

Appendix 8. Steelhead age structure, by broodyear (BY), for selected Puget Sound rivers. Age structure was based on scales collected from steelhead captured in in-river tribal net fisheries and sport fisheries. Data from WDFW. Numbers in bold indicate the most common age class.

River	Broodyear(s)	W 1.1	W 1.2	2.1	W 1.3	2.2	3.1	2.3	3.2	4.1
Nooksack	BY 78/80	0.0%	0.0%	78.7%	0.0%	13.2%	7.1%	0.0%	1.0%	0.0%
Skagit	BY 79/86	0.3%	0.1%	45.8%	0.0%	30.4%	13.6%	1.1%	8.6%	0.2%
Sauk	BY 83	0.0%	0.0%	29.5%	0.0%	43.2%	5.3%	0.0%	22.1%	0.0%
Snohomish (All)	BY 78/86	1.1%	0.3%	47.4%	0.0%	37.3%	5.7%	0.8%	7.5%	0.0%
Snohomish (Sp)	BY 80/86	0.9%	0.3%	48.8%	0.0%	31.7%	8.4%	0.9%	9.0%	0.0%
Pilchuck	BY 83/85	1.9%	0.7%	46.7%	0.0%	36.6%	8.2%	3.5%	2.4%	0.0%
Skykomish (1)	BY 85/86	0.4%	1.5%	62.2%	0.0%	34.2%	0.0%	0.0%	1.7%	0.0%
Skykomish (Sp) (1+2)	BY 79/81	0.6%	0.0%	61.4%	0.0%	28.0%	2.2%	1.2%	6.7%	0.0%
Tolt	BY 1984	0.0%	49.0%	0.0%	0.0%	51.0%	0.0%	0.0%	0.0%	0.0%
Snoqualmie	BY 79/85	0.6%	0.9%	58.3%	0.0%	36.0%	1.6%	0.0%	2.5%	0.0%
Green	BY 81/86	6.1%	2.4%	42.8%	0.0%	40.7%	3.5%	1.9%	2.5%	0.0%
Puyallup	BY 76/77	7.6%	0.6%	63.0%	0.0%	20.6%	8.3%	0.0%	0.0%	0.0%
Nisqually	BY 78/80	10.5%	3.9%	66.6%	0.0%	17.4%	1.5%	0.1%	0.1%	0.0%

Appendix 9. Standardized average monthly flows for Puget Sound Streams.

River	Dates	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Baker River													
Concrete	1990-2006	79.8	68.9	52.0	48.5	62.0	81.1	69.9	56.9	50.0	65.8	100.0	74.5
Big Beef	1990-2006	100.0	73.1	53.8	28.6	14.3	8.4	4.9	3.5	3.8	12.6	39.5	84.9
Cascade													
Marblemount	1990-2006	32.5	29.1	27.6	39.4	76.0	100.0	78.8	42.6	31.0	34.0	40.2	38.7
Cedar R Landsberg	1990-2006	100.0	91.9	74.1	72.8	61.1	57.4	41.0	31.9	31.9	45.9	86.1	98.5
Duckabush	1990-2006	100.0	71.8	65.4	63.5	76.2	73.4	43.8	24.6	17.4	38.4	84.0	94.4
Dungeness	1990-2006	79.7	65.0	53.0	54.5	82.5	100.0	70.9	39.8	24.1	32.2	67.0	73.9
Elwha (above Mills)	1994-2007	100.0	75.8	62.1	52.5	76.7	73.1	48.9	23.2	19.2	34.3	76.3	93.6
Green Auburn	1990-2006	100.0	92.6	71.3	71.3	61.7	43.0	22.3	12.6	15.0	30.3	79.6	87.8
Hoko	1962-2007	100.0	70.1	61.9	36.2	18.6	11.6	8.7	4.8	8.0	33.9	87.8	92.7
Huge Ck (Kitsap)	1990-2006	100.0	84.0	64.0	44.0	29.2	24.0	19.6	17.6	17.2	22.8	44.0	76.0
Issaquah Cr	1990-2006	100.0	82.0	71.2	56.0	36.8	29.6	17.6	10.8	10.8	21.6	69.2	87.2
Leach Ck	1990-2006	100.0	71.0	62.0	55.0	38.0	35.0	27.0	29.0	31.0	55.0	91.0	87.0
Mercer Ck	1990-2006	100.0	76.2	66.7	54.8	38.1	31.0	22.6	22.4	26.2	47.6	85.7	90.5
MF Snoqualmie Tanner	1990-2006	84.8	66.0	56.5	71.2	88.5	83.2	41.6	18.4	21.8	53.4	100.0	75.9
NF Snoqualmie nr Falls	1990-2006	90.6	68.1	59.7	72.1	78.4	68.6	33.5	14.7	23.1	56.0	100.0	80.2
Nisqually McKenna	1990-2006	97.8	93.8	66.4	57.5	46.9	36.8	28.5	21.9	24.6	32.7	65.0	100.0
Nooksack MS	1990-2006	95.9	76.4	67.2	69.5	76.4	79.8	58.0	37.8	31.7	54.1	100.0	92.6
Nooksack NF	1990-2006	46.4	37.1	34.1	45.6	76.6	100.0	86.9	55.2	37.9	49.1	61.1	45.9
Nooksack SF	1990-2006	93.8	55.8	64.3	68.2	71.7	57.9	29.5	15.7	18.8	51.2	100.0	82.9
Pilchuck River	1992-2007	100.0	76.3	76.5	60.3	43.3	31.3	18.1	10.8	12.9	36.1	80.0	98.5
Puyallup Boise	1990-2006	100.0	93.0	75.4	66.7	52.6	45.6	26.3	16.5	14.9	26.3	77.2	86.0
Puyallup Carbon	1990-2006	91.8	71.6	57.4	64.4	92.8	100.0	73.4	51.4	40.4	55.3	92.3	88.0
Puyallup Electron	1990-2006	85.4	67.6	57.9	66.7	88.0	100.0	91.6	78.1	57.5	58.3	88.6	82.1
Puyallup Greenwater	1990-2006	73.9	70.1	55.8	74.5	100.0	79.9	33.8	16.5	12.4	20.1	52.2	65.1

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Puyallup MS	1990-2006	100.0	92.6	73.6	75.7	78.8	89.0	64.2	44.8	34.0	46.2	83.1	95.5
S. Prairie Ck	1990-2006	100.0	89.4	72.0	71.2	66.7	53.7	28.0	15.9	15.6	31.0	78.8	88.1
Samish	1990-2006	100.0	71.9	68.9	54.5	32.8	24.7	14.0	8.0	8.5	27.5	73.2	88.8
Sauk Whitechuck	1990-2006	66.3	54.4	47.7	62.4	95.0	100.0	63.0	27.9	21.3	48.7	83.4	61.3
SF Tolt	1990-2006	100.0	85.1	64.5	58.9	67.4	64.5	46.1	42.6	42.6	45.4	83.7	90.1
Skagit													
Marblemount	1990-2006	92.8	90.9	78.1	73.4	78.5	83.9	89.6	59.5	48.2	60.9	100.0	75.7
Skagit Vernon	1990-2006	93.0	84.2	71.6	71.6	86.5	96.3	81.9	52.6	42.1	59.1	100.0	86.0
Skokomish	1990-2006	100.0	74.8	57.2	41.4	25.3	18.0	11.2	9.6	9.9	27.8	77.2	97.9
Skykomish Gold													
Bar	1990-2006	80.8	64.9	57.7	74.4	100.0	92.2	46.6	18.9	18.4	49.3	99.2	72.5
Snohomish Monroe	1990-2006	95.1	78.2	66.3	75.4	85.2	78.2	41.2	19.5	20.6	49.6	100.0	88.0
Snoqualmie Tolt	1990-2006	100.0	78.2	66.4	67.6	63.8	53.5	31.0	19.9	22.5	44.5	88.7	90.9
Stillaguamish													
Arlington	1990-2006	98.4	75.5	68.0	64.0	57.5	44.7	21.7	13.6	17.6	49.1	100.0	94.4
Stillaguamish													
Granite F	1990-2006	87.4	71.4	62.9	61.7	78.3	64.6	36.9	21.0	30.6	50.4	79.4	100.0
Tulalip Ck	2000-2006	100.0	88.9	88.9	88.9	55.0	41.1	30.6	29.4	32.2	49.4	61.1	83.3

Appendix 10. Catastrophic-risk categories for Puget Sound Chinook salmon (Good et al. 2008)

Georegion	Basin/Population	Risk Source							
		Volcano ¹	Earthquake ²	Landslide ³	Flood ⁴	Toxic Leak ⁵	Toxic Spill ⁶	Hatchery ⁷	Dam Breach ⁸
NE	N.F. Nooksack	70.6	34.9	18.8	20	0.20	0.19	0.0	0.0
NE	S.F. Nooksack	4.2	33.6	20.2	20	0.04	0.14	0.0	0.0
CE	Lower Skagit	70.3	34.8	20.6	20	0.20	0.15	0.0	55.8
CE	Upper Skagit	3.5	20.7	32.2	20	0.10	0.61	11.6	51.5
CE	Cascade	0.0	20.0	34.0	20	0.10	0.00	0.0	0.0
CE	Lower Sauk	98.9	30.0	19.4	22	0.10	0.25	0.0	6.8
CE	Upper Sauk	100	29.9	31.0	25	0.00	0.0	0.0	0.0
CE	Suiattle	99.2	25.7	31.0	23	0.01	0.03	0.0	0.0
CE	N.F. Stilligumish	79.7	34.0	21.3	25	0.02	0.26	9.0	0.0
CE	S.F. Stilligumish	52.5	40.0	16.5	25	0.20	0.28	0.0	25.2
CE	Skykomish	0.0	40.0	19.7	26	0.30	0.39	3.0	17.9
CE	Snoqualmie	0.0	48.3	19.8	33	0.20	0.28	0.0	25.2
S	Sammamish	0.0	51.4	4.5	31	1.60	0.62	12.2	0.0
S	Cedar	0.0	52.3	10.7	33	0.80	0.74	0.0	45.0
S	Green	37.3	45.5	9.2	33	0.90	0.39	14.6	42.2
S	White	92.1	39.9	14.4	27	0.30	0.28	1.9	31.2
S	Puyallup	98.6	44.6	10.4	25	0.20	0.31	8.4	7.0
S	Nisqually	92.9	42.3	5.1	28	0.10	0.16	33.1	52.9
CW	Skokomish	0.0	50.0	23.3	25	0.03	0.08	28.0	35.5
CW	Mid-Hood Canal	0.0	50.0	32.2	21	0.10	0.06	5.4	0.0
NW	Dungeness	0.0	50.0	30.2	14	0.10	0.02	41.1	0.0
NW	Elwha	0.0	50.0	36.6	15	0.04	0.16	46.8	20.4

¹ Chinook salmon distribution overlapping with volcanic hazard zones (%).

² Chinook salmon distribution falling under earthquake risk; weighted mean of the amount of the distribution under each contour value (%).

³ Chinook salmon distribution under high landslide risk (%).

⁴ Mean chance of annual flood occurrence (%).

⁵ Potential point source pollution facilities per km of Chinook salmon reaches (no./km).

⁶ Major transportation routes per km of chino salmon reaches (km/km).

⁷ Releases of hatchery Chinook salmon per meter of Chinook salmon reaches (no. releases/km).

⁸ Chinook salmon distribution impacted by unplanned dam breaches (%).