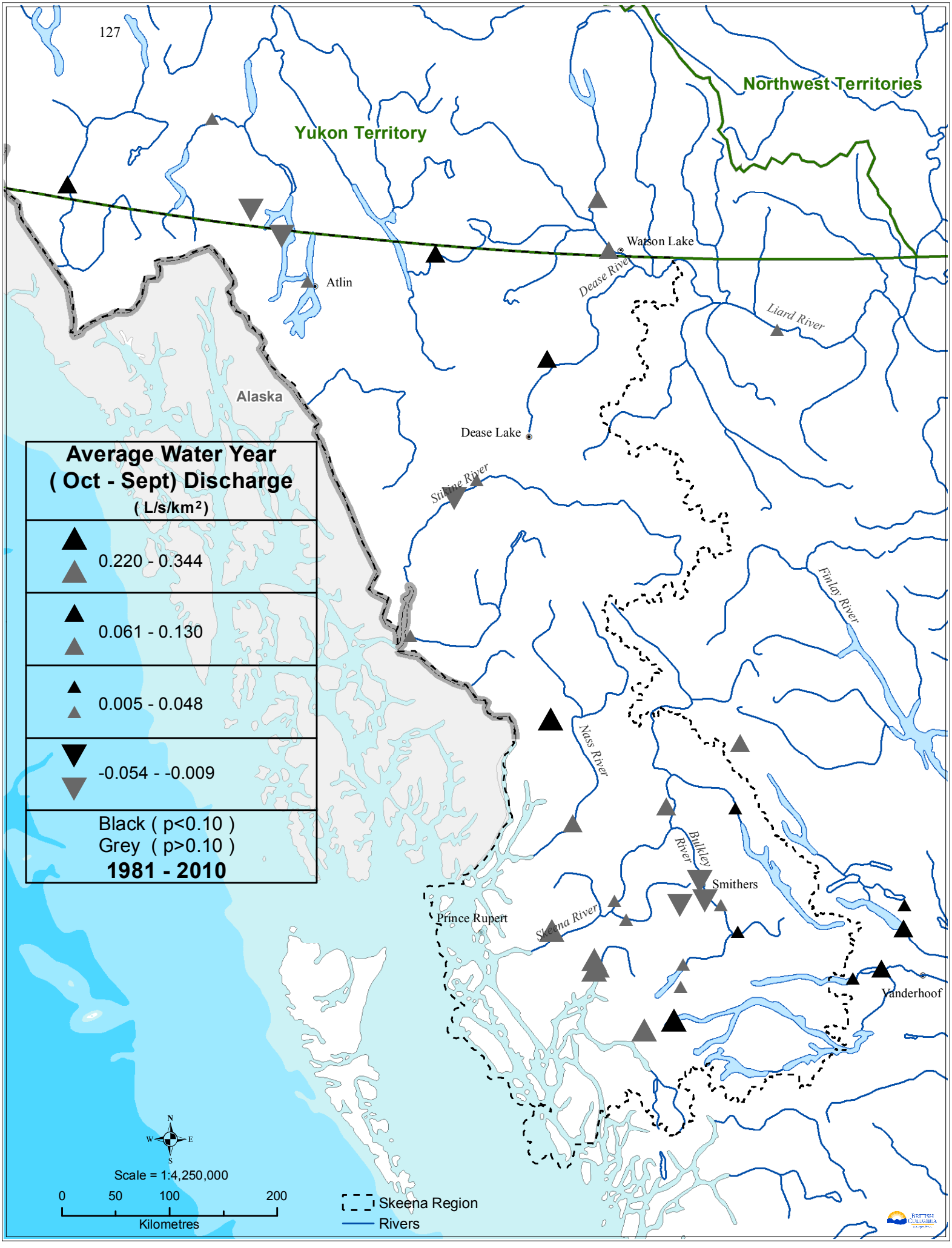

Yukon Territory
Northwest Territories
Alaska
Watson Lake
Atlin
Dease River
Liard River
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Date of Freshet Initiation
(PULSE DATE)
days/year
0.118 - 0.286
0.063
-1.182 - -0.063
-0.286 - -0.200
Neutral
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

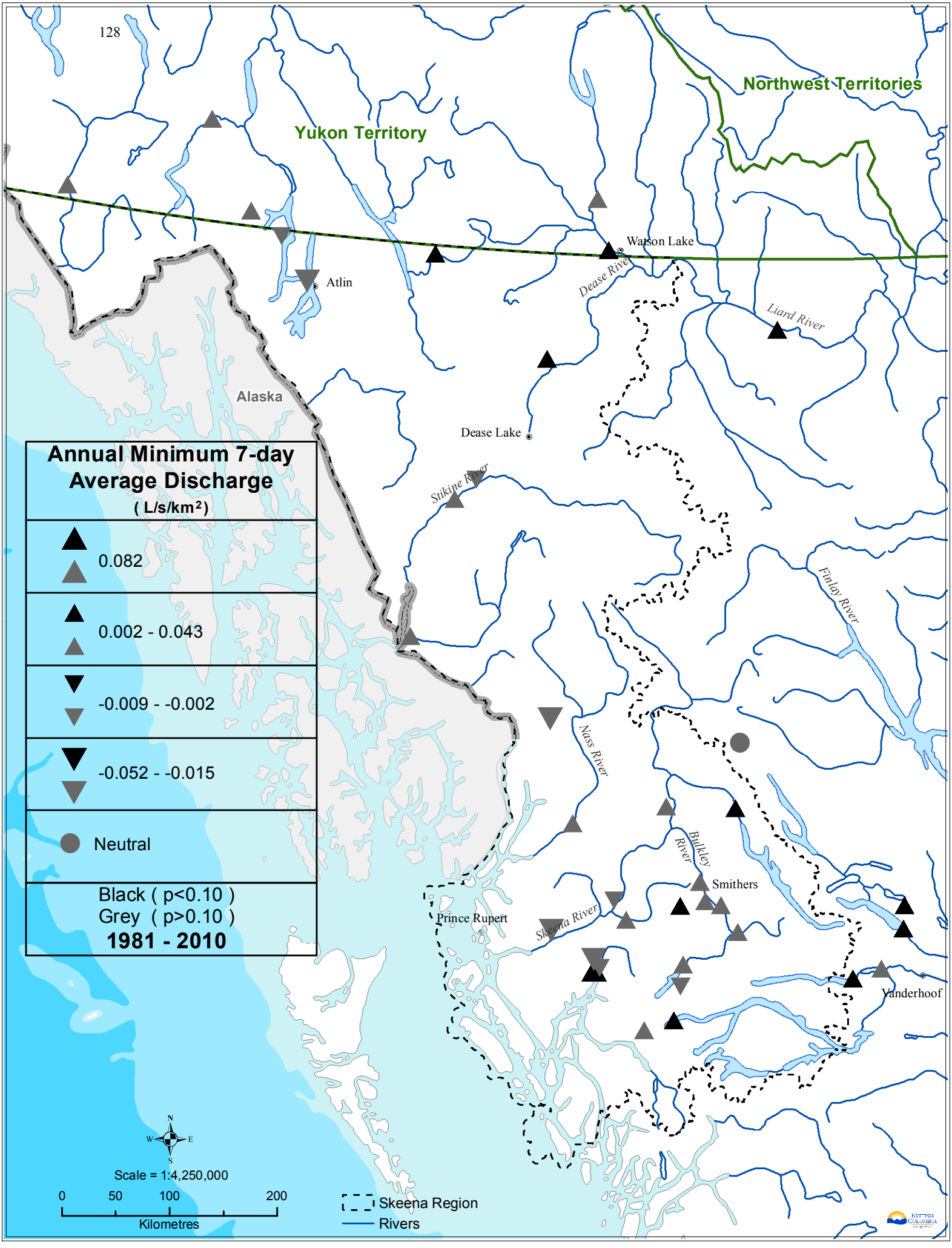

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Date of Center of Hydrograph Mass
days/year
0.143 - 0.364
0.059 - 0.077
-1.188 - -0.042
-0.333 - -0.235
Neutral
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

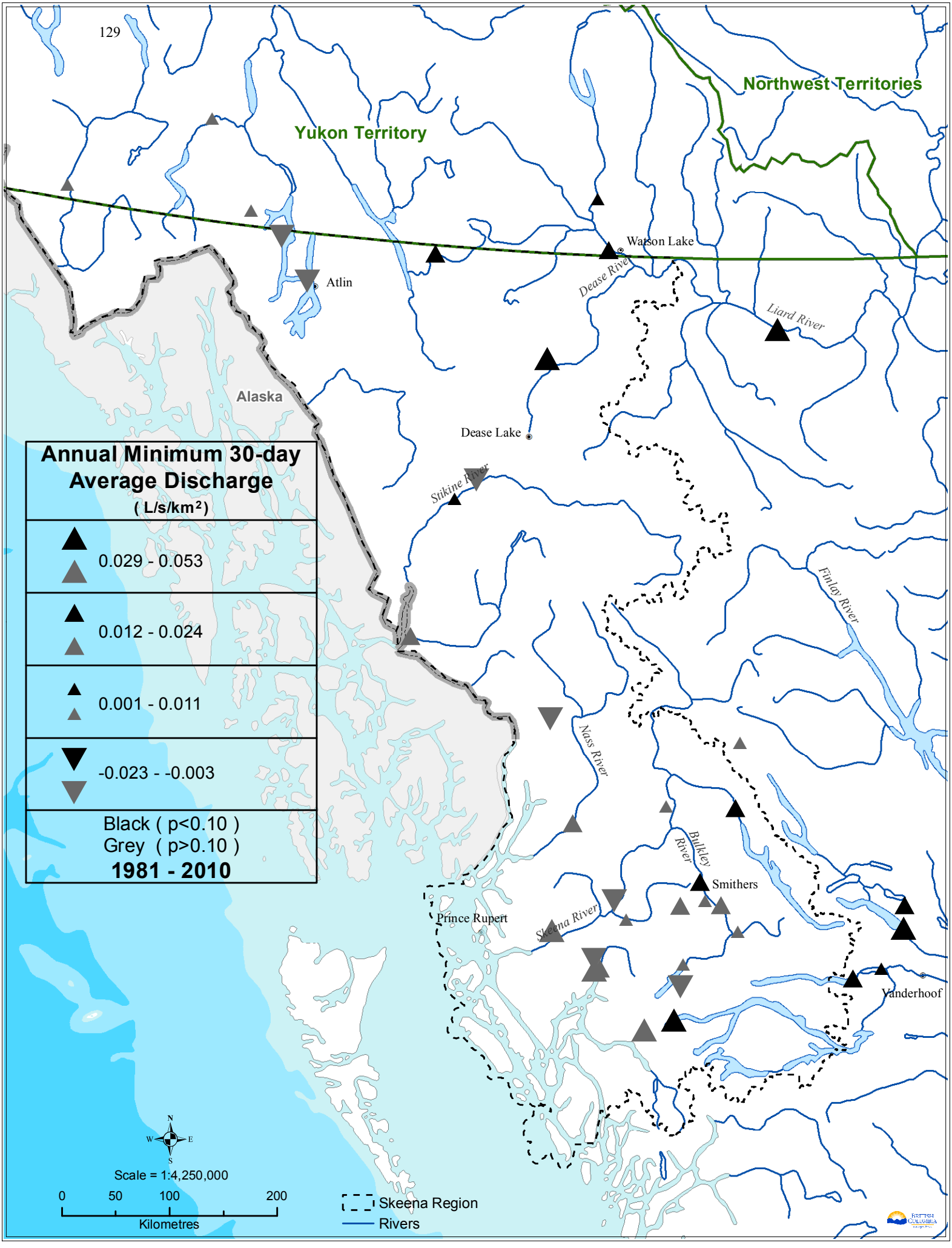

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median Annual Daily Average Discharge
(L/s/km²)
0.270 - 0.317
0.105 - 0.204
0.002 - 0.085
-0.054 - -0.026
Neutral
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

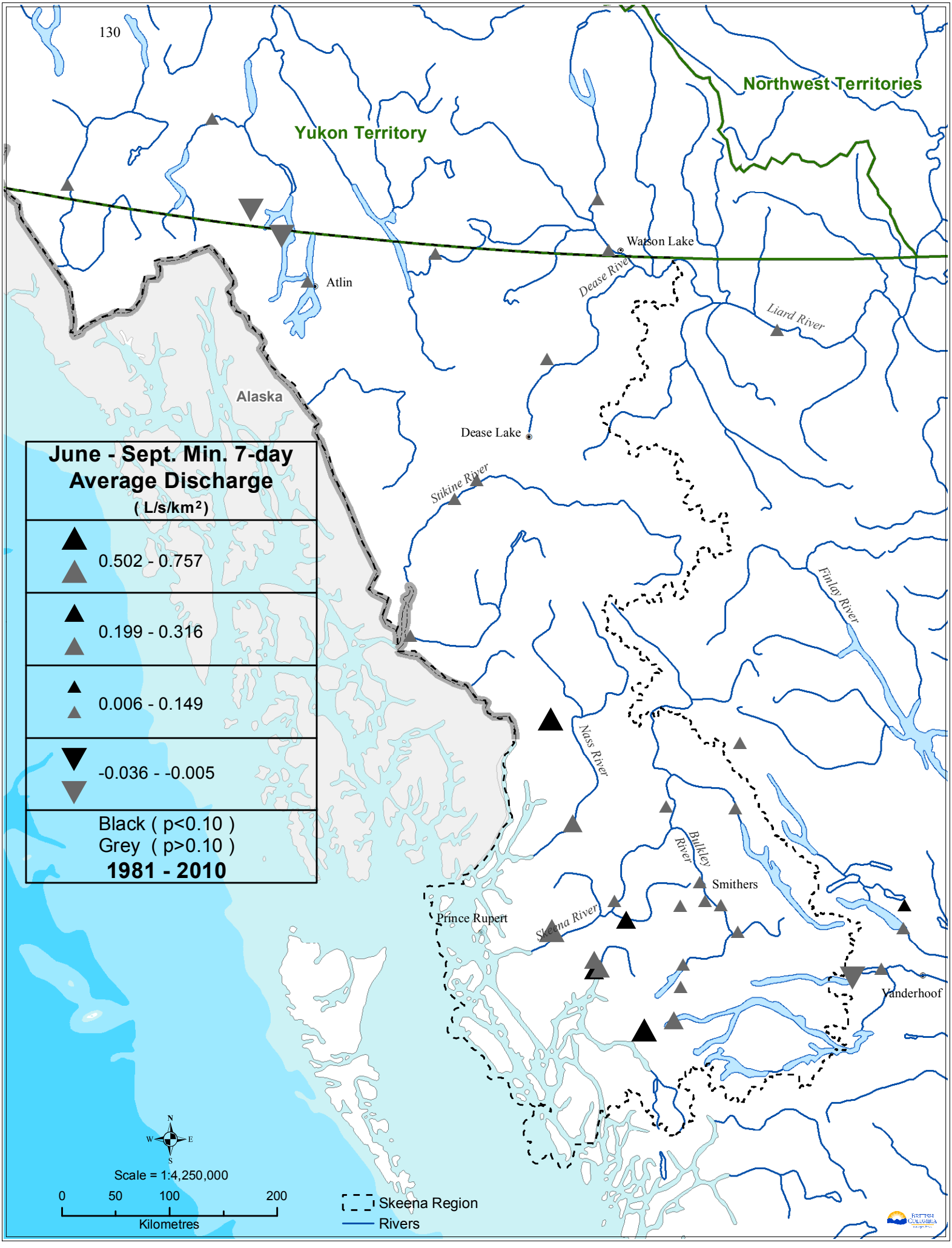

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Average Annual Daily Average Discharge
(L/s/km²)
0.259 - 0.613
0.082 - 0.145
0.021 - 0.069
-0.049 - -0.007
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

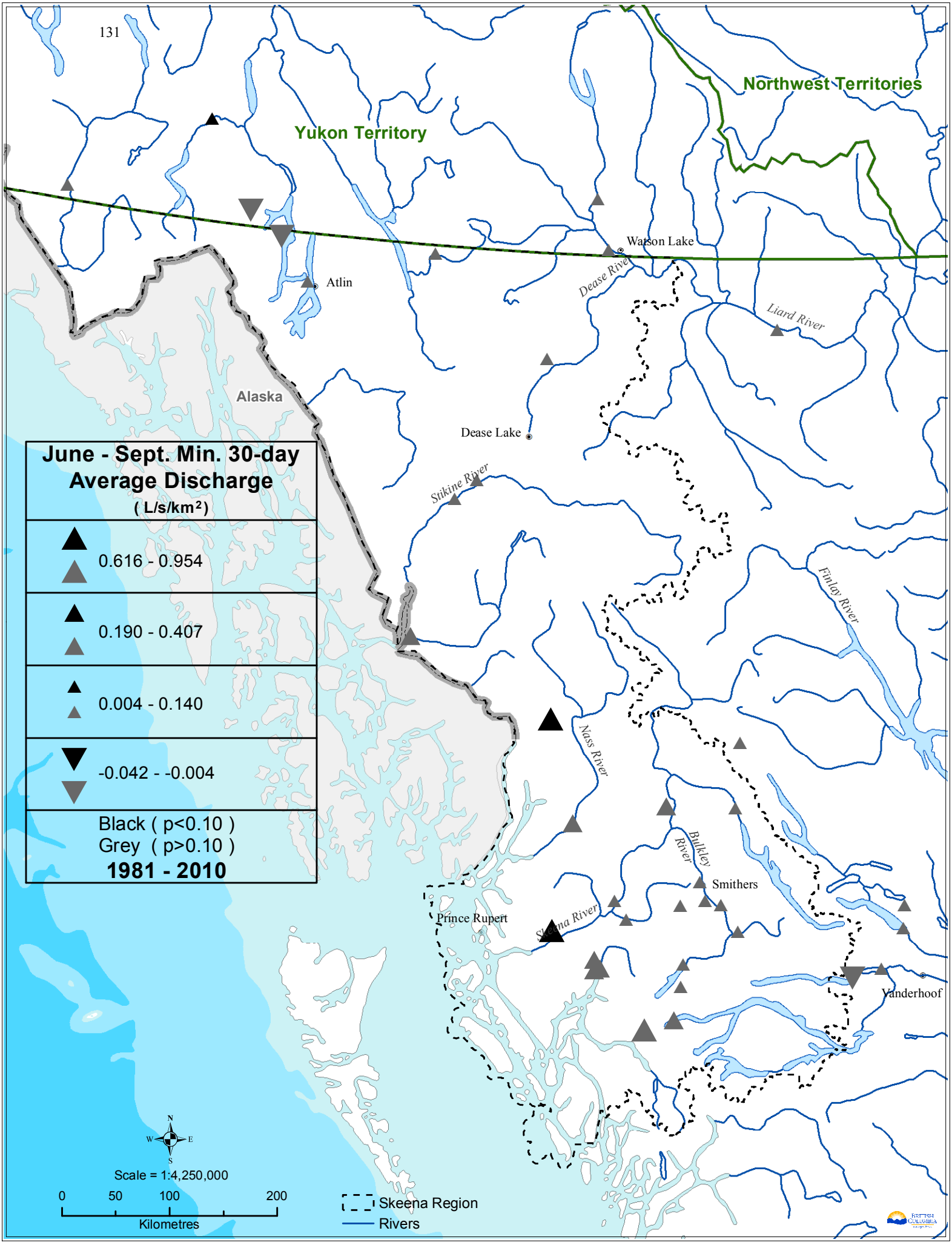

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median Water Year
(Oct - Sept) Discharge
(L/s/km²)
0.150 - 0.351
0.006 - 0.103
-0.035 - -0.001
-0.149 - -0.057
Neutral
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

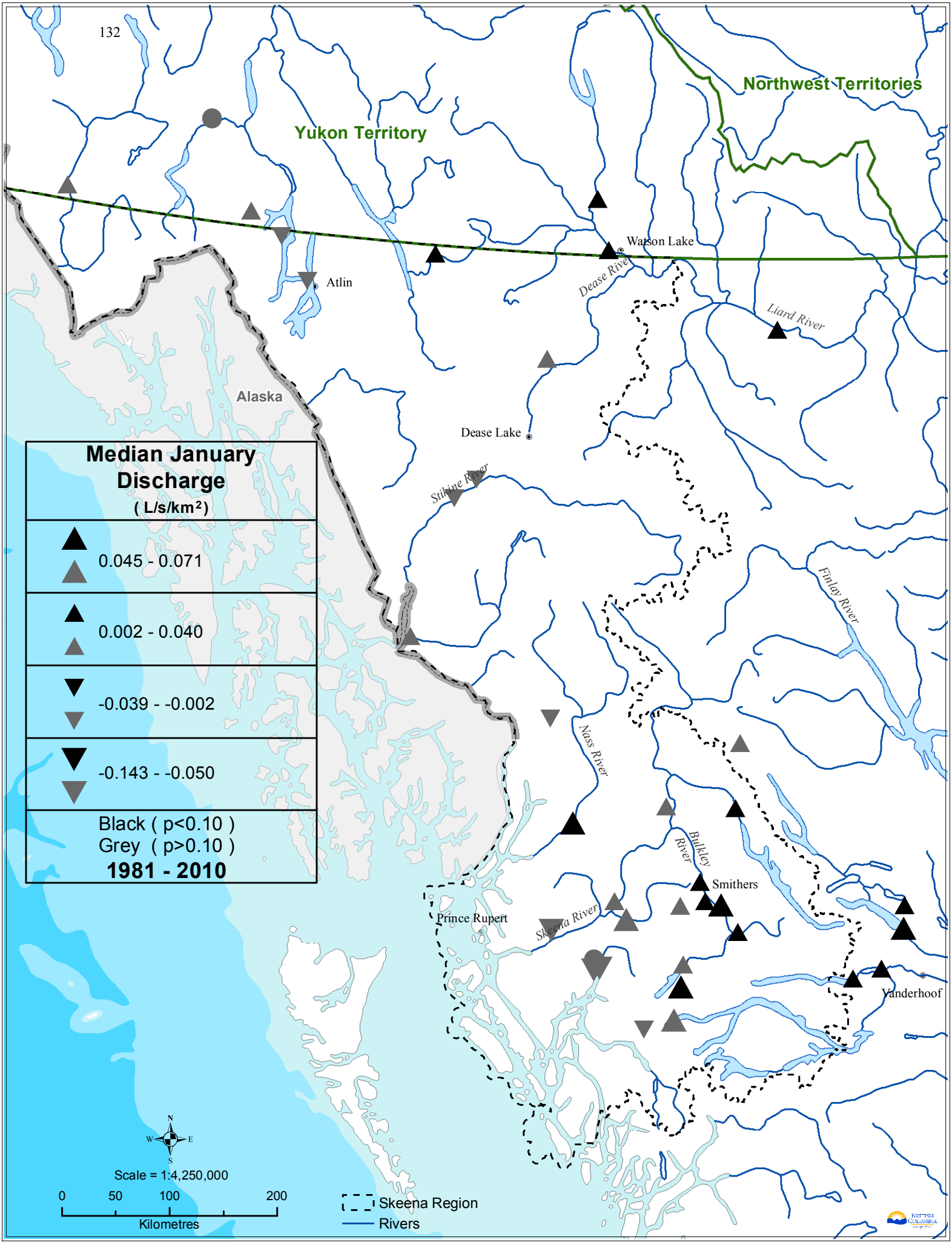

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Average Water Year
(Oct - Sept) Discharge
(L/s/km²)
0.220 - 0.344
0.061 - 0.130
0.005 - 0.048
-0.054 - -0.009
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

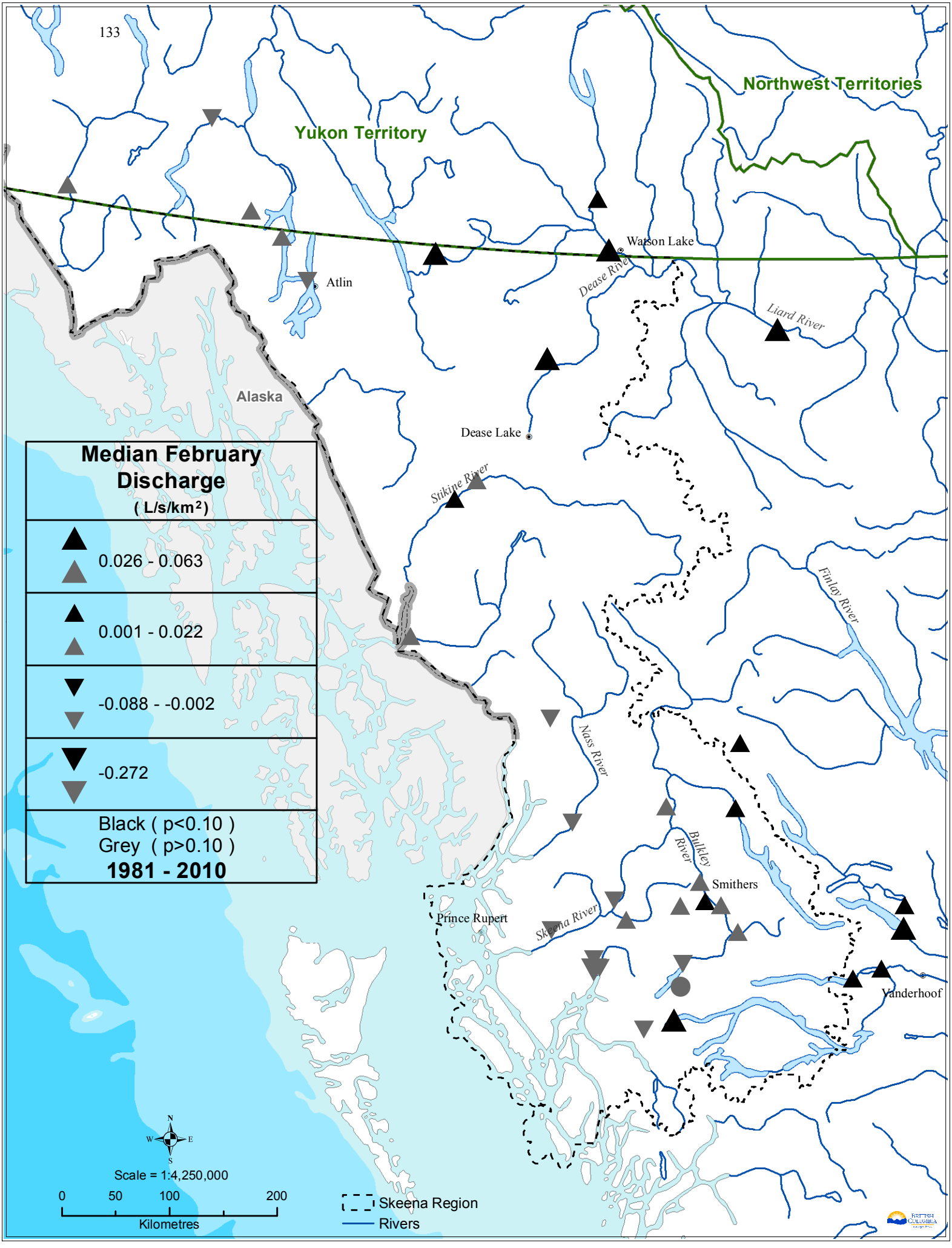

Yukon Territory
Northwest Territories
Alaska
Watson Lake
Atlin
Dease River
Liard River
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Annual Minimum 7-day Average Discharge
(L/s/km²)
0.082
0.002 - 0.043
-0.009 - -0.002
-0.052 - -0.015
Neutral
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

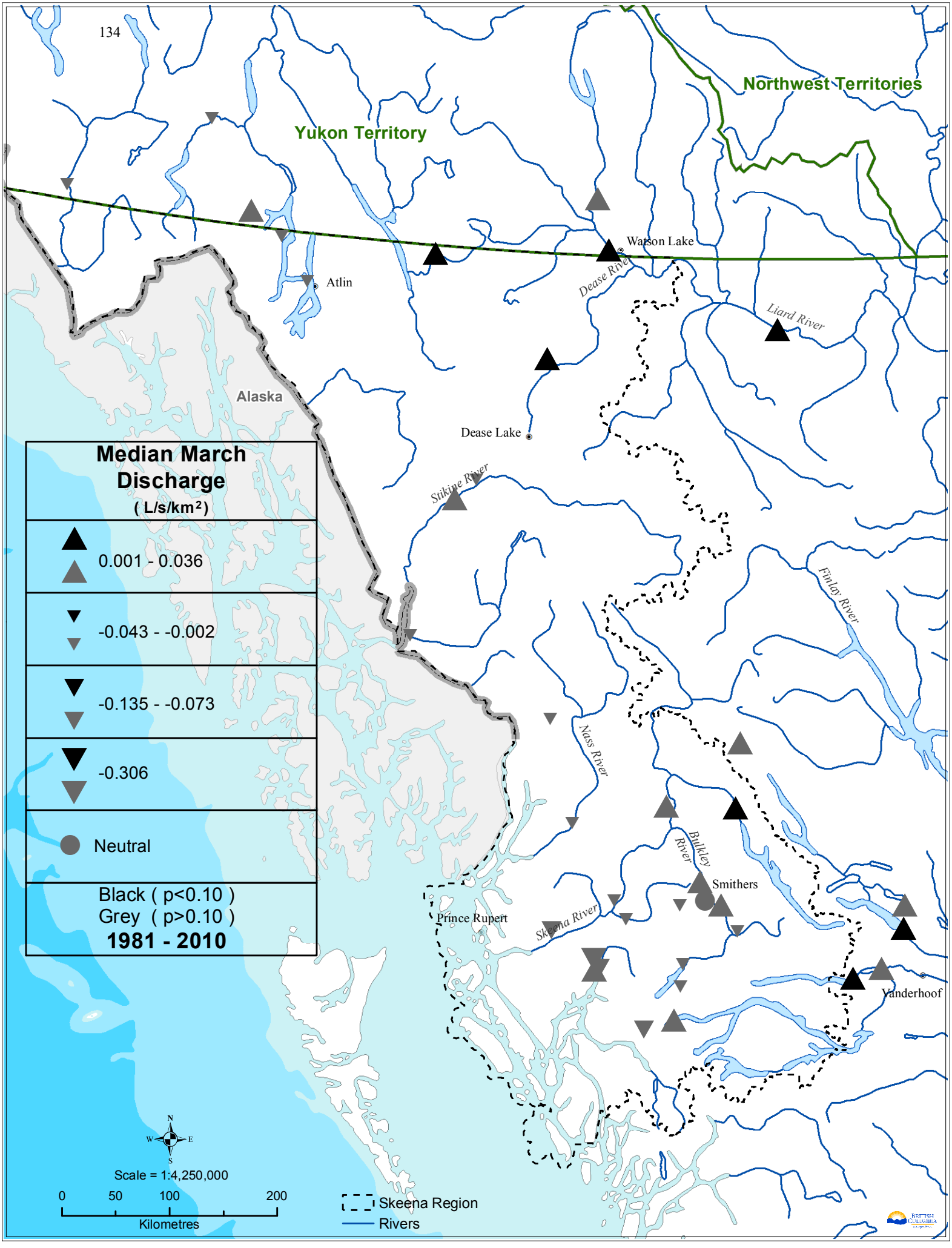

Northwest Territories
Yukon Territory
Watson Lake
Dease River
Atlin
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Annual Minimum 30-day Average Discharge
(L/s/km²)
0.029 - 0.053
0.012 - 0.024
0.001 - 0.011
-0.023 - -0.003
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

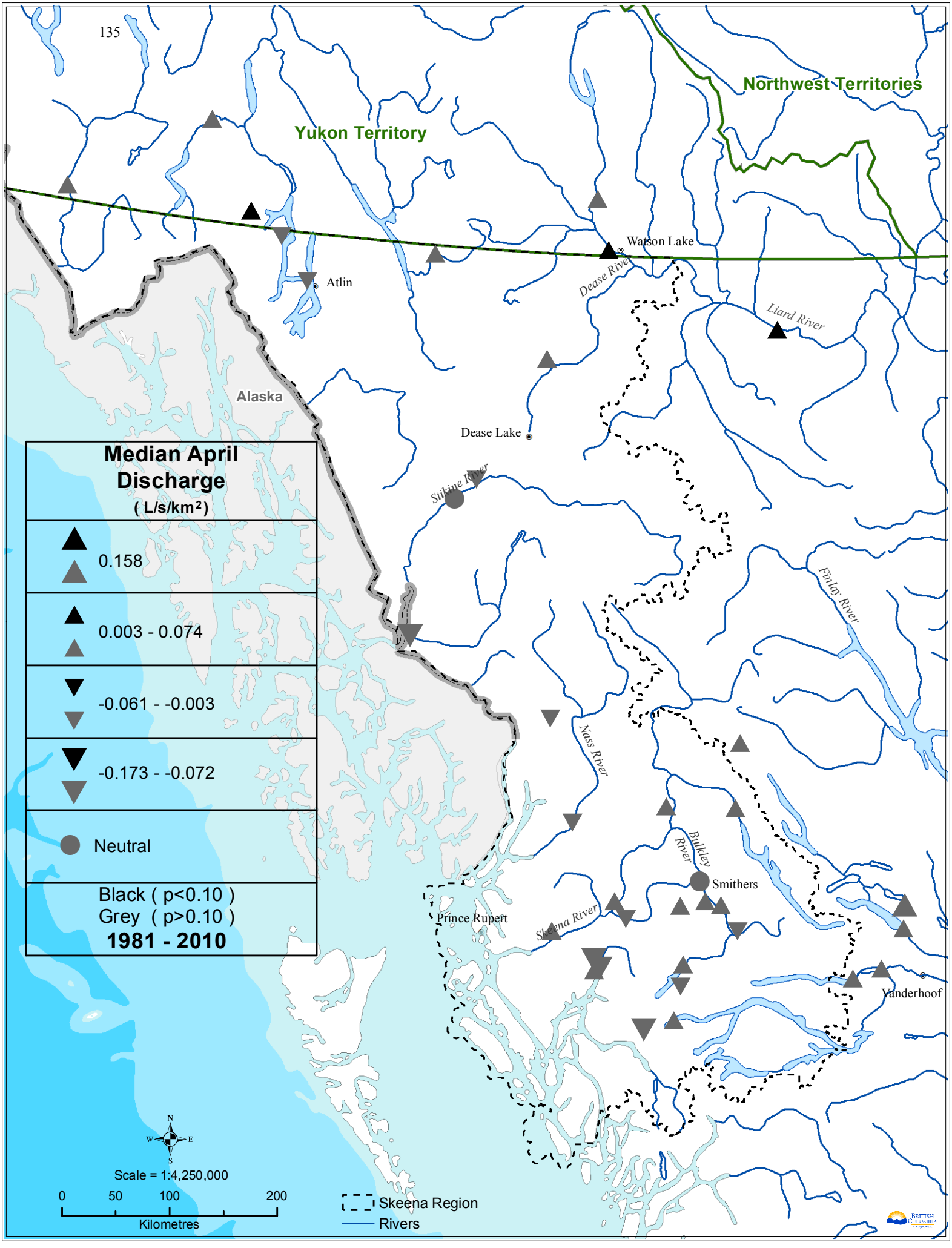

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
June - Sept. Min. 7-day Average Discharge
(L/s/km²)
0.502 - 0.757
0.199 - 0.316
0.006 - 0.149
-0.036 - -0.005
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

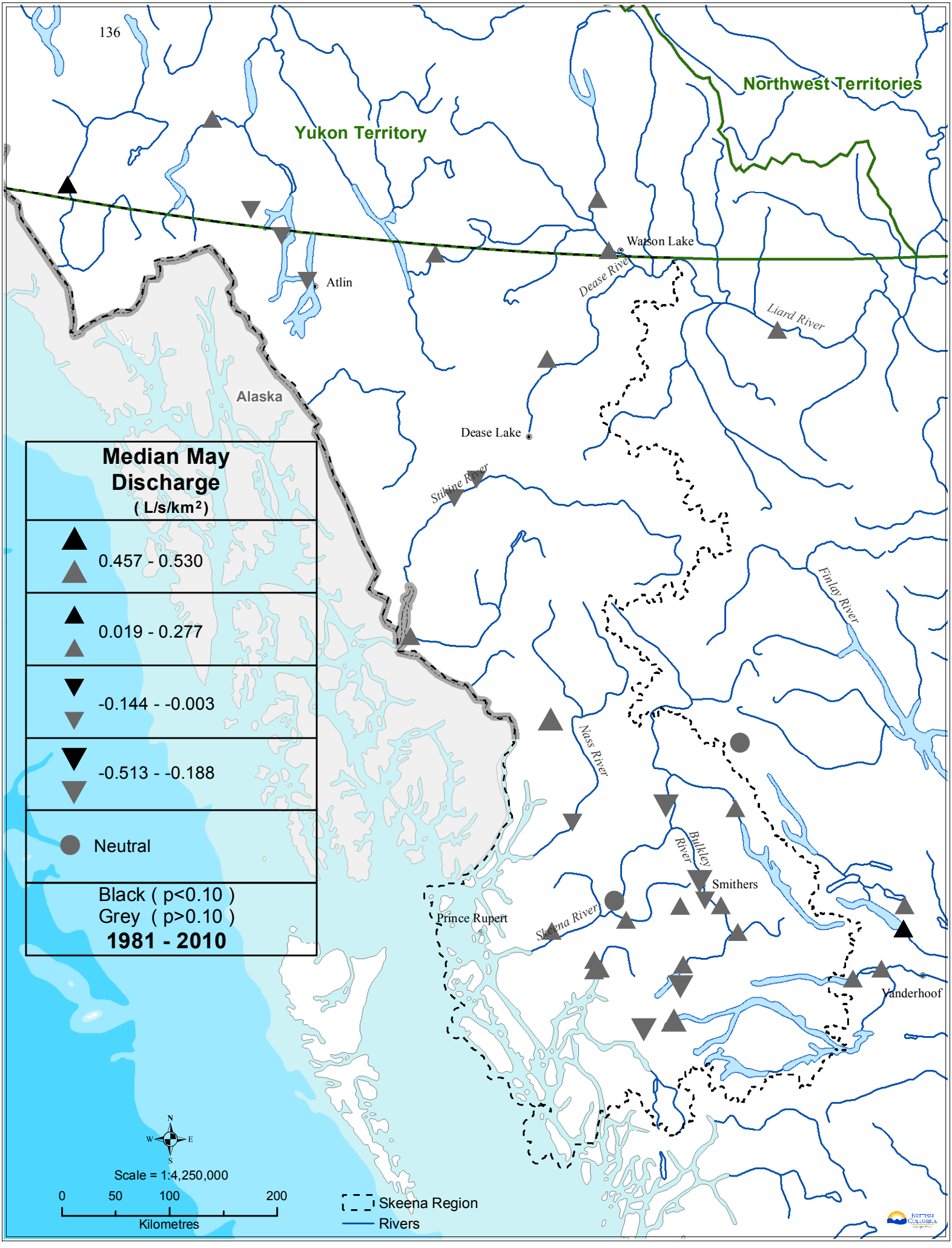

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
June - Sept. Min. 30-day Average Discharge
(L/s/km²)
0.616 - 0.954
0.190 - 0.407
0.004 - 0.140
-0.042 - -0.004
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

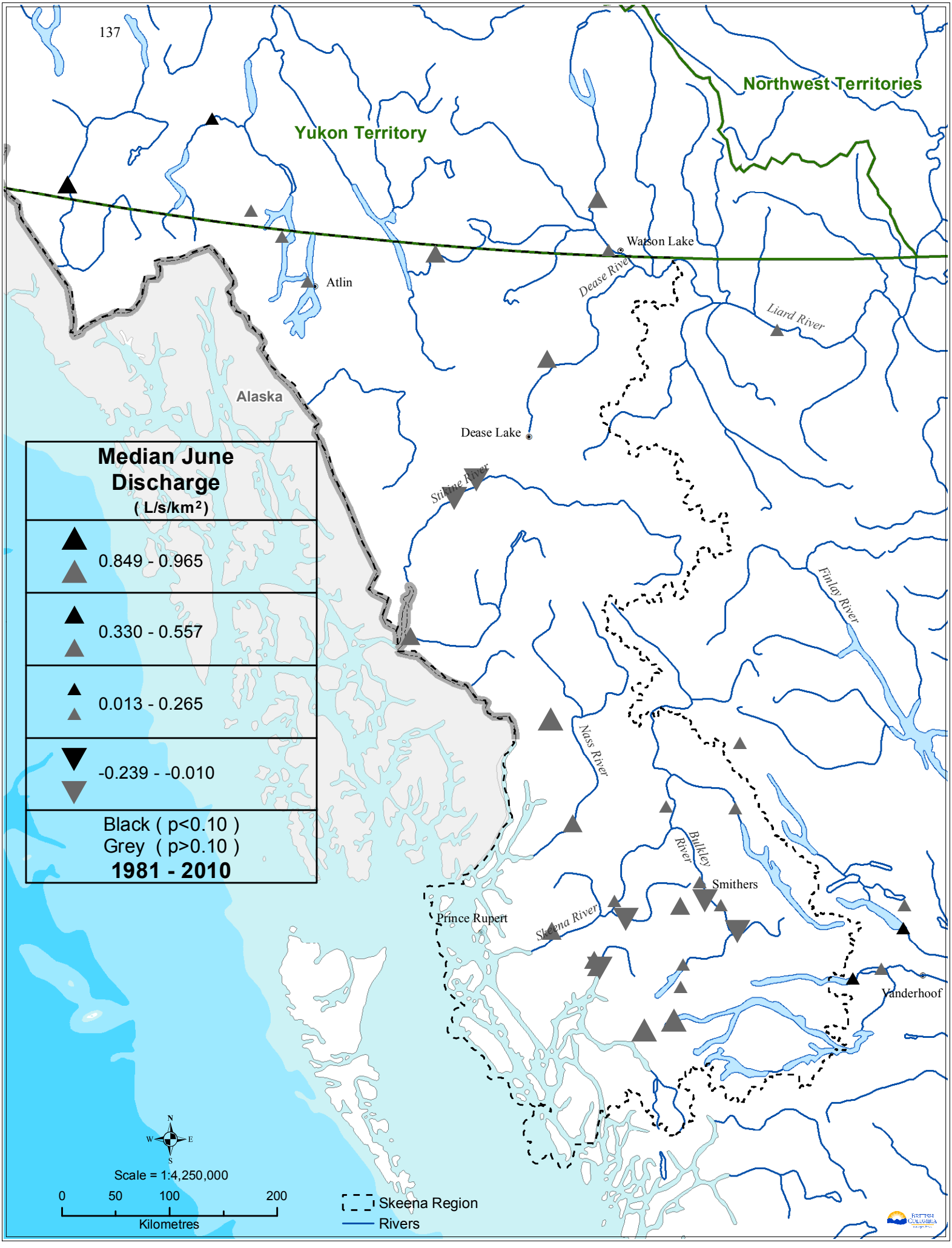

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median January Discharge
(L/s/km²)
0.045 - 0.071
0.002 - 0.040
-0.039 - -0.002
-0.143 - -0.050
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

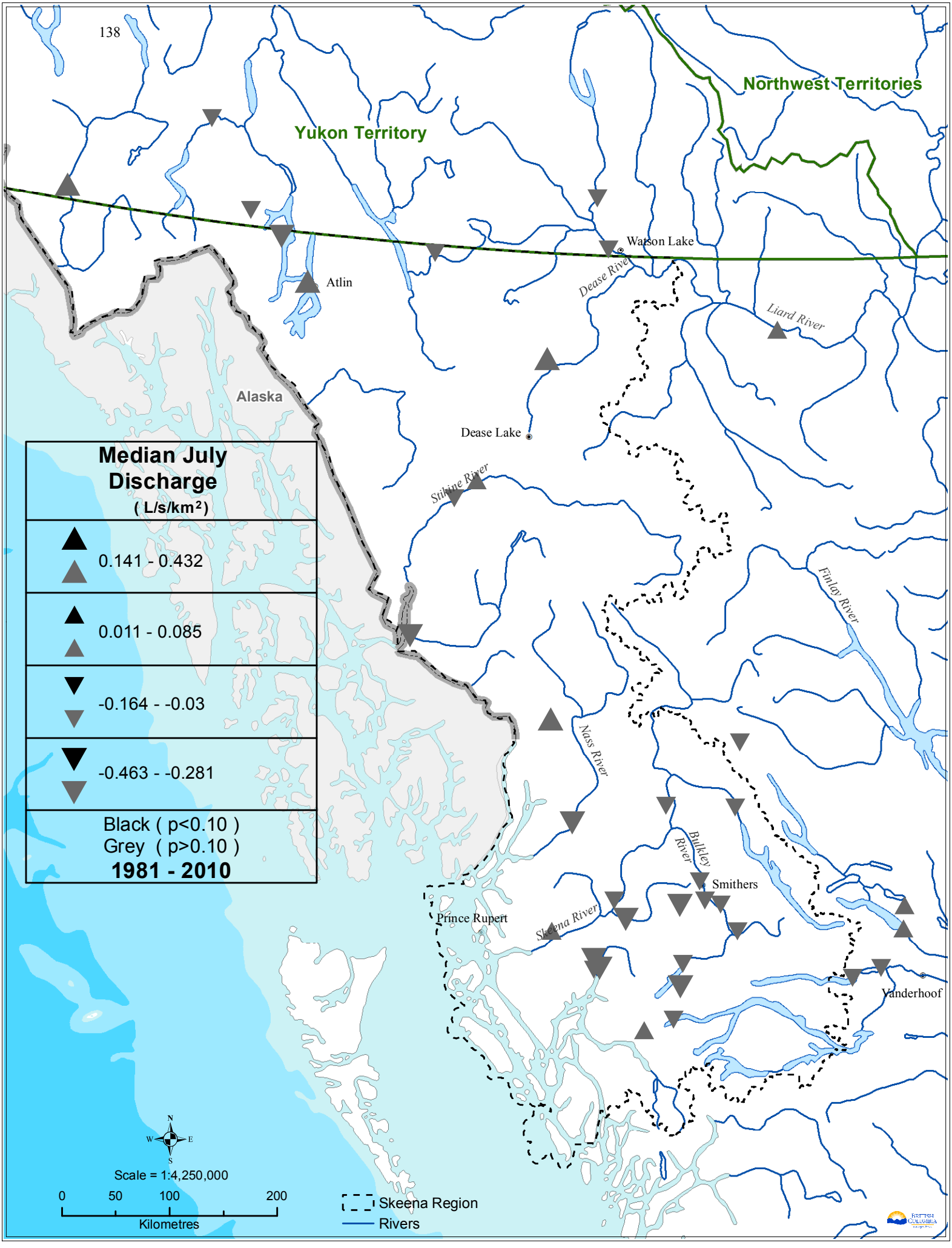

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median February Discharge
(L/s/km²)
0.026 - 0.063
0.001 - 0.022
-0.088 - -0.002
-0.272
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

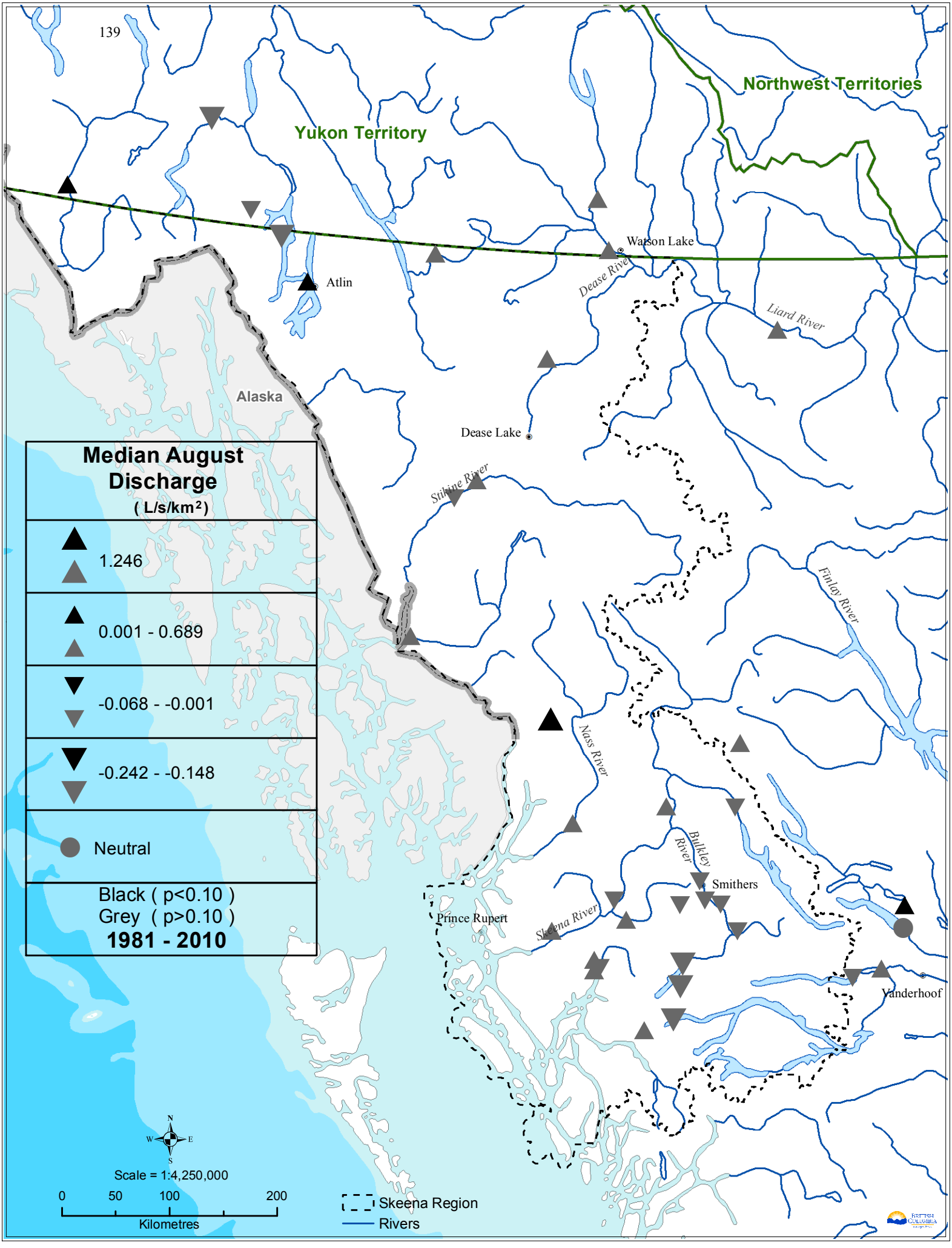

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
Median March Discharge
(L/s/km²)
0.001 - 0.036
-0.043 - -0.002
-0.135 - -0.073
-0.306
Neutral
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

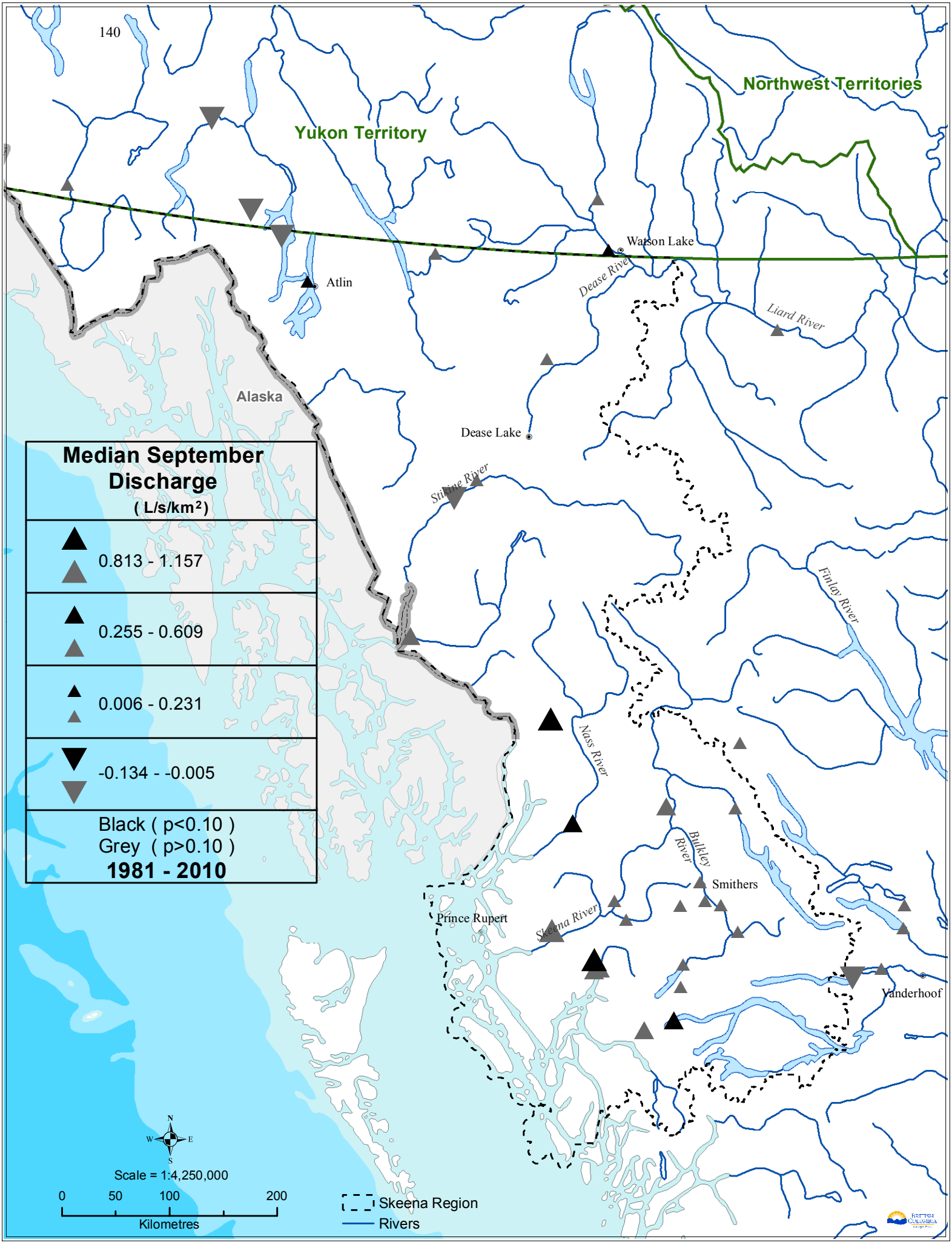

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median April Discharge
(L/s/km²)
0.158
0.003 - 0.074
-0.061 - -0.003
-0.173 - -0.072
Neutral
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

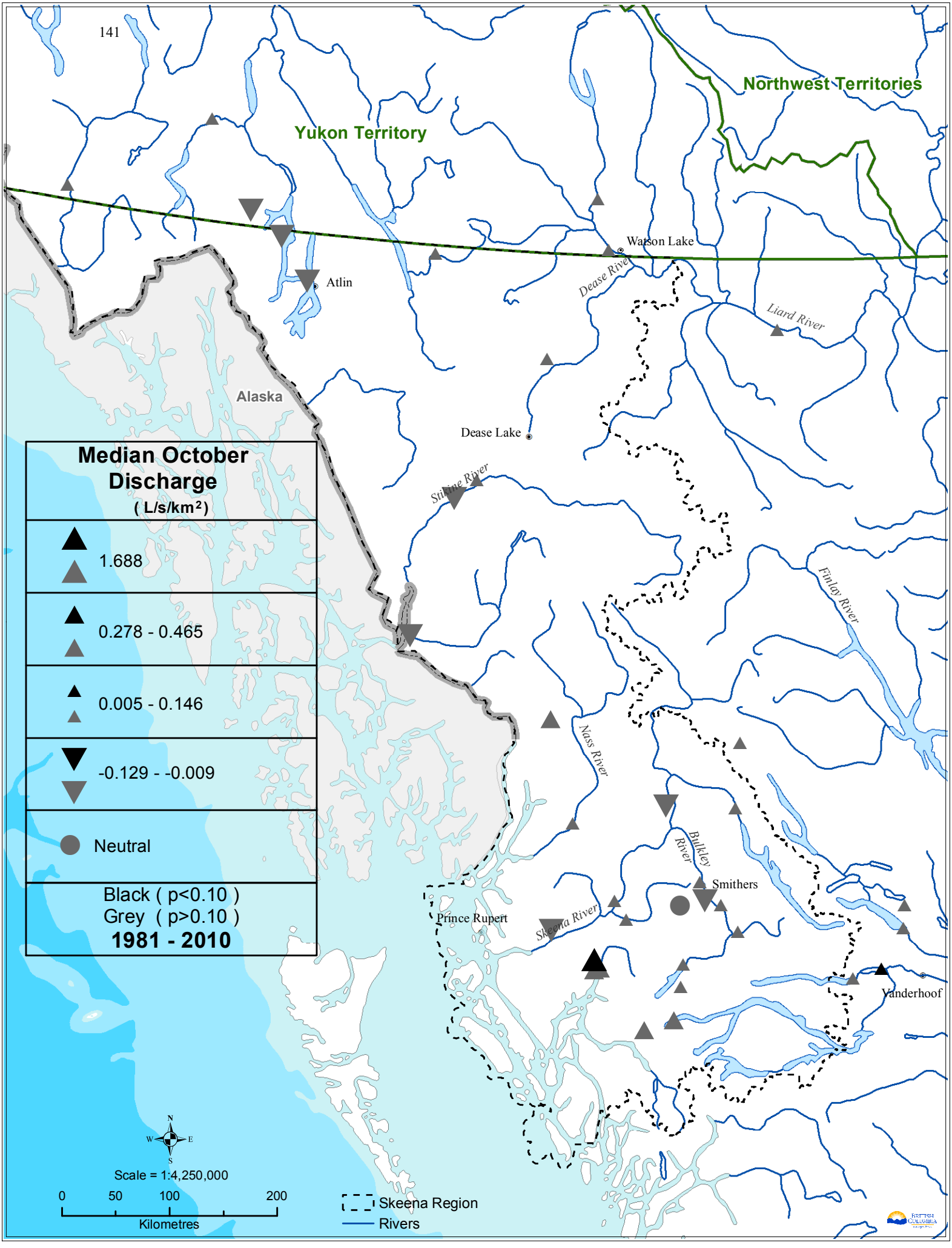

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median May Discharge
(L/s/km²)
0.457 - 0.530
0.019 - 0.277
-0.144 - -0.003
-0.513 - -0.188
Neutral
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

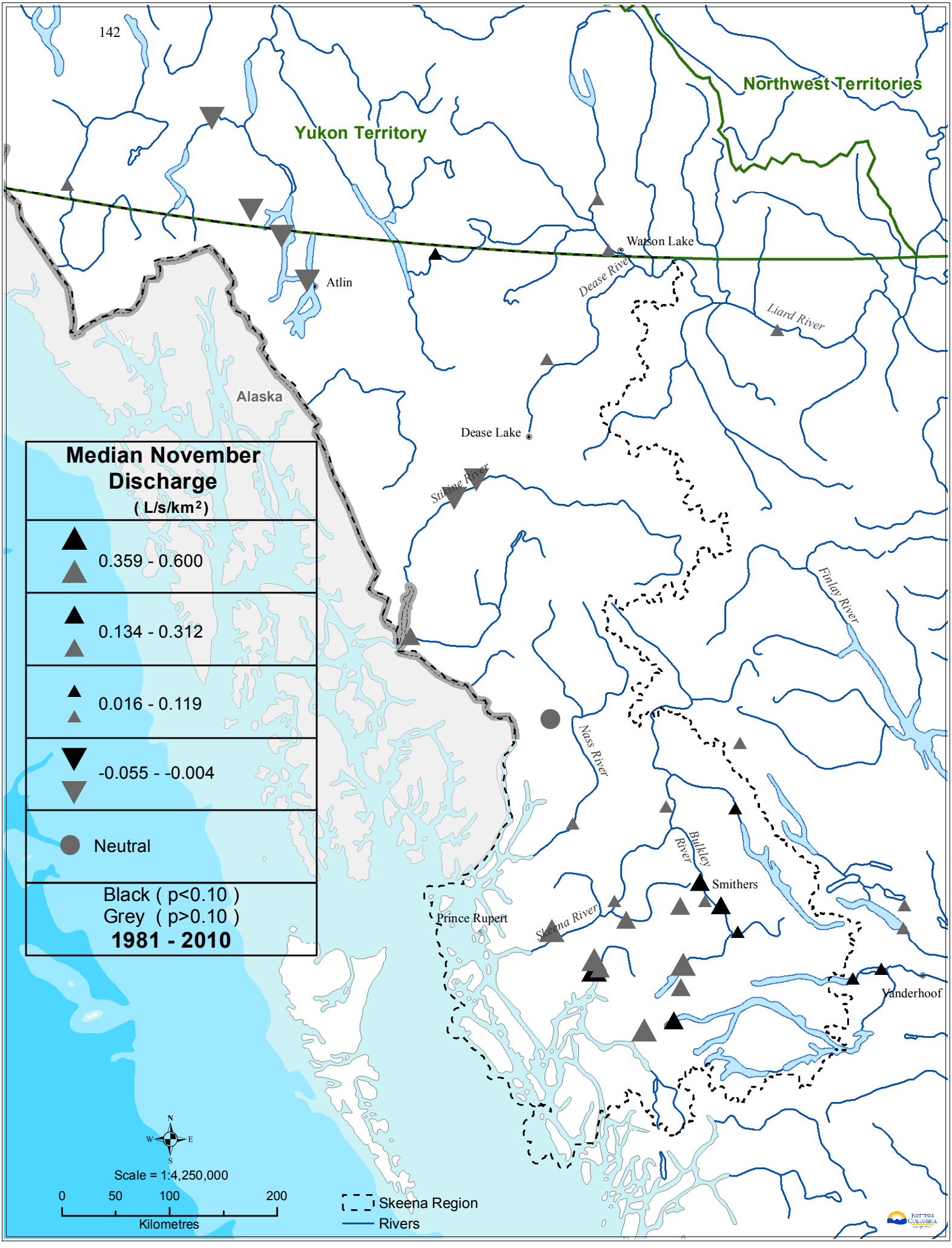

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median June Discharge
(L/s/km²)
0.849 - 0.965
0.330 - 0.557
0.013 - 0.265
-0.239 - -0.010
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

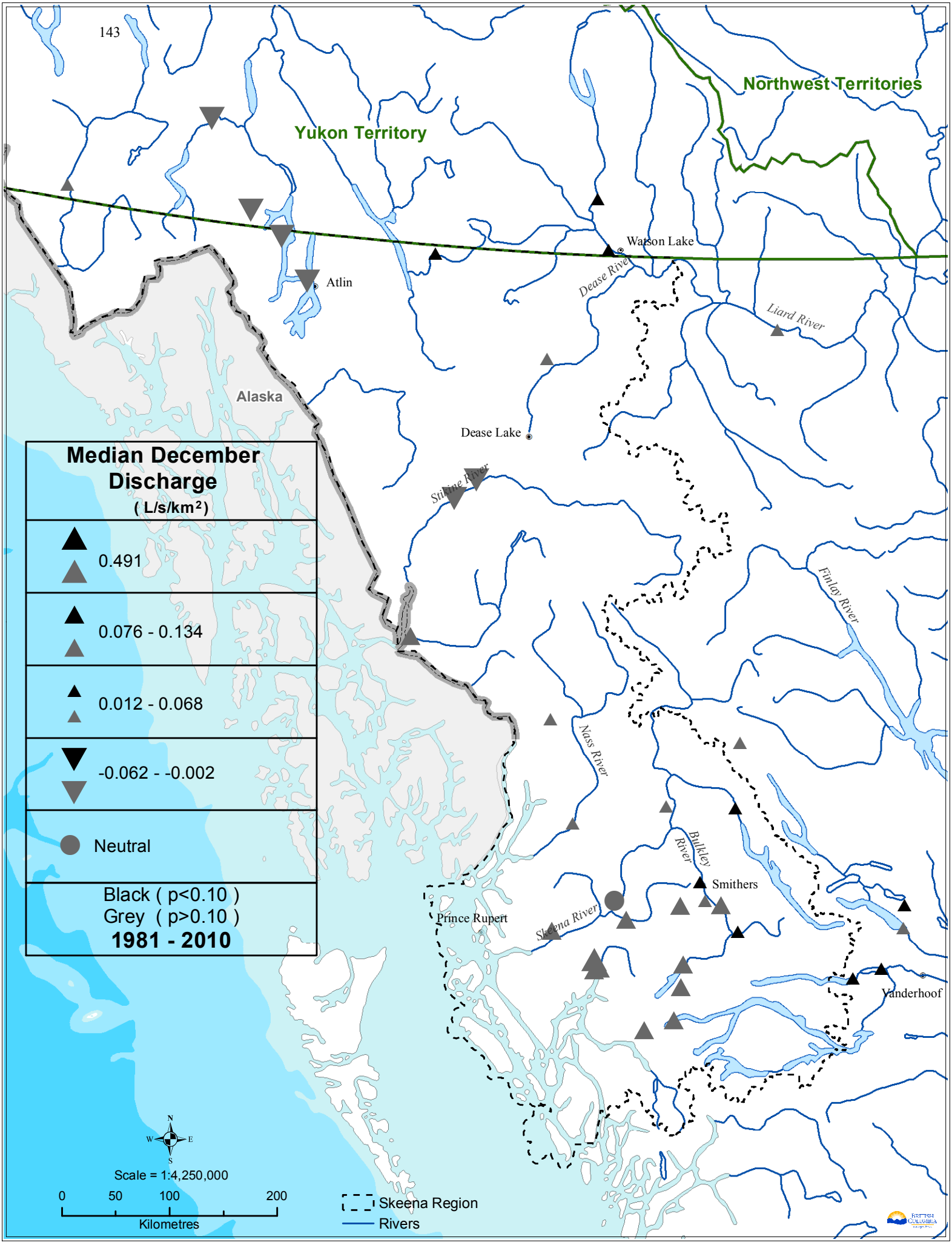

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median July Discharge
(L/s/km²)
0.141 - 0.432
0.011 - 0.085
-0.164 - -0.03
-0.463 - -0.281
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

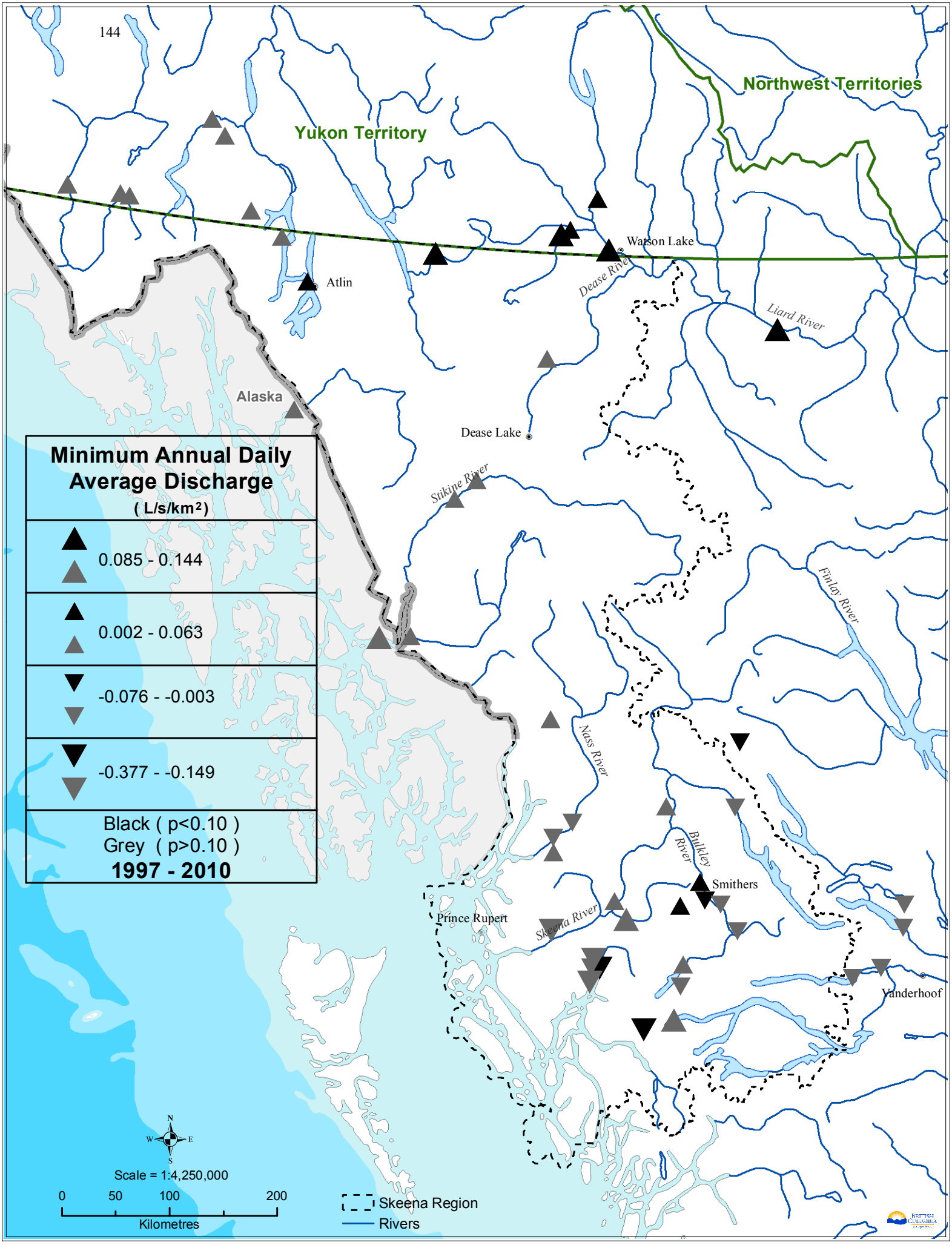

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median August Discharge
(L/s/km²)
1.246
0.001 - 0.689
-0.068 - -0.001
-0.242 - -0.148
Neutral
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

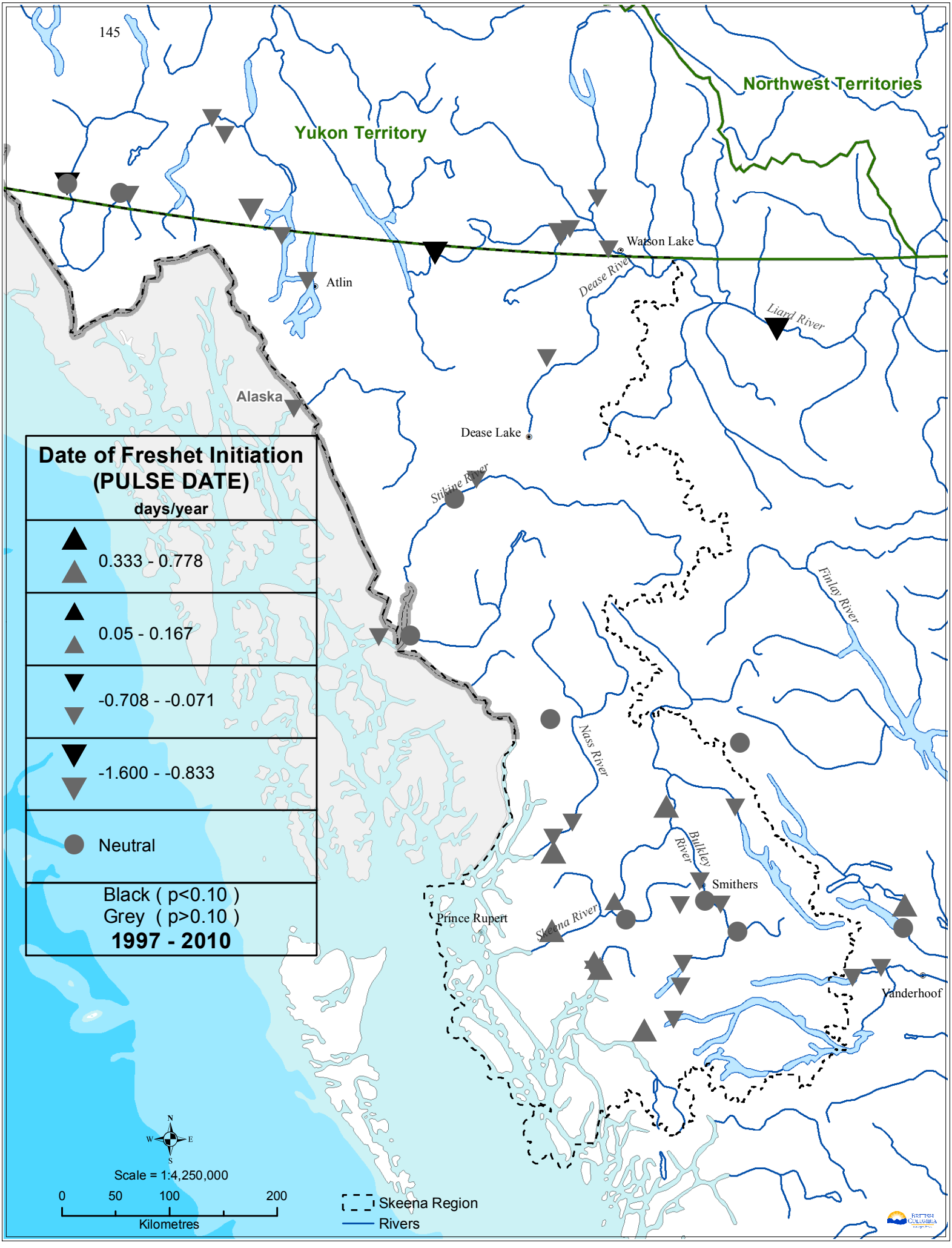

140
Yukon Territory
Northwest Territories
Alaska
Watson Lake
Atlin
Dease River
Liard River
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median September Discharge
(L/s/km²)
0.813 - 1.157
0.255 - 0.609
0.006 - 0.231
-0.134 - -0.005
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

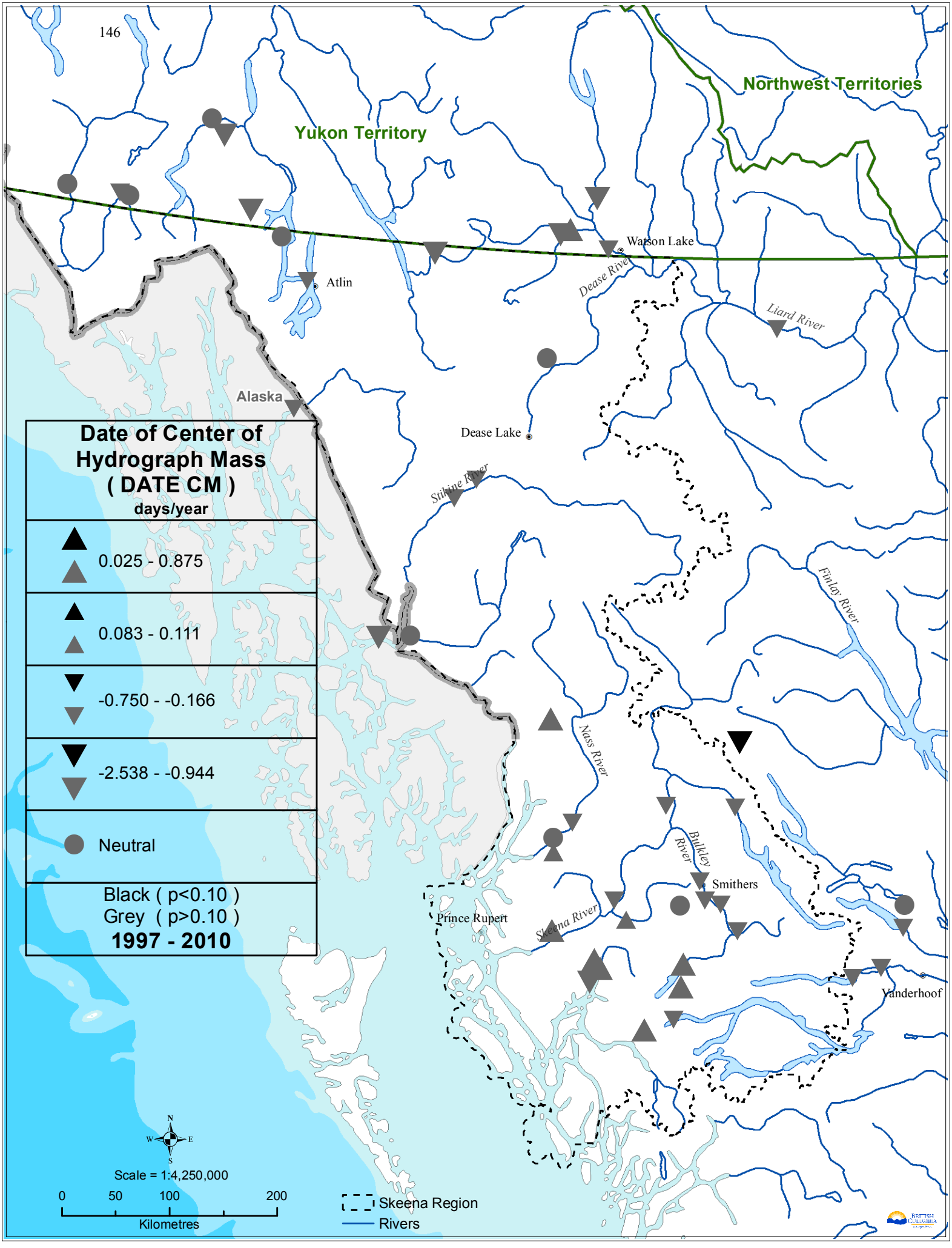

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median October Discharge
(L/s/km²)
1.688
0.278 - 0.465
0.005 - 0.146
-0.129 - -0.009
Neutral
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

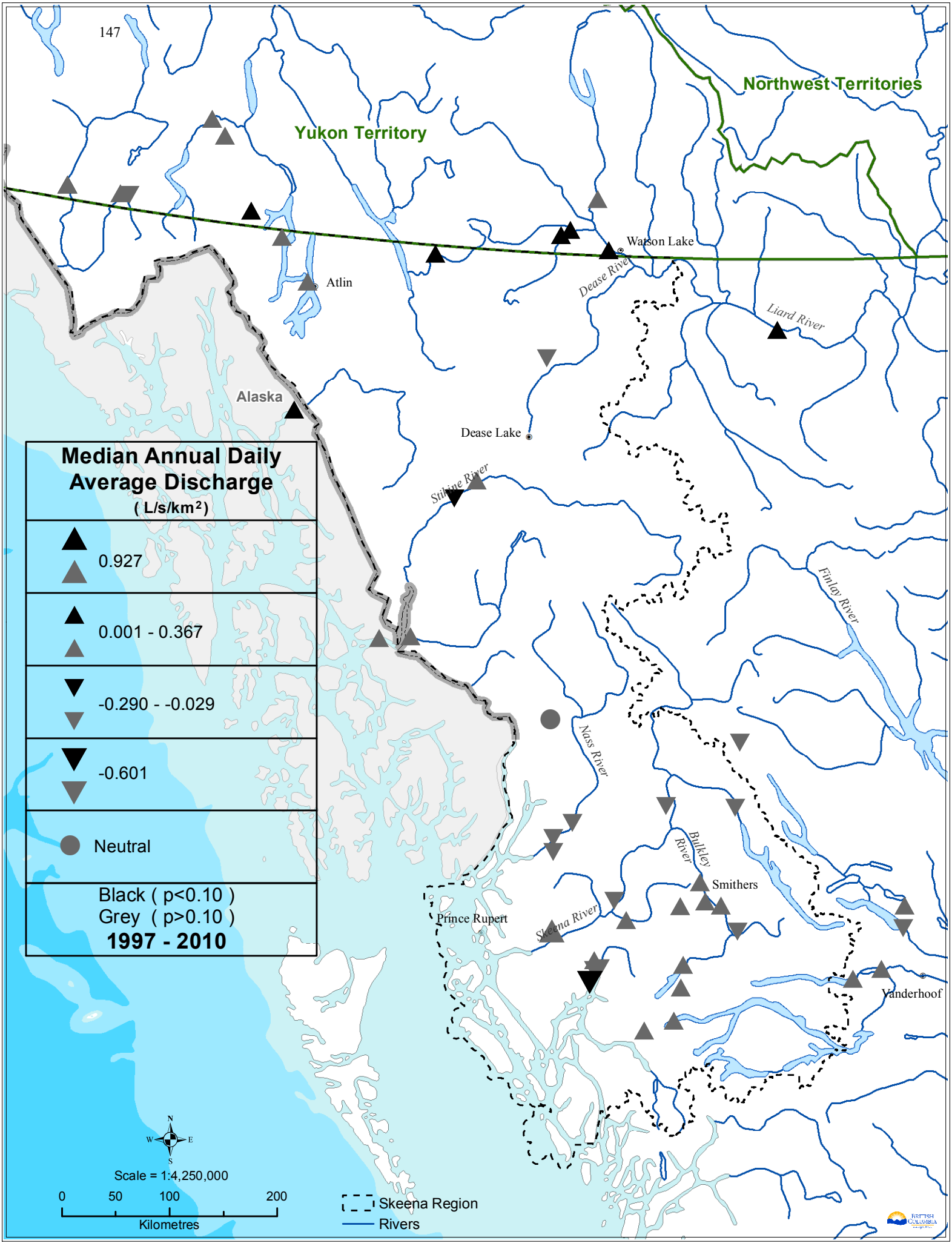

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median November Discharge
(L/s/km²)
0.359 - 0.600
0.134 - 0.312
0.016 - 0.119
-0.055 - -0.004
Neutral
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

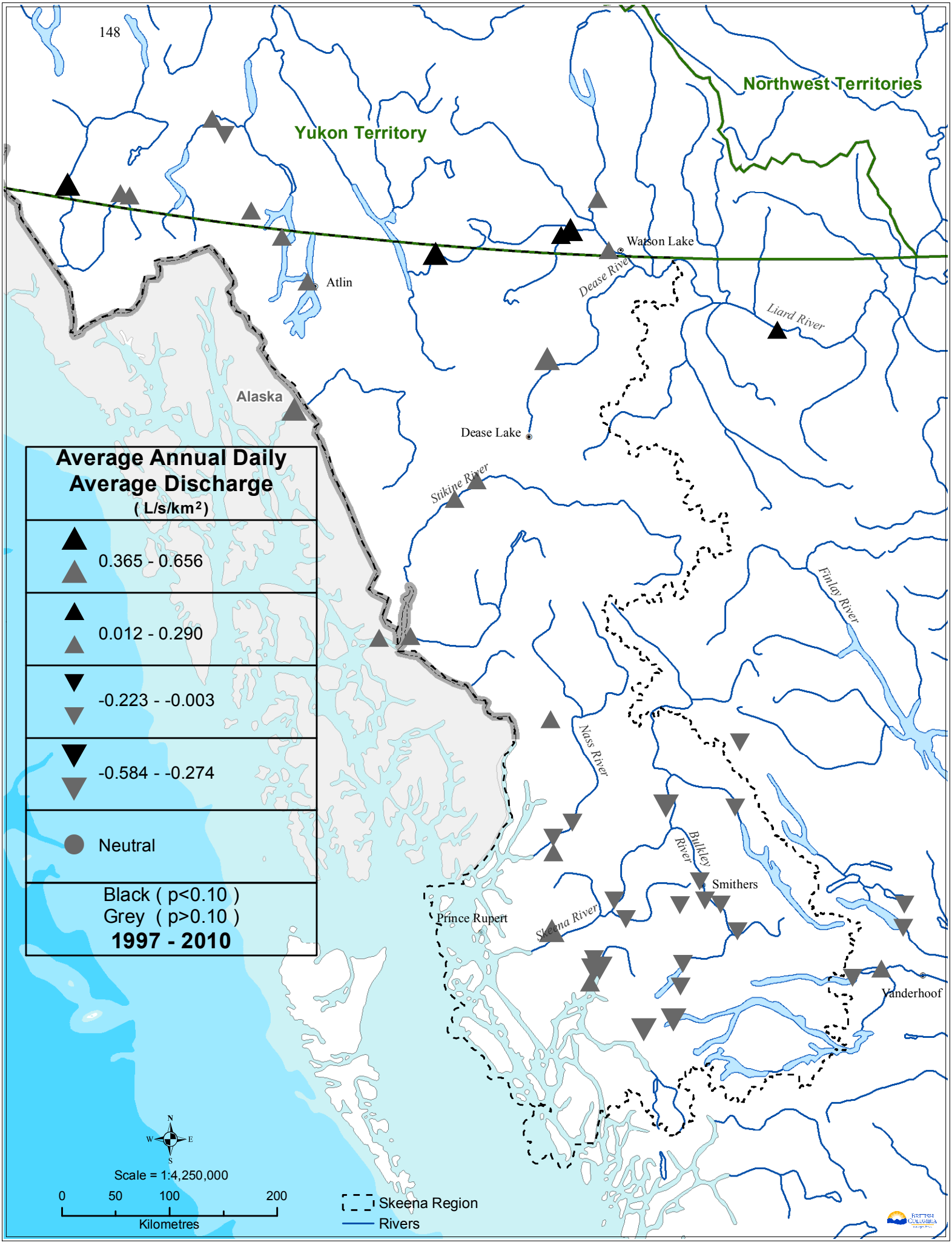

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median December Discharge
(L/s/km²)
0.491
0.076 - 0.134
0.012 - 0.068
-0.062 - -0.002
Neutral
Black (p<0.10)
Grey (p>0.10)
1981 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

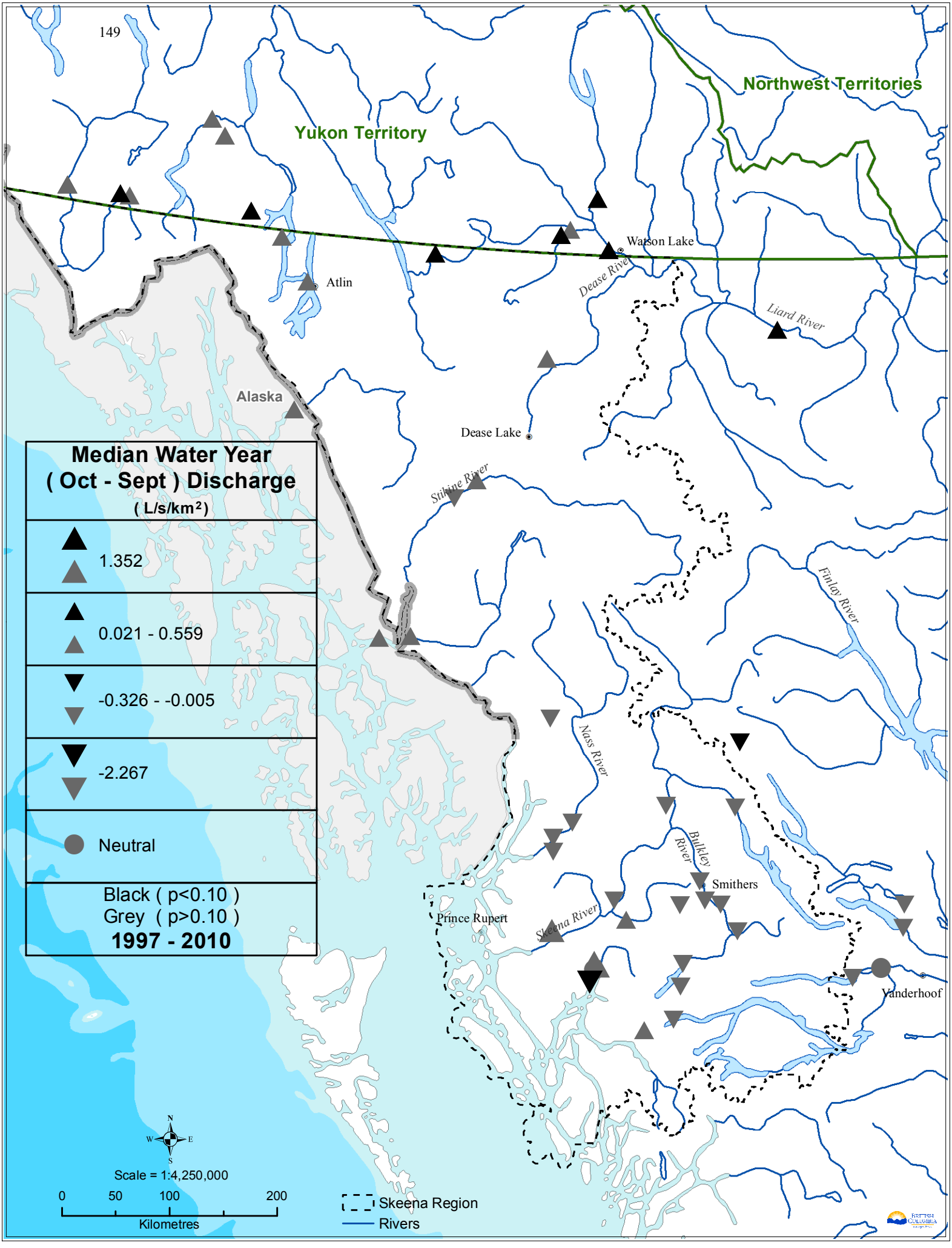

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Minimum Annual Daily Average Discharge
(L/s/km²)
0.085 - 0.144
0.002 - 0.063
-0.076 - -0.003
-0.377 - -0.149
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

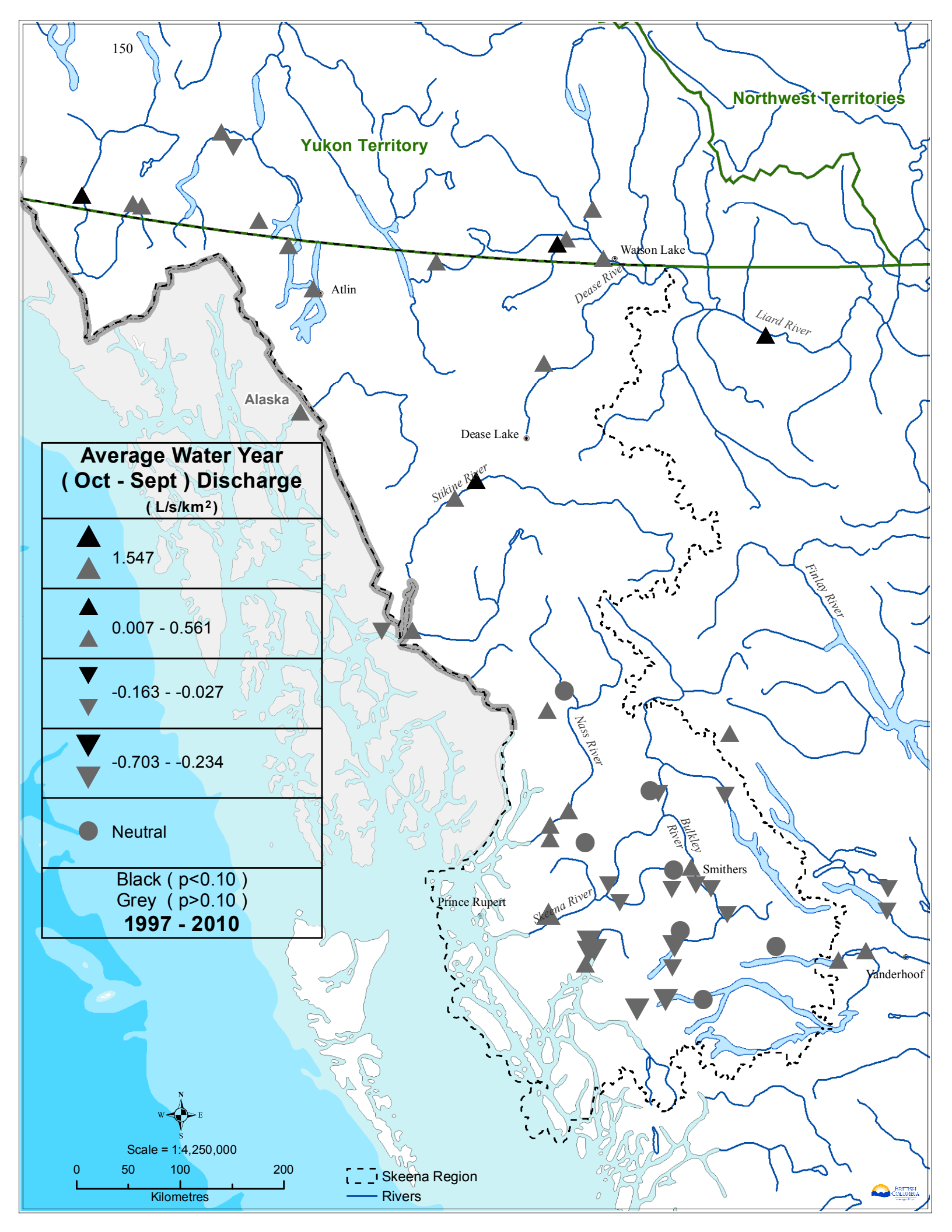

Northwest Territories
Yukon Territory
Watson Lake
Dease River
Atlin
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Date of Freshet Initiation
(PULSE DATE)
days/year
0.333 - 0.778
0.05 - 0.167
-0.708 - -0.071
-1.600 - -0.833
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

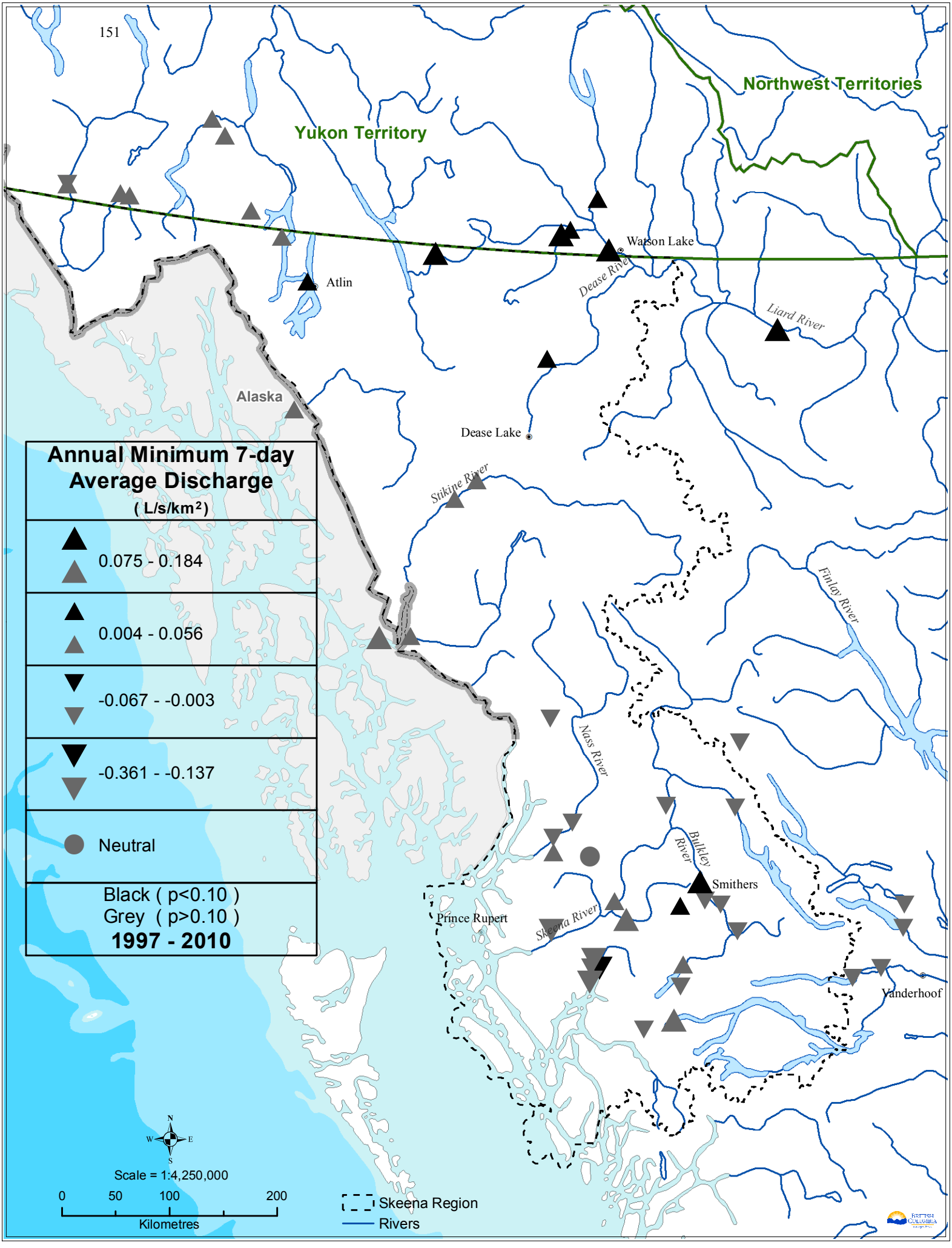

Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Date of Center of Hydrograph Mass
(DATE CM)
days/year
0.025 - 0.875
0.083 - 0.111
-0.750 - -0.166
-2.538 - -0.944
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median Annual Daily Average Discharge
(L/s/km²)
0.927
0.001 - 0.367
-0.290 - -0.029
-0.601
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
Average Annual Daily Average Discharge
(L/s/km²)
0.365 - 0.656
0.012 - 0.290
-0.223 - -0.003
-0.584 - -0.274
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median Water Year
(Oct - Sept) Discharge
(L/s/km²)
1.352
0.021 - 0.559
-0.326 - -0.005
-2.267
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers


150
Yukon Territory
Northwest Territories
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Average Water Year
(Oct - Sept) Discharge
(L/s/km²)
1.547
0.007 - 0.561
-0.163 - -0.027
-0.703 - -0.234
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Annual Minimum 7-day Average Discharge
(L/s/km²)
0.075 - 0.184
0.004 - 0.056
-0.067 - -0.003
-0.361 - -0.137
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
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S
Scale = 1:4,250,000
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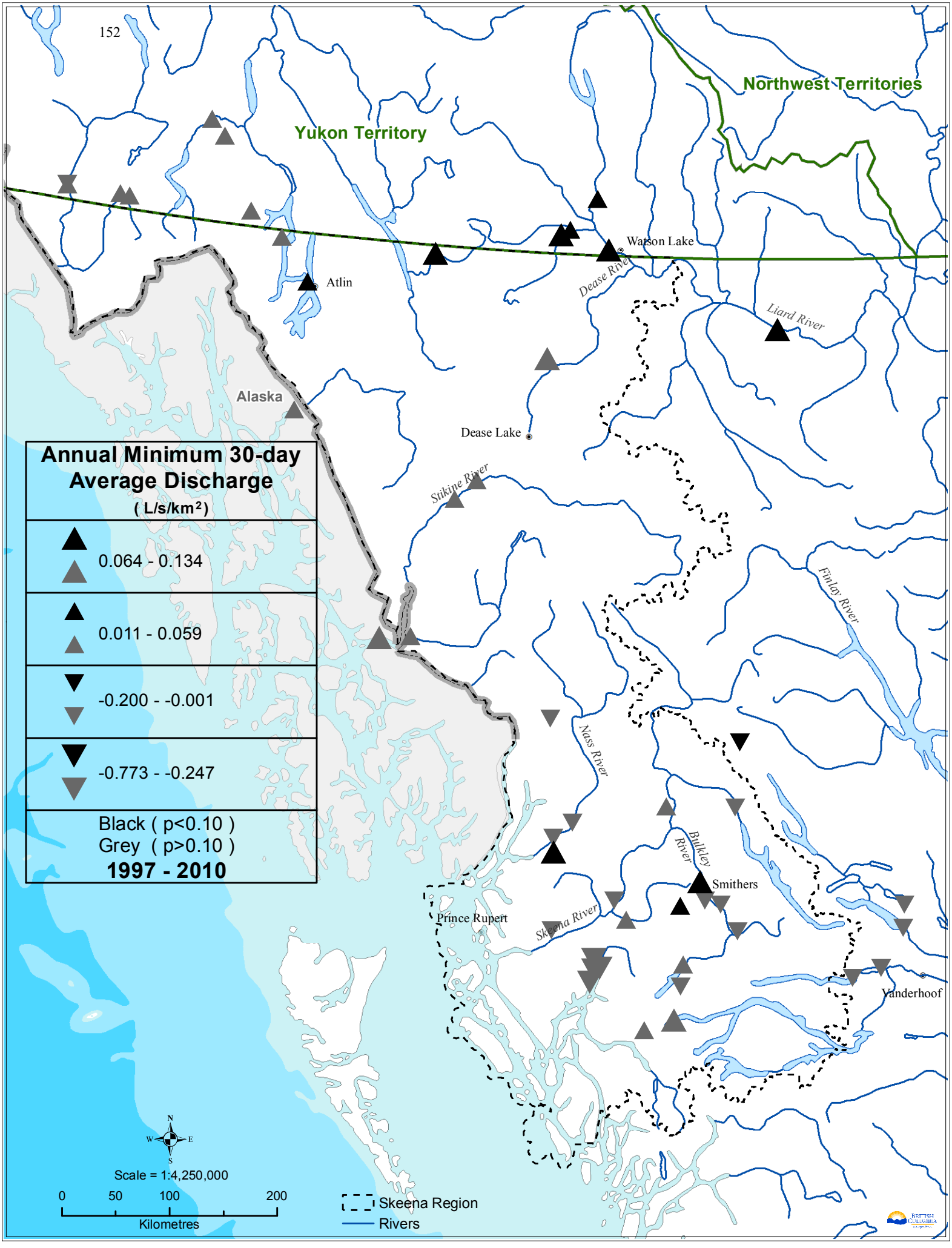
50
100
200
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Dease River
Atlin
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Annual Minimum 30-day Average Discharge
(L/s/km²)
0.064 - 0.134
0.011 - 0.059
-0.200 - -0.001
-0.773 - -0.247
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
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Scale = 1:4,250,000
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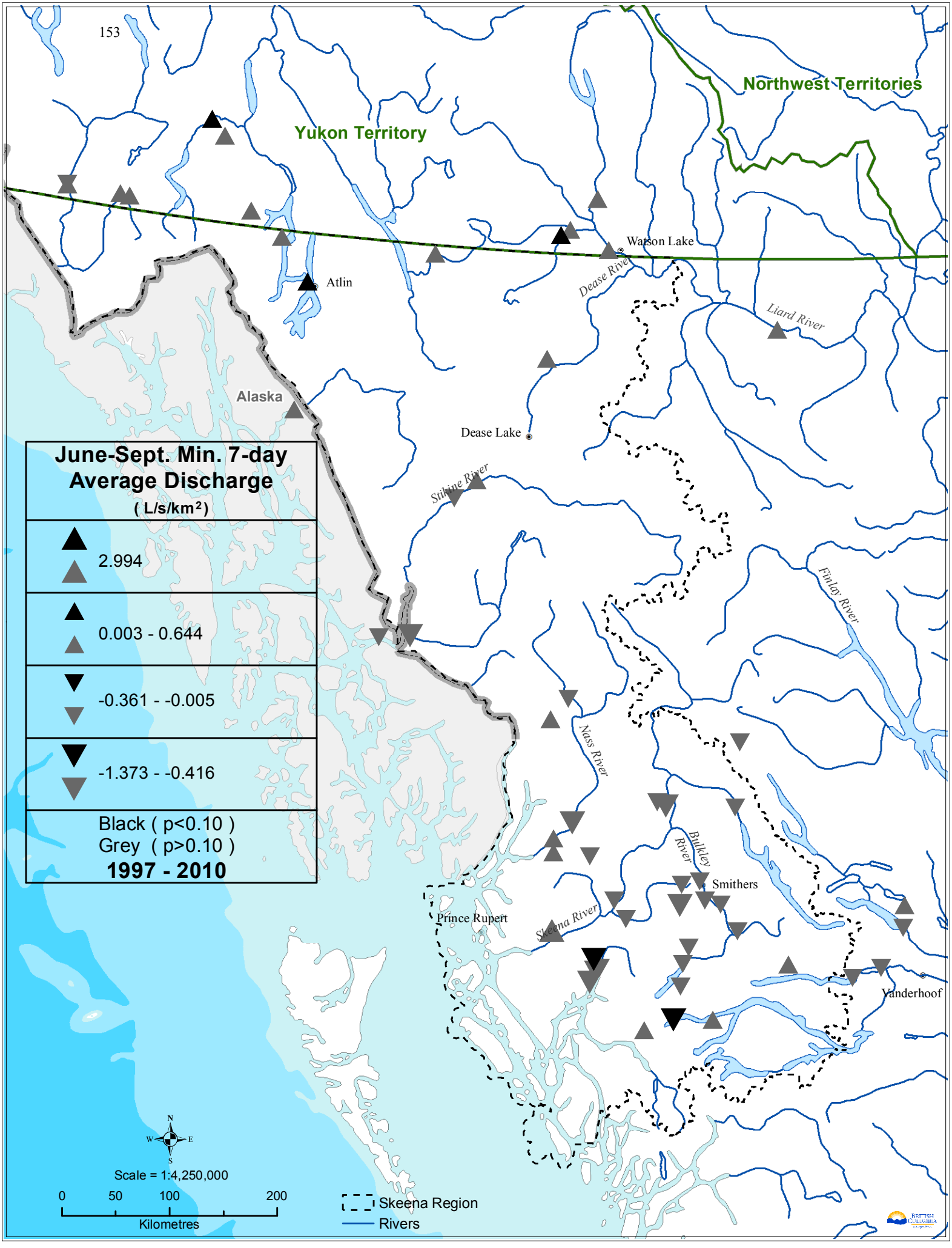
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
June-Sept. Min. 7-day Average Discharge
(L/s/km²)
2.994
0.003 - 0.644
-0.361 - -0.005
-1.373 - -0.416
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
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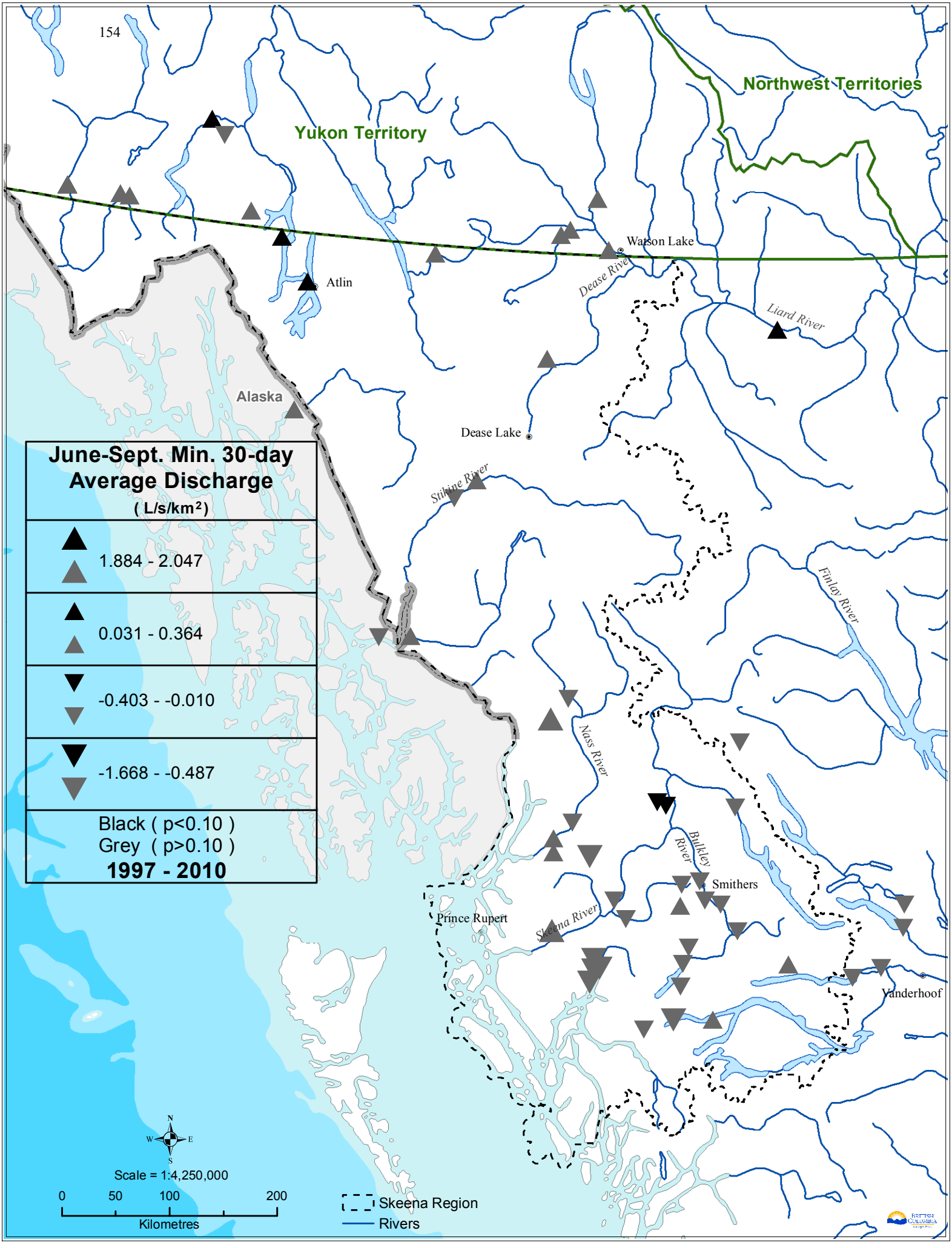
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
June-Sept. Min. 30-day Average Discharge
(L/s/km²)
1.884 - 2.047
0.031 - 0.364
-0.403 - -0.010
-1.668 - -0.487
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
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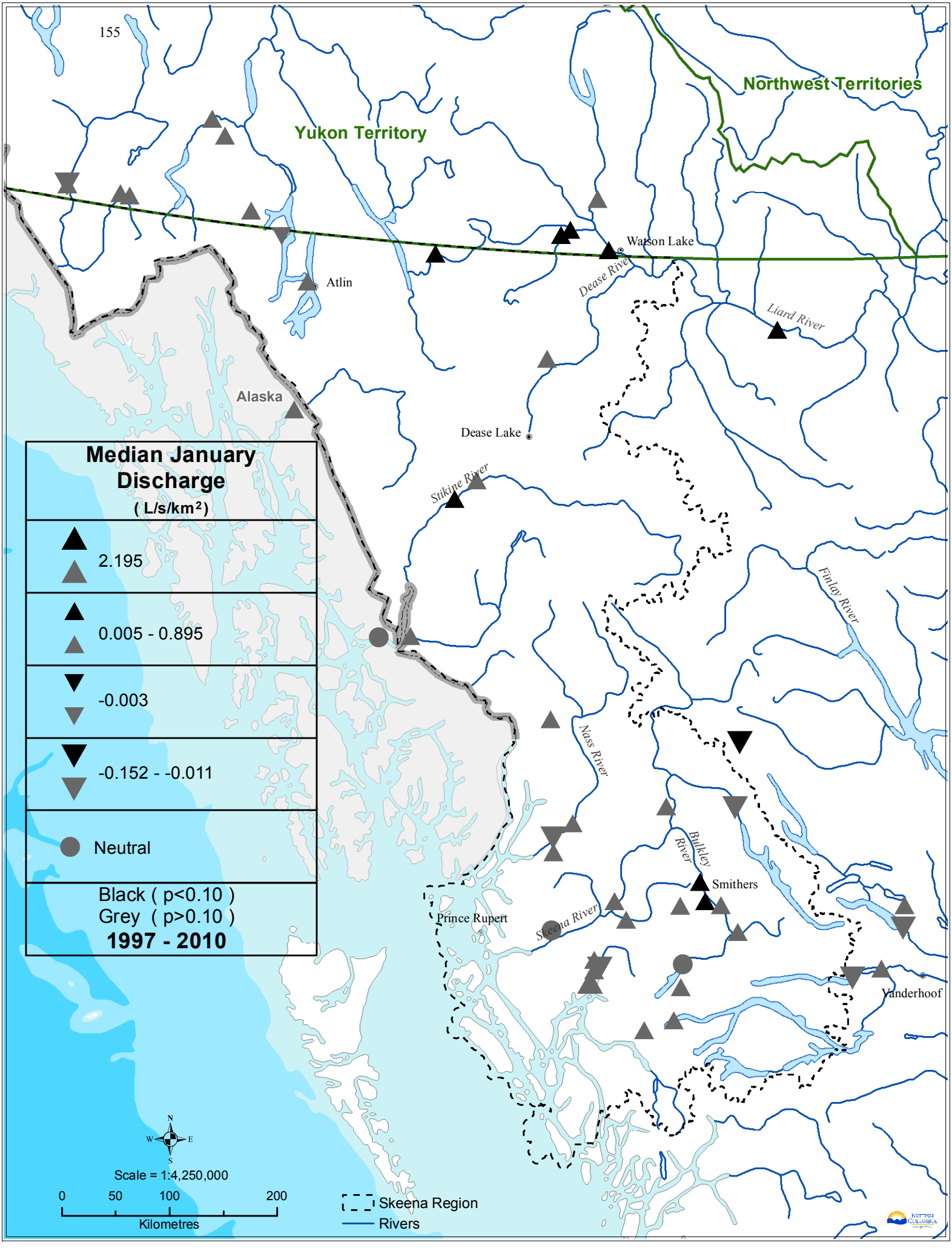
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median January Discharge
(L/s/km²)
2.195
0.005 - 0.895
-0.003
-0.152 - -0.011
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
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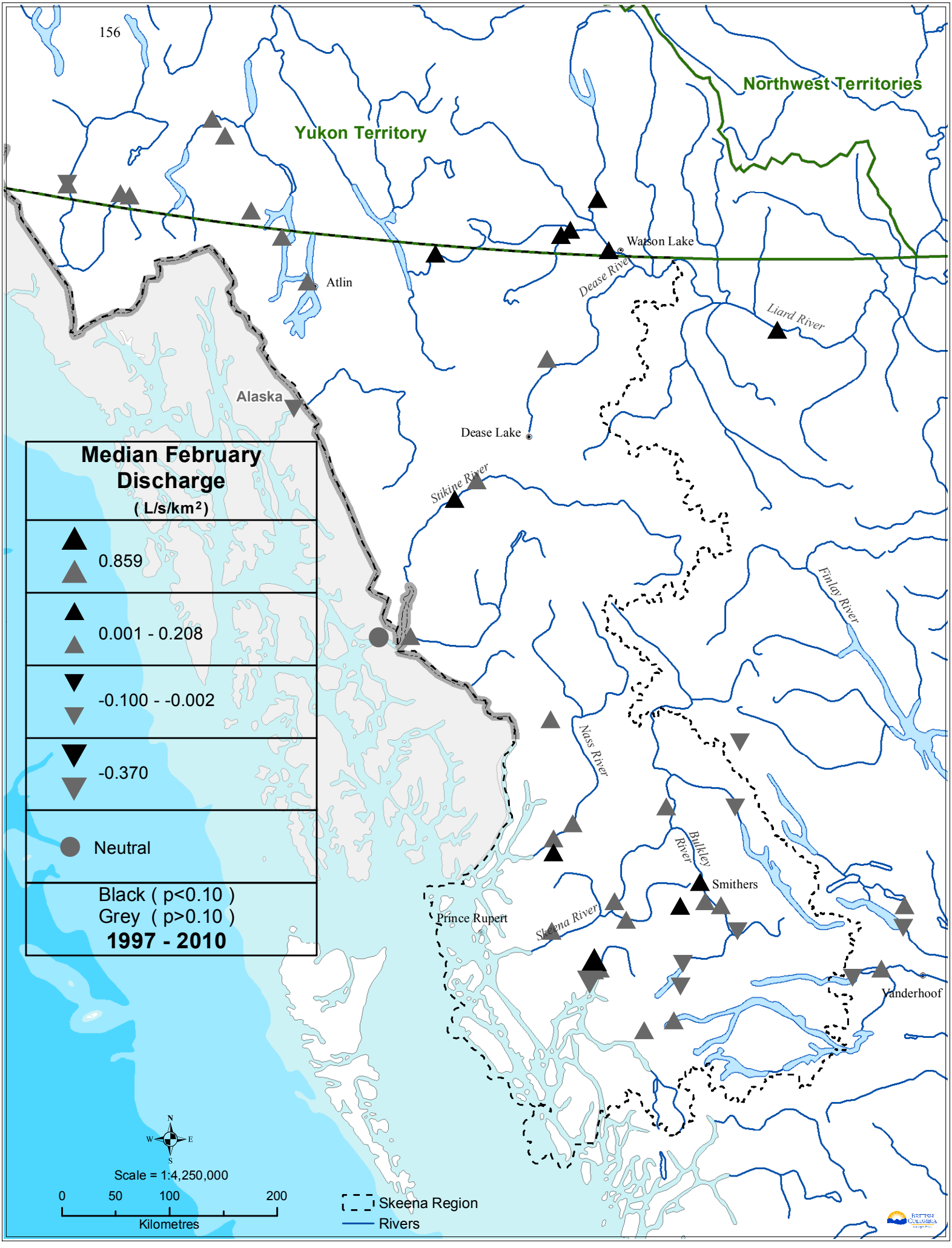
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median February Discharge
(L/s/km²)
0.859
0.001 - 0.208
-0.100 - -0.002
-0.370
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
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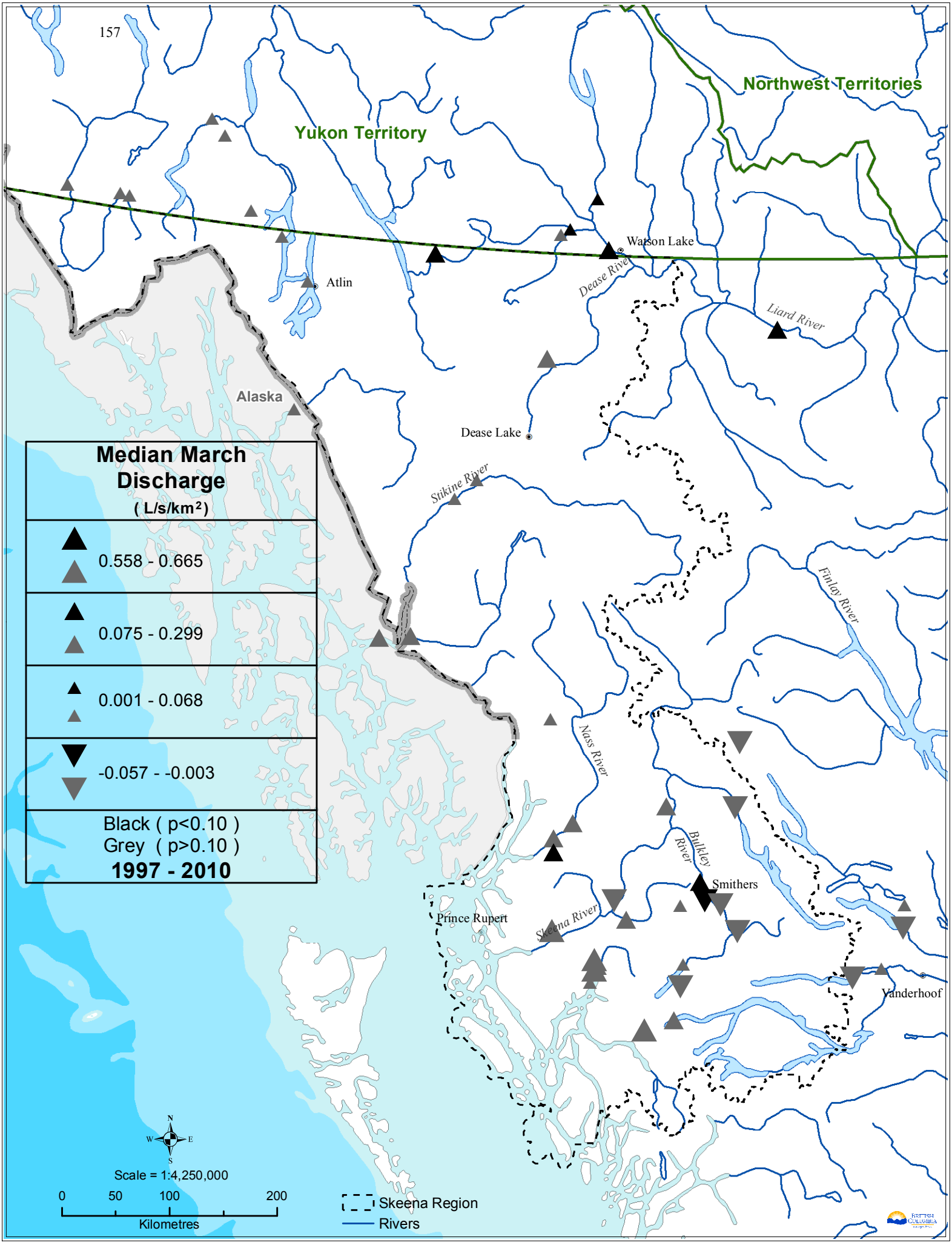
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median March Discharge
(L/s/km²)
0.558 - 0.665
0.075 - 0.299
0.001 - 0.068
-0.057 - -0.003
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
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Scale = 1:4,250,000
0
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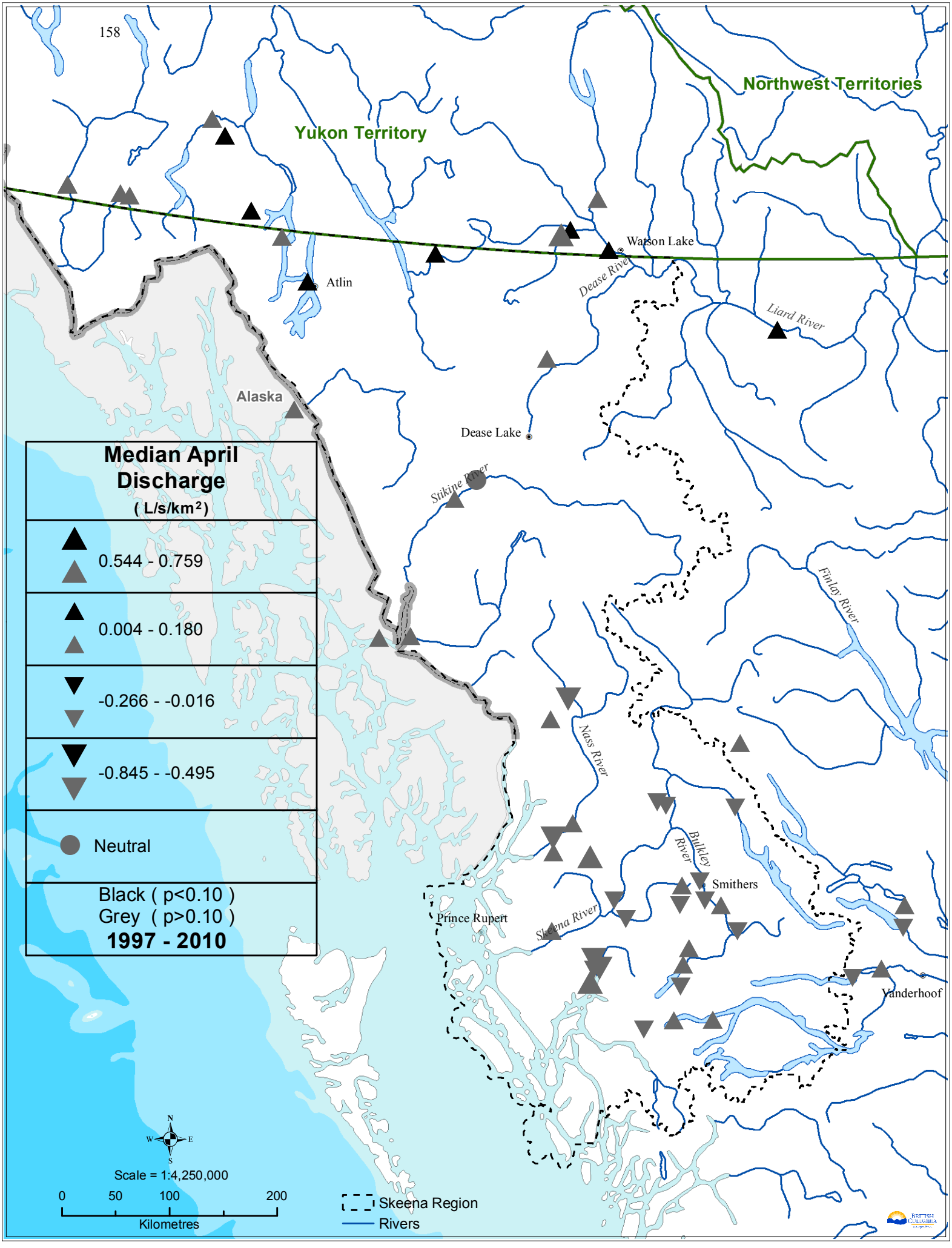
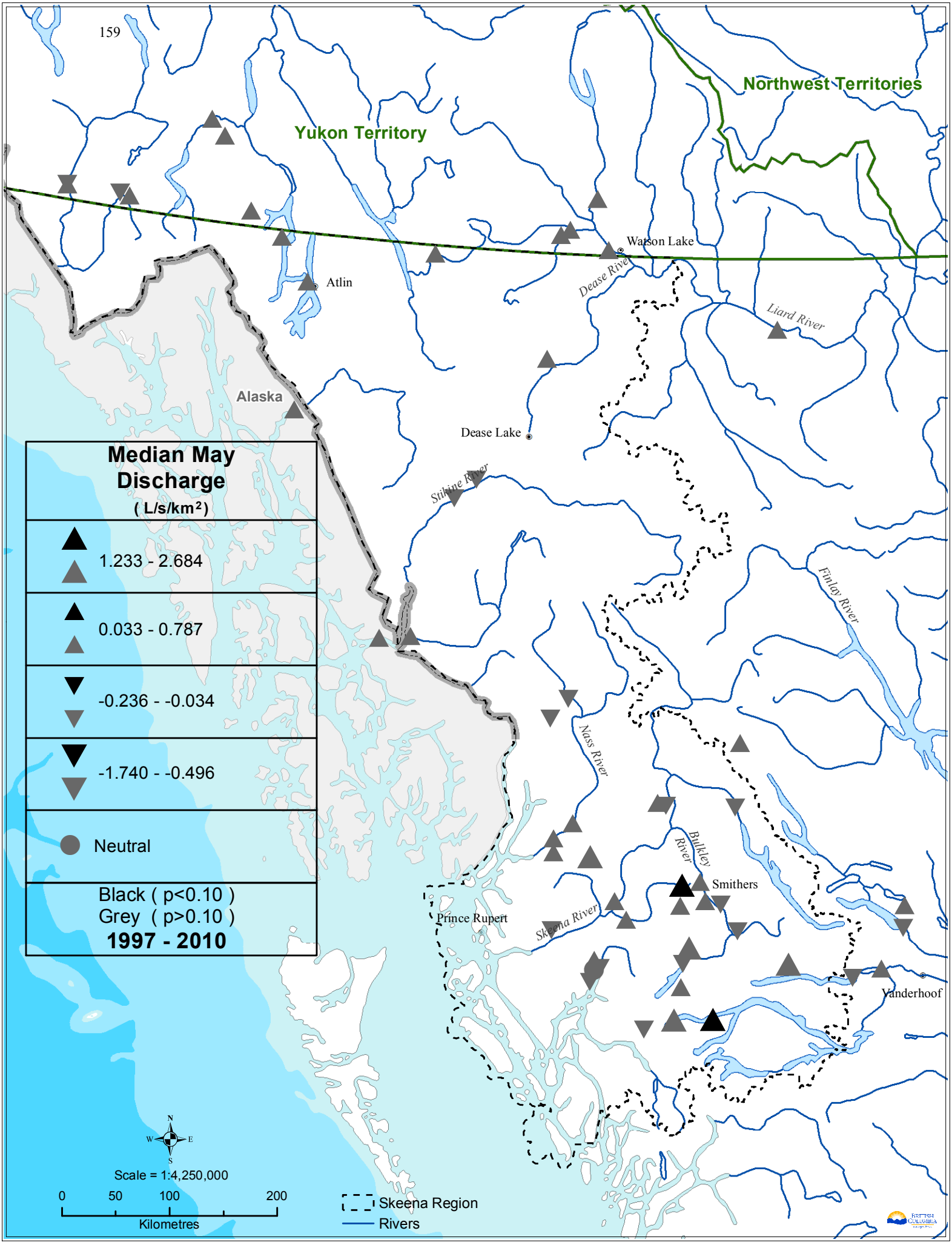
100
200
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median April Discharge
(L/s/km²)
0.544 - 0.759
0.004 - 0.180
-0.266 - -0.016
-0.845 - -0.495
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Dease River
Atlin
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median May Discharge
(L/s/km²)
1.233 - 2.684
0.033 - 0.787
-0.236 - -0.034
-1.740 - -0.496
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
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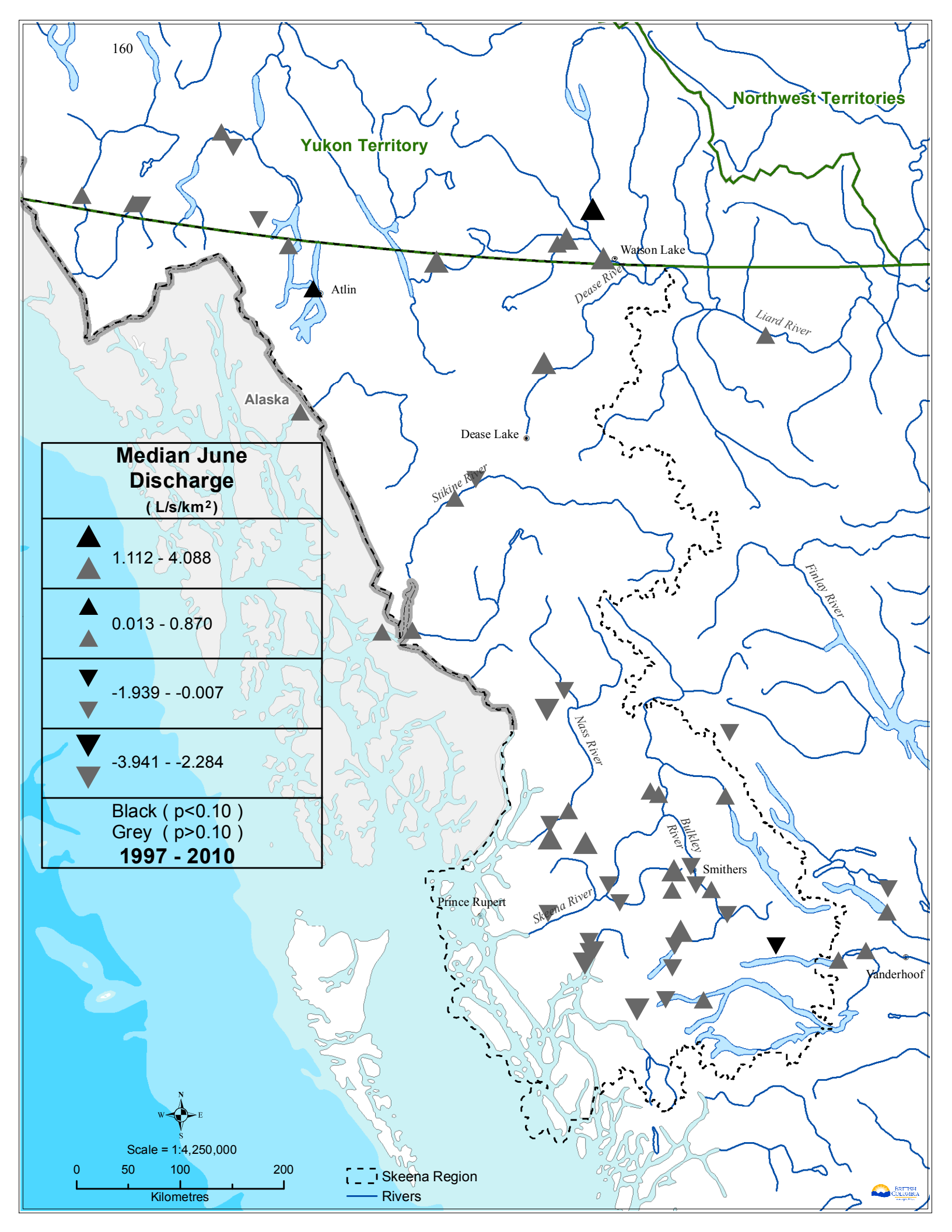
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers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Yukon Territory
Northwest Territories
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Vanderhoof
Median June Discharge
(L/s/km²)
1.112 - 4.088
0.013 - 0.870
-1.939 - -0.007
-3.941 - -2.284
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
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S
Scale = 1:4,250,000
0
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100
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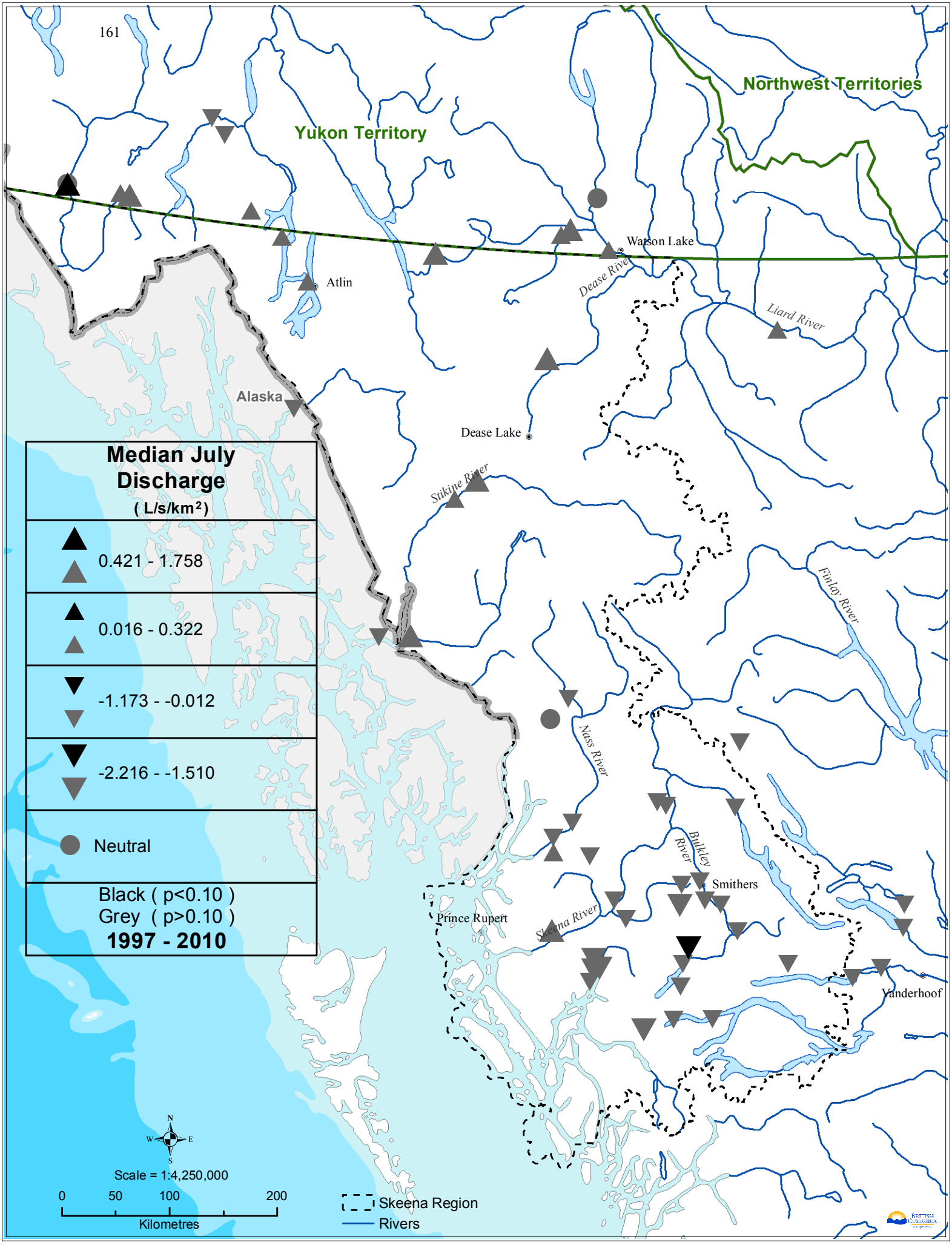
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median July Discharge
(L/s/km²)
0.421 - 1.758
0.016 - 0.322
-1.173 - -0.012
-2.216 - -1.510
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
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Scale = 1:4,250,000
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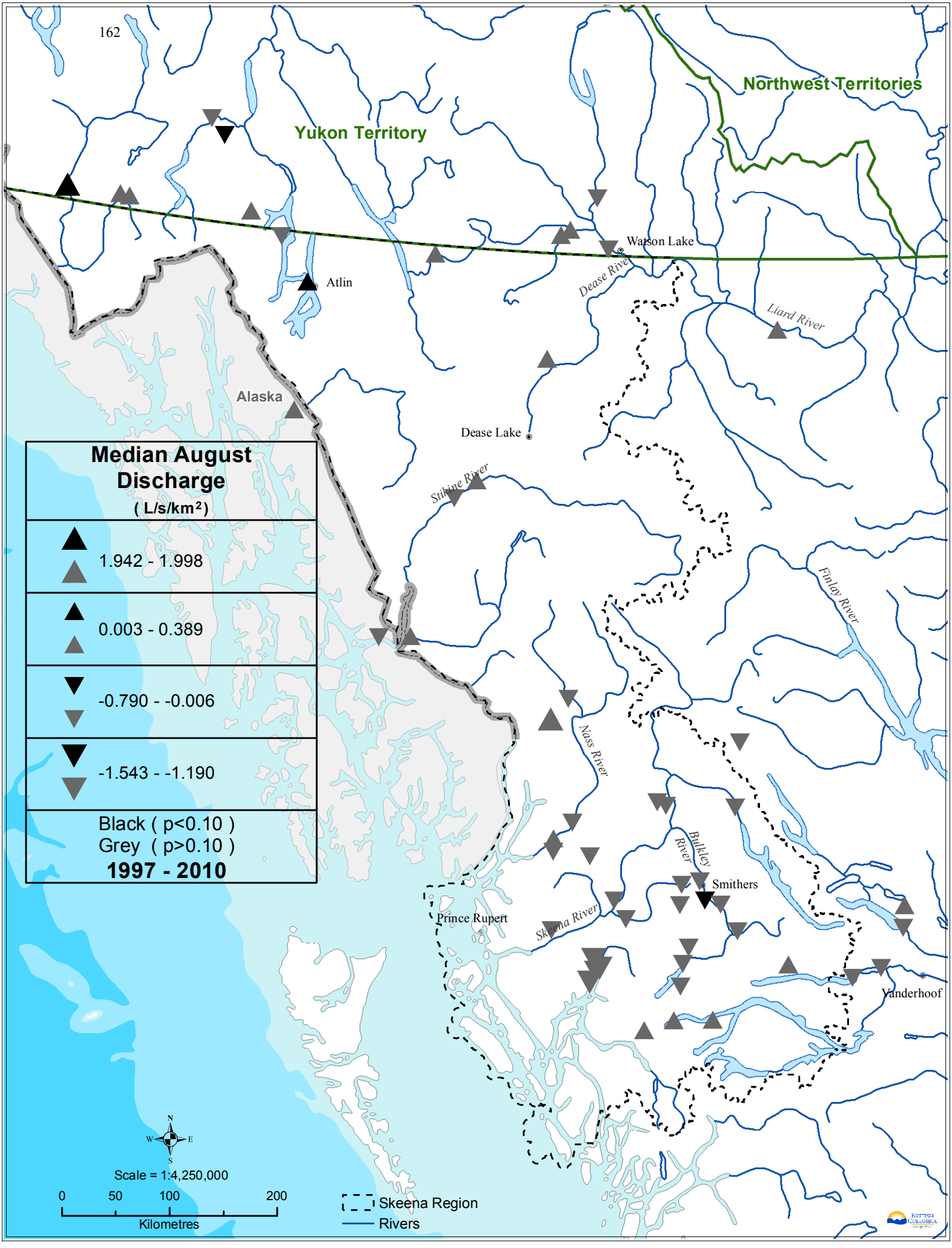
Kilometres
Skeena Region
Rivers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Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median August Discharge
(L/s/km²)
1.942 - 1.998
0.003 - 0.389
-0.790 - -0.006
-1.543 - -1.190
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
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S
Scale = 1:4,250,000
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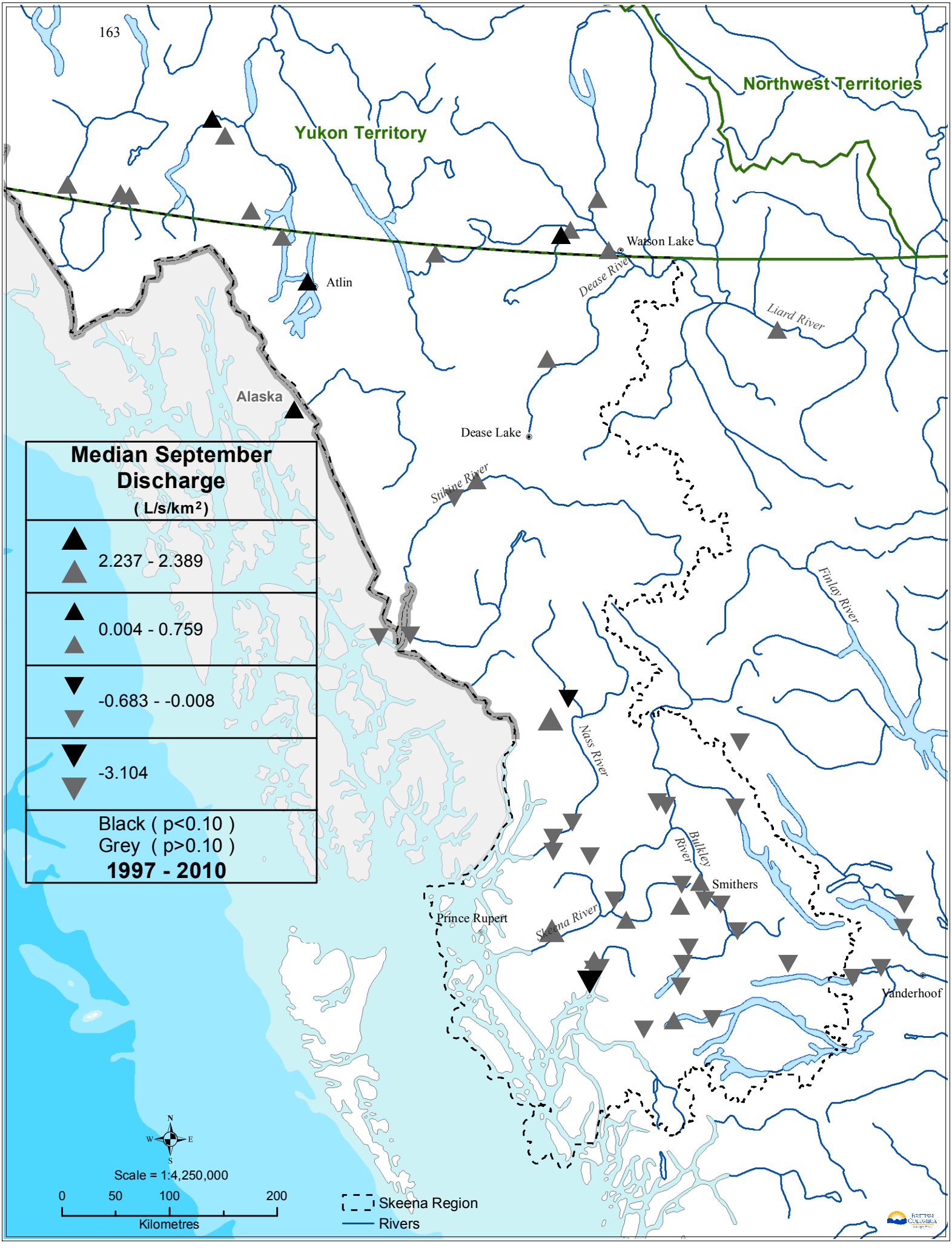
200
Kilometres
Skeena Region
Rivers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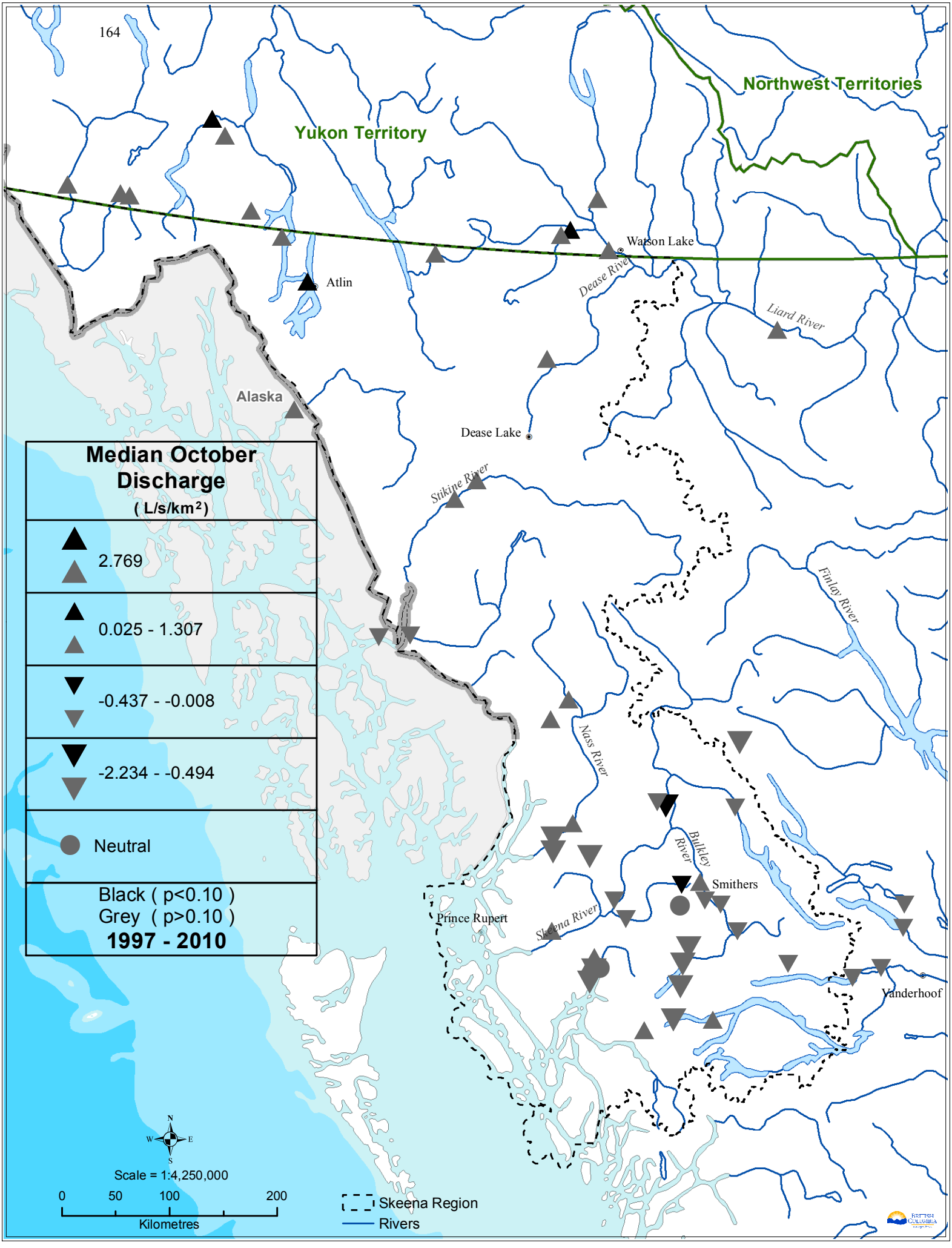
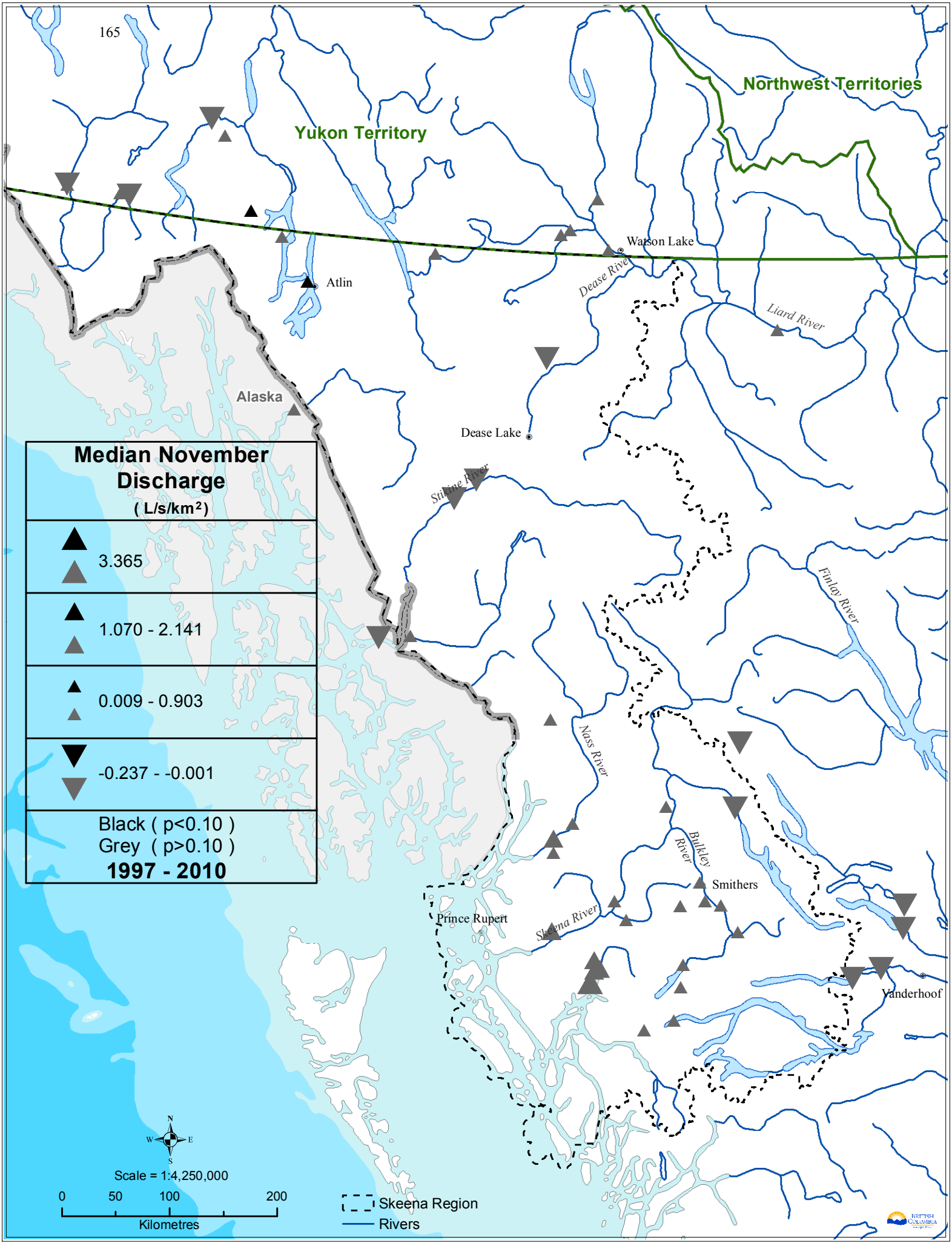
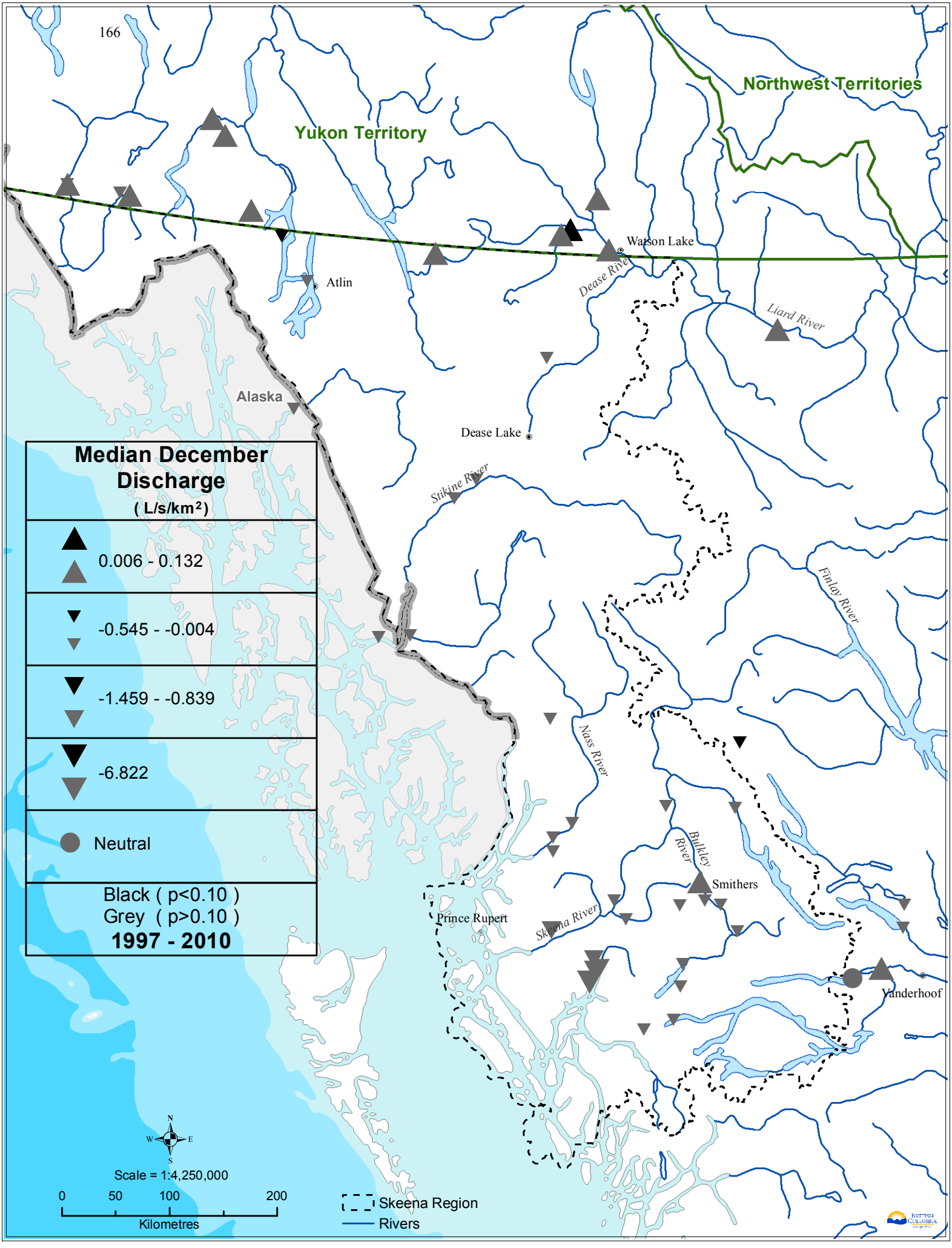
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median September Discharge
(L/s/km²)
2.237 - 2.389
0.004 - 0.759
-0.683 - -0.008
-3.104
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median October Discharge
(L/s/km²)
2.769
0.025 - 1.307
-0.437 - -0.008
-2.234 - -0.494
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers


Northwest Territories
Yukon Territory
Watson Lake
Atlin
Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median November Discharge
(L/s/km²)
3.365
1.070 - 2.141
0.009 - 0.903
-0.237 - -0.001
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers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Dease River
Liard River
Alaska
Dease Lake
Stikine River
Finlay River
Nass River
Bulkley River
Smithers
Prince Rupert
Skeena River
Yanderhoof
Median December Discharge
(L/s/km²)
0.006 - 0.132
-0.545 - -0.004
-1.459 - -0.839
-6.822
Neutral
Black (p<0.10)
Grey (p>0.10)
1997 - 2010
N
W
E
S
Scale = 1:4,250,000
0
50
100
200
Kilometres
Skeena Region
Rivers

Appendix 3 – Study Area Map 34 x 34”

Province of British Columbia – Ministry of Environment

Streamflow Trends in the Skeena Region

Appendix 3 – Study Area Map 34 x 34”

Hydrologic Zones	
Zone Number	Name
1	NORTHERN COAST MOUNTAINS
2	STIKINE PLATEAU
3	NORTHERN ROCKY MOUNTAINS
4	NORTHERN INTERIOR PLAINS
5	NORTHERN CENTRAL UPLANDS
6	SOUTHERN INTERIOR PLAINS
7	SOUTHERN ROCKY MOUNTAIN FOOTHILLS
8	NECHAKO PLATEAU
9	SOUTHERN HAZELTON MOUNTAINS
10	CENTRAL COAST MOUNTAINS
11	QUEEN CHARLOTTE ISLANDS
12	MCGREGOR BASIN
14	NORTHERN COLUMBIA MOUNTAINS
15	FRASER PLATEAU
25	EASTERN SOUTH COAST MOUNTAINS
26	CENTRAL SOUTH COAST MOUNTAINS
27	WESTERN SOUTH COAST MOUNTAINS

Legend

- Natural Resource Operations Region Boundary
- Hydrologic Zone Boundary
- WSC Hydrometric Station Watershed Boundary
- WSC Hydrometric Staion

Figure 1: Streamflow Trends in the Skeena Region

N

0 25 50 75 100 125 150 km