

Supplementary Material 3

Gibbons et al. surveyed tributary streams of several Puget Sound and Olympic Peninsula steelhead rivers and estimated parr numbers by conducting electrofishing removals in selected stream reaches. Data for sampled tributaries was reported only as parr per square meter (Gibbons et al. 1985, Table 1), so we were not able to further compare Gibbons et al.'s rearing density estimates for tributaries to ours. Several large rivers were sampled and parr counted by snorkeling. The snorkel count data was reported in Table 3 of Gibbons et al. 1985 and included the lengths, widths, and total area of sampled reaches in addition to the total number of steelhead parr counted. The total length of rivers reaches sampled ranged from 400 to 1100 meters. Parr densities were determined by dividing the total parr counts by the calculated total area of the sampled reaches.

We compared our model-based estimates of parr densities to Gibbons et al.'s estimates for mainstem river reaches by translating their estimates to parr-per-square meters mainstem rearing habitat area as defined in our approach, after first excluding two river reaches discarded by Gibbons et al. as being from under-seeded habitats and one whose width was less than 8 meters. We calculated the adjusted total rearing areas of each reach from total reach lengths of the 15 remaining river reaches by multiplying total length by 4, 6, and 8 meters as we did for our estimates of historically available mainstem rearing habitat area. These adjusted areas represent the rearing habitat area that would have been estimated by Gibbons et al. if the only habitat information they had were the reach lengths and they estimated rearing habitat area from these lengths following the approach we used to estimate historical rearing habitat area. We then divided the total parr counts reported for each mainstem reach by the three estimated rearing habitat areas to rescale

Gibbon's et al.'s parr densities to the approach we employed to estimate mainstem rearing area.

Table S4. Mainstem steelhead parr rearing densities re-scaled to shallow shoreline widths of 2, 3, and 4 meters each bank. SH Parr = steelhead parr. BW_x= total nearshore bank width (4, 6, or 8 meters). Densities BW_x = Parr/square meter at BW_x.

River	Total L (m)	SH Parr	BW =4	Densities BW4	BW = 6	Densities BW6	BW =8	Densities BW8
Bogachiel 1	751	466	3004	0.155	4506	0.103	6008	0.078
Bogachiel 2	517	344	2068	0.166	3102	0.111	4136	0.083
Sol Duc 1	596	497	2384	0.208	3576	0.139	4768	0.104
Sol Duc 2	546	1217	2184	0.557	3276	0.371	4368	0.279
Sol Duc 3	905	468	3620	0.129	5430	0.086	7240	0.065
Sol Duc 4	739	551	2956	0.186	4434	0.124	5912	0.093
W.F.	1011	308	4044	0.076	6066	0.051	8088	0.038
Humptulips								
Humptulips	1142	197	4568	0.043	6852	0.029	9136	0.022
E.F. Satsop	818	349	3272	0.107	4908	0.071	6544	0.053
S. F. Priarie Cr.	838	375	3352	0.112	5028	0.075	6704	0.056
Green 1	425	512	1700	0.301	2550	0.201	3400	0.151
Green 2	659	520	2636	0.197	3954	0.132	5272	0.099
Green 3	837	259	3348	0.077	5022	0.052	6696	0.039
Tolt	577	432	2308	0.187	3462	0.125	4616	0.094
Snoqualmie	624	212	2496	0.085	3744	0.057	4992	0.042