



United States Department of the Interior



FISH AND WILDLIFE SERVICE
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March 5, 2024

To: Interested Parties

From: Scott Voss, Supervisory Fish Biologist, Red Bluff Fish and Wildlife Office

Subject: Biweekly report (February 12, 2024 - February 25, 2024)

Please find attached preliminary daily estimates of passage, 90% confidence intervals, and fork length ranges of unmarked juvenile salmonids sampled at Red Bluff Diversion Dam for the period February 12, 2024 through February 25, 2024. Race designation was assigned using length-at-date criteria.

Mean cumulative weekly passage of winter Chinook thru February 25 (week 8) for the last 21 years of passage data is $99.0\% \pm 1.3\%$.

This report also contains graphical displays of salmonid passage dating back to 2010 for comparison.

Please note that data contained in these reports is subject to revision as this data is preliminary and undergoing QA/QC procedures.

If you have any questions, please feel free to contact me at (530) 527-3043 ext 243.

Table 1.— Preliminary estimates of passage by brood-year (BY) and run for unmarked juvenile Chinook salmon and steelhead trout captured by rotary-screw traps at Red Bluff Diversion Dam (RK391), Sacramento River, CA, for the dates listed below. Results include estimated passage, peak river discharge volume, water temperature, turbidity, and fork length (mm) range in parentheses. A dash (-) indicates that sampling was not conducted on that date.

Date	Discharge volume (cfs) ¹	Water temperature (°C)	Water turbidity (NTU)	Estimated passage				
				BY23 Winter	BY23 Spring	BY23 Fall	BY23 Late-Fall	BY24 RBT
2/12/2024	19,869	9.6	10.4	1,606 (80 – 115)	66 (57 – 57)	7,020 (34 – 51)	0 (–)	0 (–)
2/13/2024	19,251	9.7	10.3	289 (90 – 132)	458 (56 – 71)	7,848 (30 – 53)	0 (–)	0 (–)
2/14/2024	18,892	9.8	8.2	267 (84 – 126)	159 (56 – 60)	4,681 (33 – 51)	0 (–)	0 (–)
2/15/2024	26,410	9.9	42.7	247 (128)	514 (55 – 68)	51,903 (33 – 52)	0 (–)	0 (–)
2/16/2024	24,346	10.0	37.6	231 (96)	231 (63 – 63)	10,157 (33 – 55)	0 (–)	0 (–)
2/17/2024	21,170	9.9	–	–	–	–	–	–
2/18/2024	41,699	10.2	–	–	–	–	–	–
2/19/2024	61,161	10.6	–	–	–	–	–	–
2/20/2024	61,751	10.7	–	–	–	–	–	–
2/21/2024	45,800	10.4	–	–	–	–	–	–
2/22/2024	43,743	10.6	–	–	–	–	–	–
2/23/2024	49,288	10.3	–	–	–	–	–	–
2/24/2024	48,639	9.3	–	–	–	–	–	–
2/25/2024	45,633	10.5	–	–	–	–	–	–
Biweekly Total ²				7,129	4,178	186,907	0	0
<i>Biweekly Lower 90% Confidence Interval</i>				-2,601	-1,156	-73,047	0	0
<i>Biweekly Upper 90% Confidence Interval</i>				16,860	9,513	446,860	0	0
Brood Year Total				1,101,345	32,828	1,675,110	52,552	1,120
<i>Brood year Lower 90% Confidence Interval</i>				788,400	11,287	662,133	23,648	-257
<i>Brood year Upper 90% Confidence Interval</i>				1,414,291	54,369	2,688,086	81,456	2,498

¹ Peak daily discharge values do not account for diversions at RBDD and only represent peak flows registered at the Bend Bridge Gauging station (<http://cdec2.water.ca.gov/cgi-progs/queryFv?bnd>).

² Biweekly totals may be greater than the sum of the daily estimates presented in this table if sampling was not conducted on each day of the biweekly period. A dash (-) denotes those dates. To estimate daily passage for days that were not sampled, we impute missed sample days with the weekly mean value of days sampled within the week; for weeks with no days sampled within the week a monthly mean value of days sampled within the month is used.

Juvenile Winter Chinook Salmon Estimated Passage

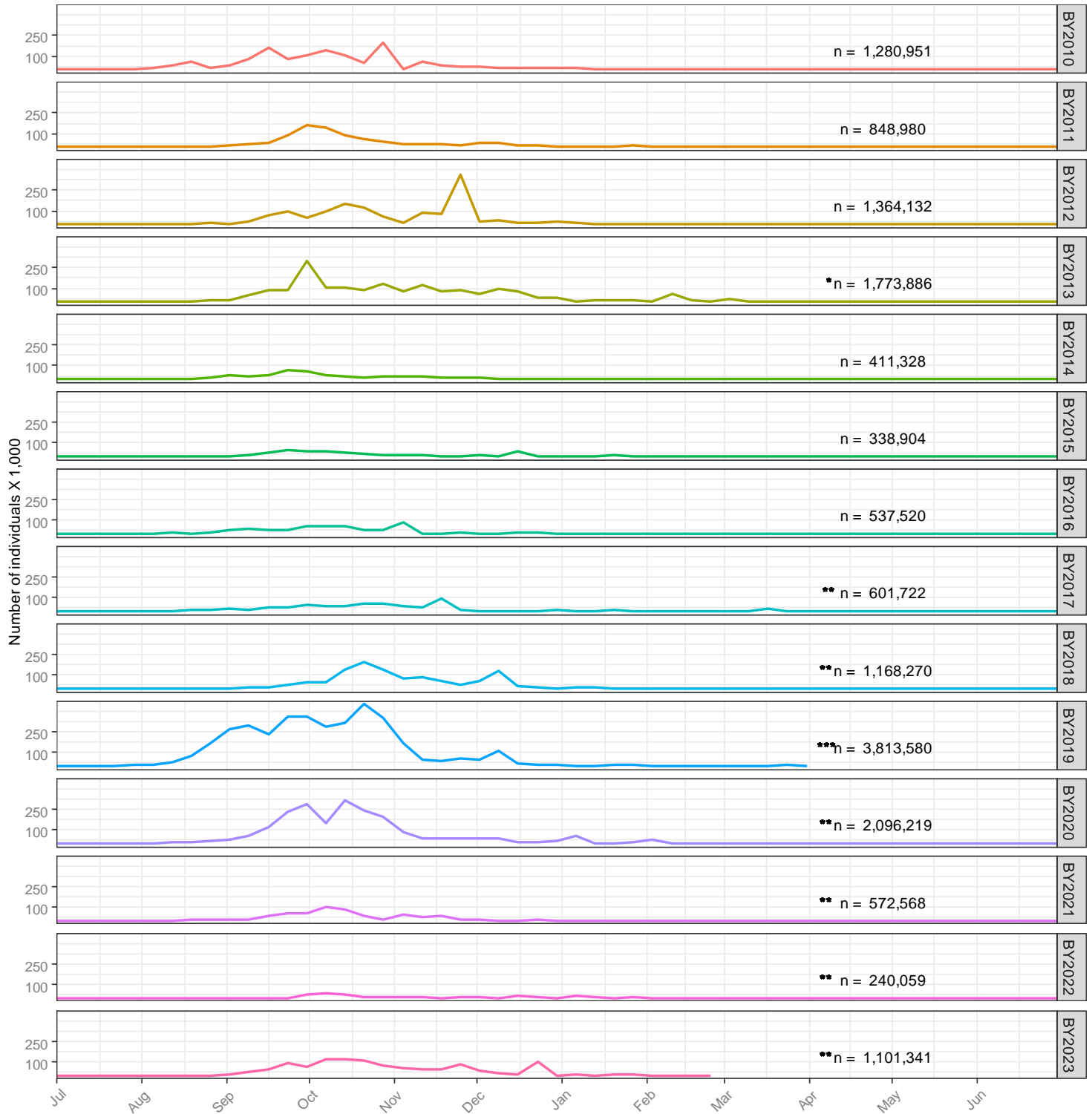


Figure 1. Weekly estimated passage of unmarked juvenile winter Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period July 1, 2010 to present .

*Winter Chinook passage value interpolated using a monthly mean for the period October 1, 2013 - October 17, 2013 due to government shutdown .

**Winter Chinook passage value reflects addition of length-at-date spring Chinook determined to be winter Chinook from genetic analysis during brood years 2017 thru 2022 .

***Rotary-trapping/juvenile fish monitoring operations at the Red Bluff Diversion Dam were suspended March 25, 2020 to June 30, 2020, to protect employee health and safety resulting from COVID-19 global pandemic .

Juvenile Spring Chinook Salmon Estimated Passage

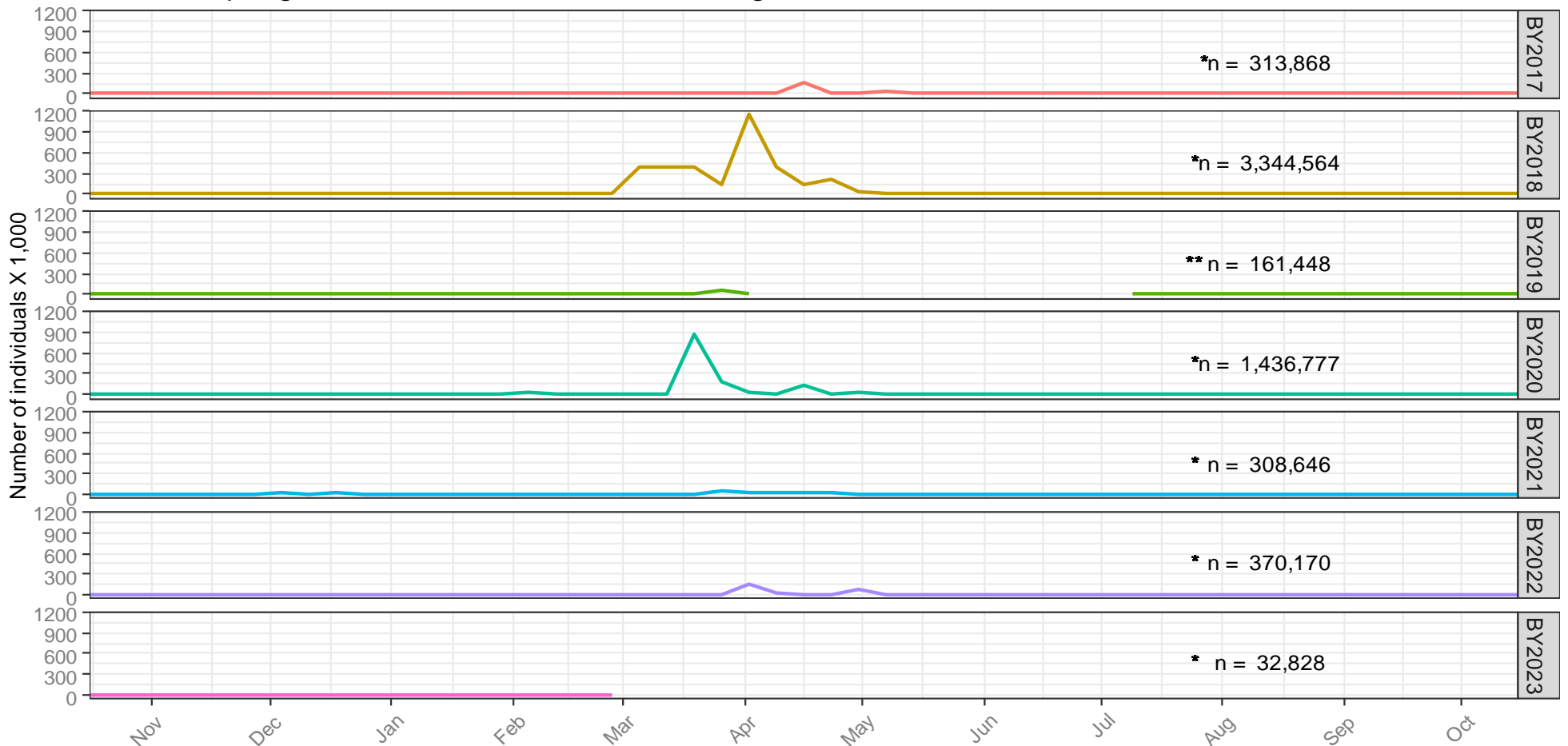


Figure 2. Weekly estimated passage of unmarked juvenile spring Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period October 16, 2017 to present .

*Spring Chinook passage value reflects subtraction of length-at-date spring Chinook determined to be winter Chinook from genetic analyses during brood years 2017 thru 2023. See memos on biweekly report website for more info .

**Rotary-trapping/juvenile fish monitoring operations at the Red Bluff Diversion Dam were suspended from March 25, 2020 to June 30, 2020, to protect employee health and safety resulting from the Coronavirus/COVID-19 global pandemic .

Juvenile *Onchorhynchus mykiss* Estimated Passage

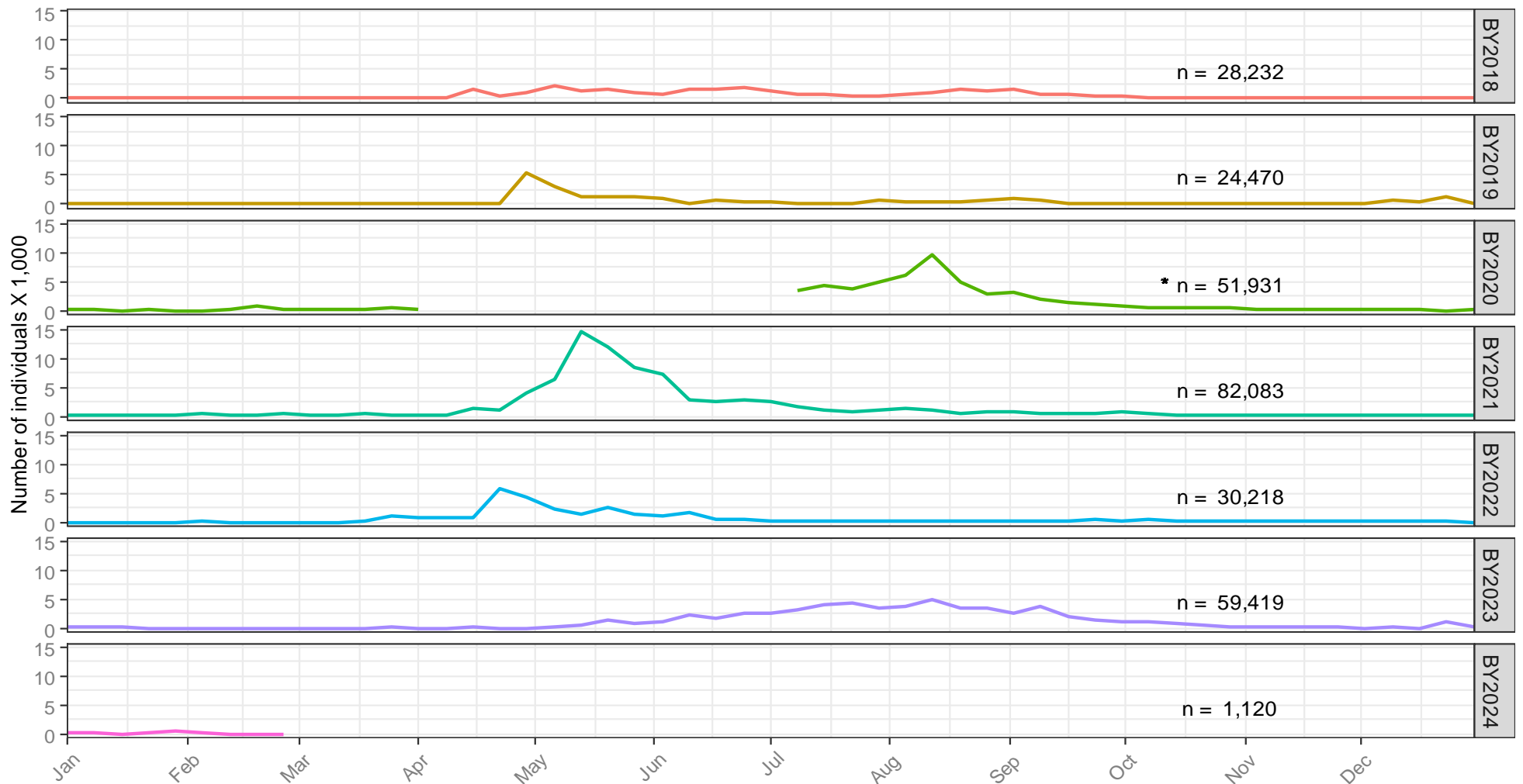


Figure 3. Weekly estimated passage of unmarked juvenile Rainbow/Steelhead trout at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period January 1, 2018 to present .

*Rotary-trapping/juvenile fish monitoring operations at the Red Bluff Diversion Dam were suspended from March 25, 2020 to June 30, 2020, to protect employee health and safety resulting from the Coronavirus/COVID-19 global pandemic .

Juvenile Fall Chinook Salmon Estimated Passage

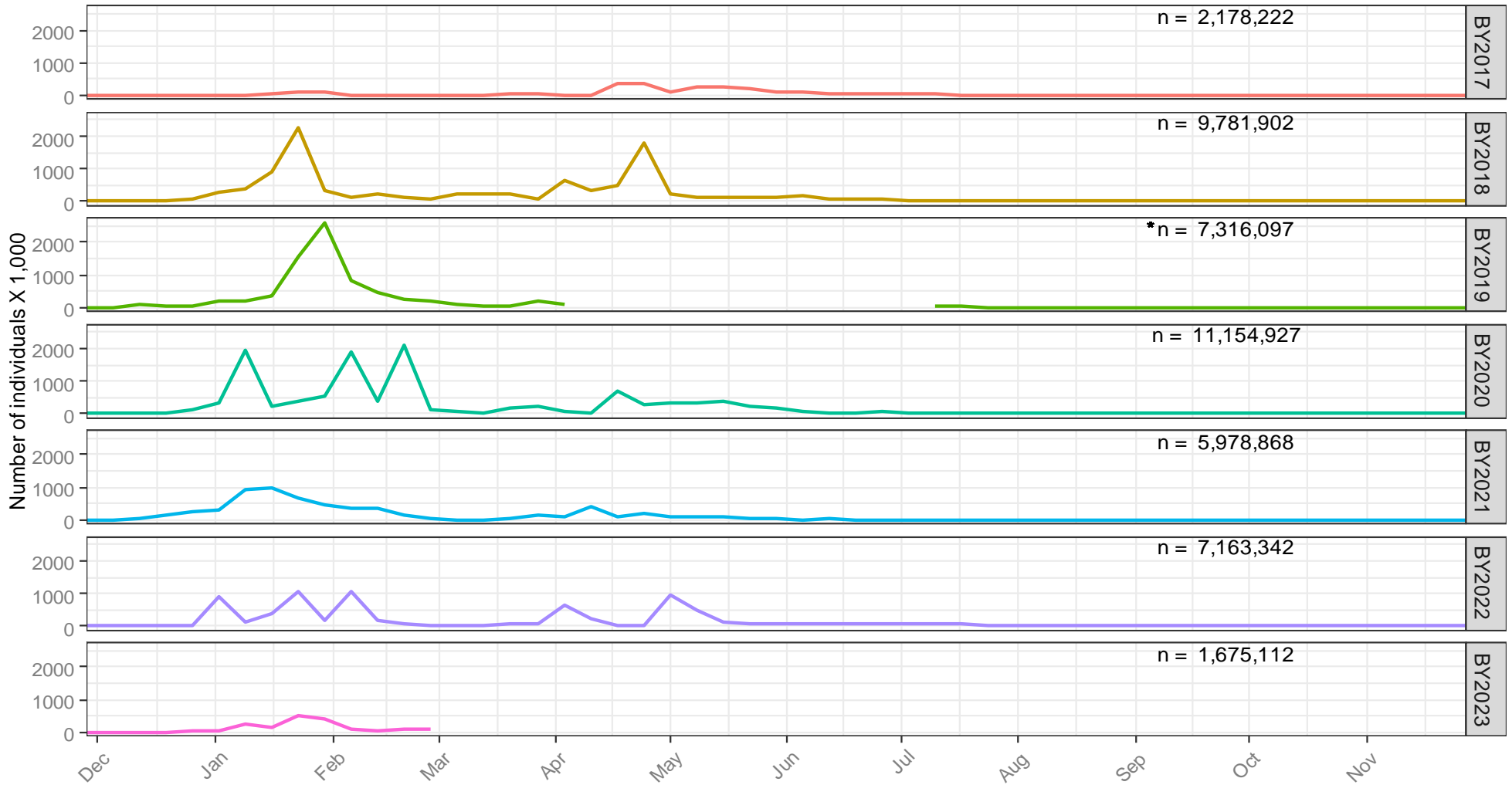


Figure 4. Weekly estimated passage of unmarked juvenile fall Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period December 1, 2017 to present .

*Rotary-trapping/juvenile fish monitoring operations at the Red Bluff Diversion Dam were suspended from March 25, 2020 to June 30, 2020, to protect employee health and safety resulting from the Coronavirus/COVID-19 global pandemic .

Juvenile Late Fall Chinook Salmon Estimated Passage

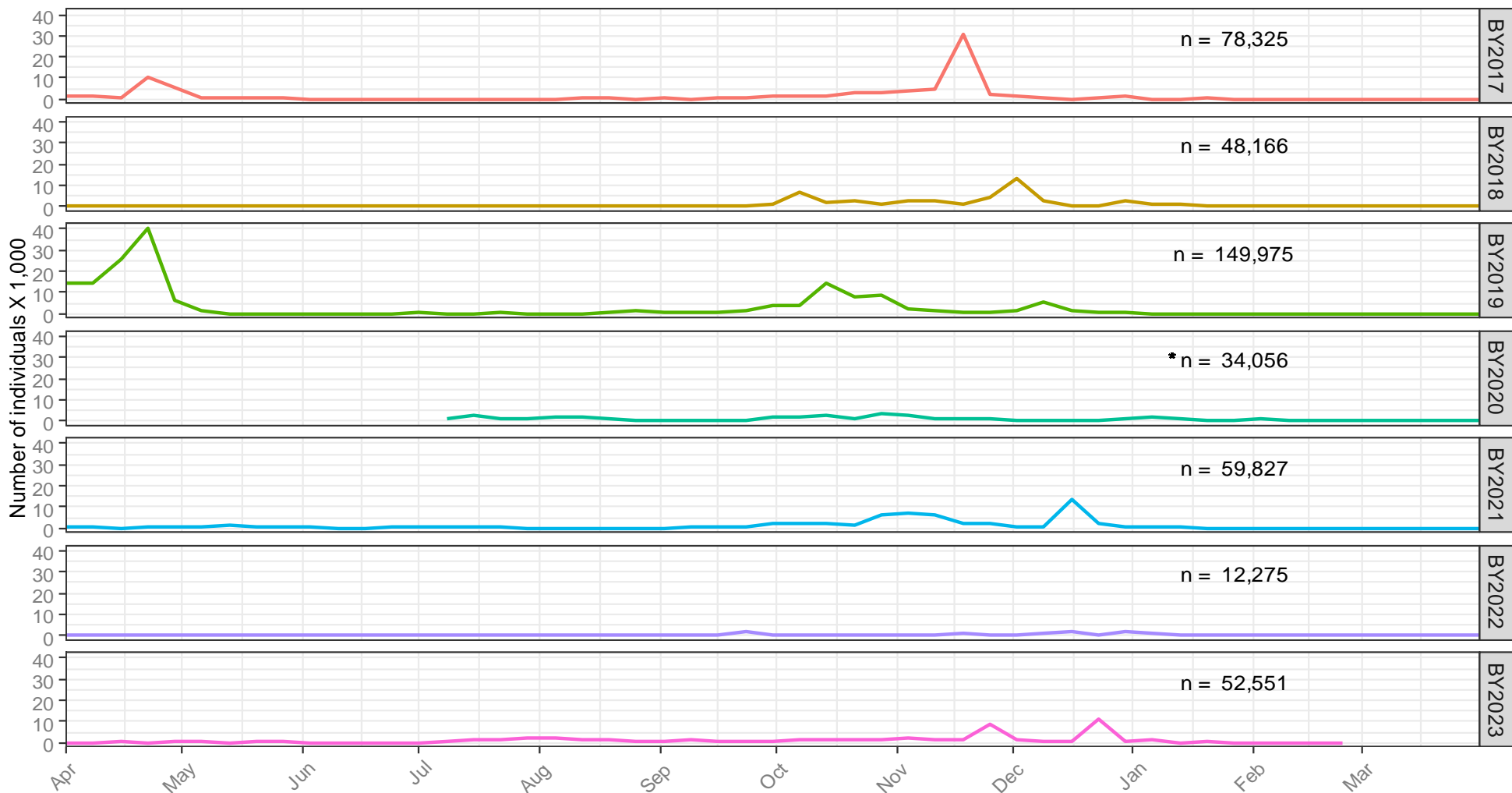


Figure 5. Weekly estimated passage of unmarked juvenile late fall Chinook salmon at Red Bluff Diversion Dam (RK391) by brood-year (BY). Fish were sampled using rotary-screw traps for the period April 1, 2017 to present .

*Rotary-trapping/juvenile fish monitoring operations at the Red Bluff Diversion Dam were suspended from March 25, 2020 to June 30, 2020, to protect employee health and safety resulting from the Coronavirus/COVID-19 global pandemic .

Weekly Estimated Chinook Passage at Red Bluff Diversion Dam - All Runs Combined

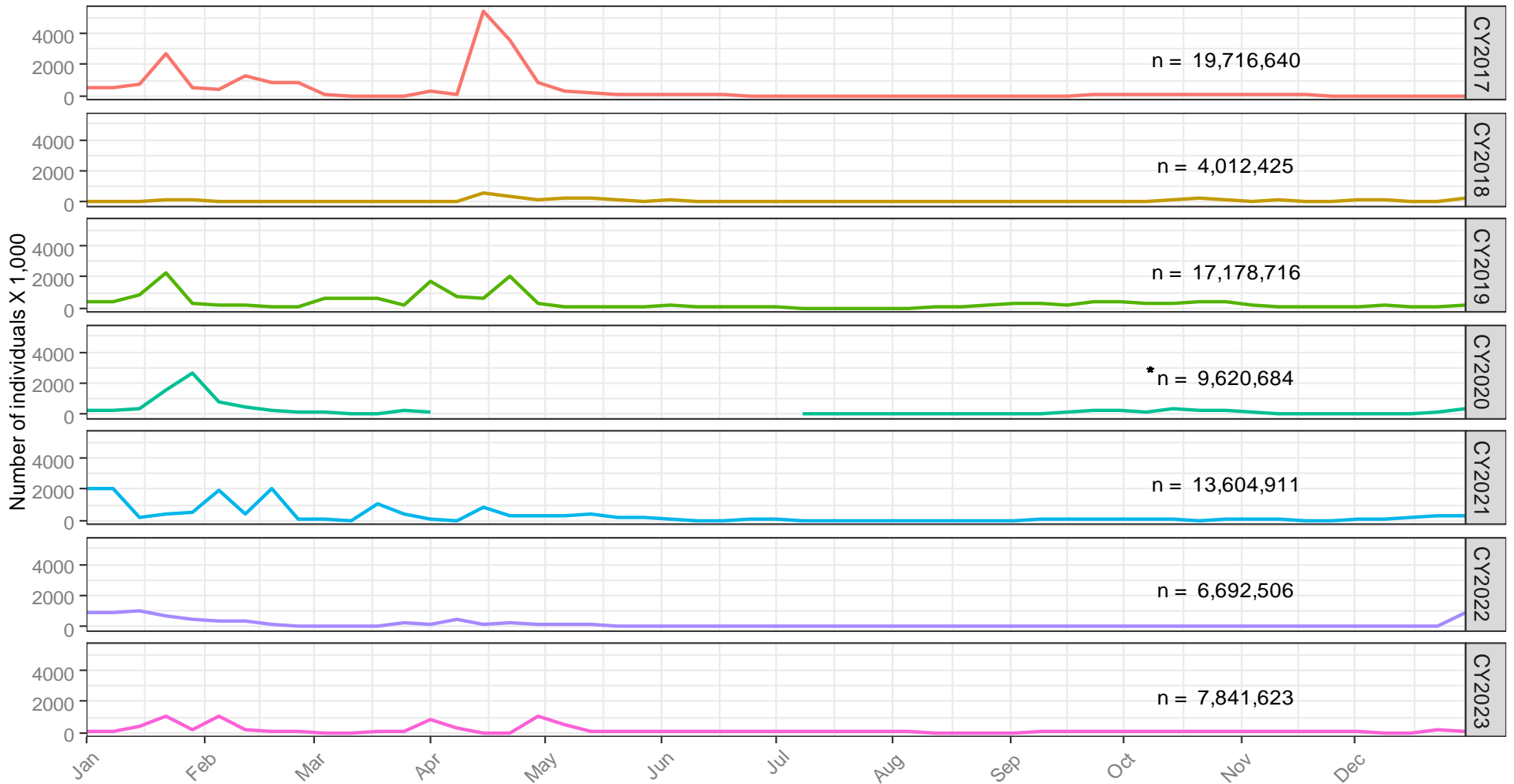


Figure 6. Weekly estimated passage of unmarked juvenile Chinook salmon at Red Bluff Diversion Dam (RK391) by calendar year. Fish were sampled using rotary-screw traps for the period January 1, 2017 to December 31, 2023 .

*Rotary-trapping/juvenile fish monitoring operations at the Red Bluff Diversion Dam were suspended from March 25, 2020 to June 30, 2020, to protect employee health and safety resulting from the Coronavirus/COVID-19 global pandemic .