

**Spawning Capacity, NREDDS (redds/100 m<sup>2</sup>)**  
**Look-Up Table**

D50 (mm)	L (mm)	DT (mm)	A (m <sup>2</sup> )	D84 (mm)																								
				40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500	
20	100	38	0.06	1424	1255	1181	1140	1114	1094	1080	1069	1060	1052	1045	1040	1035	1030	1027	1023	1020	1017	1014	1012	1010	1008	1006	1004	
20	200	58	0.28	334.6	301.3	282.7	271.2	263.4	257.7	253.2	249.7	246.8	244.4	242.3	240.5	238.9	237.5	236.3	235.1	234.1	233.1	232.3	231.5	230.7	230.1	229.4	228.8	
20	300	75	0.70	138.1	127.1	119.8	115.0	111.6	109.1	107.1	105.5	104.2	103.1	102.1	101.3	100.6	99.9	99.3	98.8	98.3	97.9	97.5	97.1	96.7	96.4	96.1	95.8	
20	400	89	1.33	73.1	68.2	64.6	62.1	60.3	59.0	57.9	57.0	56.3	55.7	55.1	54.7	54.2	53.9	53.5	53.2	53.0	52.7	52.5	52.3	52.1	51.9	51.7	51.5	
20	500	102	2.21	44.4	41.9	39.9	38.4	37.3	36.5	35.8	35.3	34.8	34.4	34.1	33.8	33.5	33.3	33.1	32.9	32.7	32.6	32.4	32.3	32.2	32.0	31.9	31.8	
20	600	115	3.34	29.6	28.1	26.8	25.9	25.2	24.6	24.2	23.8	23.5	23.2	23.0	22.8	22.6	22.5	22.3	22.2	22.1	22.0	21.9	21.8	21.7	21.6	21.5	21.4	
20	700	126	4.73	20.9	20.0	19.2	18.5	18.0	17.6	17.3	17.1	16.8	16.6	16.5	16.3	16.2	16.1	16.0	15.9	15.8	15.7	15.6	15.6	15.5	15.5	15.4	15.3	
20	800	137	6.39	15.5	14.9	14.3	13.8	13.5	13.2	13.0	12.8	12.6	12.5	12.3	12.2	12.1	12.0	12.0	11.9	11.8	11.8	11.7	11.7	11.6	11.6	11.5	11.5	
20	900	147	8.34	11.9	11.5	11.0	10.7	10.4	10.2	10.0	9.9	9.8	9.6	9.6	9.5	9.4	9.3	9.3	9.2	9.2	9.1	9.1	9.0	9.0	9.0	8.9	8.9	
20	1000	157	10.59	9.4	9.1	8.7	8.5	8.3	8.1	8.0	7.9	7.8	7.7	7.6	7.5	7.5	7.4	7.4	7.3	7.3	7.2	7.2	7.2	7.1	7.1	7.1	7.1	
20	1100	166	13.13	7.6	7.3	7.1	6.9	6.7	6.6	6.5	6.4	6.3	6.2	6.2	6.1	6.1	6.0	6.0	5.9	5.9	5.9	5.9	5.8	5.8	5.8	5.8	5.7	
40	100	38	0.06	-	766.7	805.1	818.3	825.1	829.3	832.2	834.4	836.0	837.3	838.4	839.3	840.1	840.7	841.3	841.8	842.3	842.7	843.1	843.4	843.7	844.0	844.3	844.5	
40	200	58	0.28	-	297.3	256.7	239.6	230.2	224.2	220.1	217.0	214.6	212.7	211.1	209.8	208.6	207.6	206.8	206.0	205.3	204.7	204.2	203.7	203.2	202.8	202.4	202.0	
40	300	75	0.70	-	133.8	118.1	109.3	104.0	100.5	98.0	96.1	94.7	93.5	92.5	91.6	90.9	90.3	89.7	89.2	88.8	88.4	88.1	87.7	87.4	87.2	86.9	86.7	
40	400	89	1.33	-	72.4	65.8	61.1	58.1	56.1	54.5	53.4	52.5	51.7	51.1	50.5	50.1	49.7	49.3	49.0	48.7	48.5	48.3	48.0	47.8	47.7	47.5	47.3	
40	500	102	2.21	-	44.4	41.2	38.5	36.7	35.4	34.4	33.6	33.0	32.5	32.1	31.7	31.4	31.2	30.9	30.7	30.5	30.3	30.2	30.0	29.9	29.8	29.7	29.6	
40	600	115	3.34	-	29.6	27.9	26.2	25.1	24.2	23.5	23.0	22.6	22.2	21.9	21.6	21.4	21.2	21.1	20.9	20.8	20.6	20.5	20.4	20.3	20.2	20.2	20.1	
40	700	126	4.73	-	21.0	20.0	18.9	18.1	17.5	17.0	16.6	16.3	16.0	15.8	15.6	15.5	15.3	15.2	15.1	15.0	14.9	14.8	14.7	14.7	14.6	14.5	14.5	
40	800	137	6.39	-	15.6	14.9	14.2	13.6	13.2	12.8	12.5	12.3	12.1	11.9	11.8	11.7	11.6	11.5	11.4	11.3	11.2	11.1	11.1	11.0	11.0	10.9	10.9	
40	900	147	8.34	-	11.9	11.5	11.0	10.6	10.2	10.0	9.8	9.6	9.4	9.3	9.2	9.1	9.0	8.9	8.8	8.8	8.7	8.7	8.6	8.6	8.5	8.5	8.5	
40	1000	157	10.59	-	9.4	9.1	8.8	8.4	8.2	8.0	7.8	7.6	7.5	7.4	7.3	7.3	7.2	7.1	7.1	7.0	7.0	6.9	6.9	6.8	6.8	6.8	6.8	
40	1100	166	13.13	-	7.6	7.4	7.1	6.9	6.7	6.5	6.4	6.2	6.1	6.1	6.0	5.9	5.9	5.8	5.8	5.7	5.7	5.6	5.6	5.6	5.6	5.5	5.5	
60	100	38	0.06	-	-	107.8	307.7	422.1	490.5	535.4	567.3	591.1	609.6	624.4	636.7	646.9	655.7	663.3	669.9	675.8	681.0	685.7	689.9	693.8	697.3	700.6	703.5	
60	200	58	0.28	-	-	163.5	170.4	172.8	174.0	174.7	175.2	175.6	175.9	176.1	176.3	176.4	176.6	176.7	176.8	176.9	176.9	177.0	177.1	177.1	177.2	177.2	177.3	
60	300	75	0.70	-	-	112.8	96.9	90.7	87.3	85.3	83.9	82.8	82.0	81.4	80.9	80.4	80.1	79.7	79.5	79.2	79.0	78.8	78.6	78.5	78.3	78.2	78.1	
60	400	89	1.33	-	-	68.4	59.1	54.4	51.6	49.9	48.6	47.7	47.0	46.4	45.9	45.5	45.2	44.9	44.7	44.4	44.2	44.1	43.9	43.7	43.6	43.5	43.4	
60	500	102	2.21	-	-	43.4	38.7	35.6	33.7	32.4	31.5	30.8	30.2	29.8	29.4	29.1	28.8	28.6	28.4	28.2	28.1	27.9	27.8	27.7	27.6	27.5	27.4	
60	600	115	3.34	-	-	29.3	26.9	24.9	23.5	22.6	21.9	21.4	21.0	20.6	20.4	20.1	19.9	19.7	19.6	19.4	19.3	19.2	19.1	19.0	18.9	18.9	18.8	
60	700	126	4.73	-	-	20.9	19.5	18.2	17.3	16.6	16.1	15.7	15.3	15.1	14.9	14.7	14.5	14.4	14.3	14.2	14.1	14.0	13.9	13.8	13.8	13.7	13.6	
60	800	137	6.39	-	-	15.5	14.7	13.8	13.1	12.6	12.2	11.9	11.7	11.5	11.3	11.2	11.0	10.9	10.8	10.7	10.7	10.6	10.5	10.5	10.4	10.4	10.3	
60	900	147	8.34	-	-	11.9	11.4	10.8	10.3	9.9	9.6	9.4	9.2	9.0	8.9	8.7	8.6	8.5	8.5	8.4	8.3	8.3	8.2	8.2	8.1	8.1	8.1	
60	1000	157	10.59	-	-	9.4	9.1	8.6	8.2	7.9	7.7	7.5	7.4	7.2	7.1	7.0	6.9	6.9	6.8	6.7	6.7	6.6	6.6	6.6	6.5	6.5	6.5	
60	1100	166	13.13	-	-	7.6	7.4	7.0	6.7	6.5	6.3	6.2	6.0	5.9	5.8	5.8	5.7	5.6	5.6	5.5	5.5	5.4	5.4	5.4	5.3	5.3	5.3	

Notes: D50 and D84 are the median and 84th percentile grain diameters; L is fish length; DT is the threshold particle size, based on Eq. (1); A is redd area, inferred from Eq. (6)

**Spawning Capacity, NREDDS (redds/100 m<sup>2</sup>)**  
**Look-Up Table**

D50 (mm)	L (mm)	DT (mm)	A (m <sup>2</sup> )	D84 (mm)																								
				40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500	
80	100	38	0.06	-	-	-	5.8	72.3	161.7	237.9	297.7	344.6	381.9	412.2	437.2	458.3	476.3	491.8	505.4	517.3	528.0	537.5	546.1	553.9	561.0	567.5	573.5	
80	200	58	0.28	-	-	-	29.2	74.8	98.9	112.8	121.7	127.9	132.6	136.1	139.0	141.3	143.2	144.9	146.3	147.5	148.6	149.6	150.4	151.2	151.9	152.5	153.1	
80	300	75	0.70	-	-	-	53.5	61.6	64.4	65.8	66.6	67.2	67.7	68.0	68.2	68.4	68.6	68.8	68.9	69.0	69.1	69.2	69.3	69.3	69.4	69.4	69.5	
80	400	89	1.33	-	-	-	52.2	45.9	43.6	42.4	41.7	41.2	40.9	40.6	40.4	40.2	40.1	40.0	39.9	39.8	39.7	39.6	39.6	39.5	39.4	39.4	39.4	
80	500	102	2.21	-	-	-	39.3	33.4	30.7	29.3	28.3	27.7	27.2	26.9	26.6	26.4	26.2	26.0	25.9	25.8	25.7	25.6	25.5	25.4	25.3	25.3	25.2	
80	600	115	3.34	-	-	-	28.1	24.5	22.4	21.2	20.4	19.8	19.4	19.0	18.8	18.6	18.4	18.2	18.1	18.0	17.9	17.8	17.7	17.6	17.6	17.5	17.5	
80	700	126	4.73	-	-	-	20.5	18.4	16.9	15.9	15.3	14.8	14.4	14.1	13.9	13.7	13.6	13.4	13.3	13.2	13.1	13.1	13.0	12.9	12.9	12.8	12.8	
80	800	137	6.39	-	-	-	15.4	14.1	13.1	12.3	11.8	11.4	11.1	10.9	10.7	10.5	10.4	10.3	10.2	10.1	10.0	10.0	9.9	9.9	9.8	9.8	9.7	
80	900	147	8.34	-	-	-	11.9	11.1	10.4	9.8	9.4	9.1	8.8	8.6	8.5	8.3	8.2	8.1	8.1	8.0	7.9	7.9	7.8	7.8	7.7	7.7	7.6	
80	1000	157	10.59	-	-	-	9.4	8.9	8.4	7.9	7.6	7.3	7.1	7.0	6.9	6.7	6.7	6.6	6.5	6.4	6.4	6.3	6.3	6.3	6.2	6.2	6.2	
80	1100	166	13.13	-	-	-	7.6	7.3	6.9	6.5	6.3	6.1	5.9	5.8	5.7	5.6	5.5	5.4	5.4	5.3	5.3	5.2	5.2	5.1	5.1	5.1	5.1	
100	100	38	0.06	-	-	-	-	0.2	12.8	50.1	98.3	146.1	189.3	227.2	260.2	288.8	313.7	335.6	355.0	372.2	387.6	401.5	414.0	425.5	435.9	445.5	454.4	
100	200	58	0.28	-	-	-	-	2.3	21.8	44.3	62.0	75.2	85.1	92.9	99.1	104.2	108.4	111.9	114.9	117.6	119.9	121.9	123.8	125.4	126.9	128.2	129.5	
100	300	75	0.70	-	-	-	-	8.9	26.8	37.1	43.2	47.1	49.9	52.0	53.6	54.8	55.8	56.7	57.4	58.1	58.6	59.1	59.5	59.9	60.2	60.5	60.8	
100	400	89	1.33	-	-	-	-	19.2	26.9	29.8	31.3	32.2	32.9	33.3	33.7	33.9	34.2	34.3	34.5	34.6	34.7	34.8	34.9	35.0	35.1	35.1	35.2	
100	500	102	2.21	-	-	-	-	25.1	24.0	23.6	23.4	23.3	23.2	23.1	23.1	23.1	23.0	23.0	23.0	23.0	23.0	22.9	22.9	22.9	22.9	22.9	22.9	
100	600	115	3.34	-	-	-	-	23.4	19.9	18.6	17.9	17.5	17.2	16.9	16.8	16.7	16.6	16.5	16.4	16.3	16.3	16.2	16.2	16.1	16.1	16.1	16.1	
100	700	126	4.73	-	-	-	-	18.9	16.1	14.8	14.0	13.5	13.2	12.9	12.7	12.6	12.4	12.3	12.3	12.2	12.1	12.1	12.0	12.0	11.9	11.9	11.9	
100	800	137	6.39	-	-	-	-	14.8	13.0	11.8	11.1	10.7	10.4	10.1	9.9	9.8	9.7	9.6	9.5	9.4	9.4	9.3	9.3	9.2	9.2	9.1	9.1	
100	900	147	8.34	-	-	-	-	11.7	10.5	9.6	9.0	8.6	8.4	8.1	8.0	7.8	7.7	7.6	7.6	7.5	7.4	7.4	7.3	7.3	7.3	7.2	7.2	
100	1000	157	10.59	-	-	-	-	9.3	8.6	7.9	7.4	7.1	6.9	6.7	6.5	6.4	6.3	6.2	6.2	6.1	6.0	6.0	6.0	5.9	5.9	5.9	5.8	
100	1100	166	13.13	-	-	-	-	7.6	7.1	6.6	6.2	5.9	5.7	5.6	5.4	5.3	5.2	5.2	5.1	5.0	5.0	5.0	4.9	4.9	4.9	4.8	4.8	
120	100	38	0.06	-	-	-	-	0.0	1.9	13.6	36.4	65.4	96.3	126.6	155.1	181.5	205.6	227.6	247.6	265.9	282.6	297.8	311.9	324.8	336.7	347.8		
120	200	58	0.28	-	-	-	-	0.1	4.9	16.4	29.6	41.6	52.0	60.7	68.0	74.3	79.6	84.2	88.2	91.8	94.9	97.7	100.3	102.5	104.6	106.5		
120	300	75	0.70	-	-	-	-	0.8	8.2	17.3	24.6	30.0	34.2	37.4	40.0	42.1	43.8	45.3	46.6	47.7	48.6	49.4	50.2	50.9	51.5	52.0		
120	400	89	1.33	-	-	-	-	2.7	11.1	16.8	20.3	22.7	24.4	25.7	26.6	27.4	28.0	28.6	29.0	29.4	29.7	30.0	30.3	30.5	30.7	30.9		
120	500	102	2.21	-	-	-	-	6.7	12.7	15.3	16.8	17.7	18.3	18.7	19.0	19.3	19.5	19.7	19.9	20.0	20.1	20.2	20.3	20.4	20.4	20.5		
120	600	115	3.34	-	-	-	-	11.2	12.9	13.5	13.8	14.0	14.1	14.2	14.3	14.3	14.4	14.4	14.4	14.5	14.5	14.5	14.5	14.5	14.6	14.6		
120	700	126	4.73	-	-	-	-	13.3	12.1	11.6	11.4	11.3	11.2	11.1	11.1	11.0	11.0	11.0	11.0	11.0	11.0	10.9	10.9	10.9	10.9	10.9		
120	800	137	6.39	-	-	-	-	12.6	10.7	9.9	9.5	9.2	9.1	8.9	8.8	8.8	8.7	8.7	8.6	8.6	8.5	8.5	8.5	8.5	8.4	8.4		
120	900	147	8.34	-	-	-	-	10.8	9.2	8.4	7.9	7.7	7.5	7.3	7.2	7.1	7.0	7.0	6.9	6.9	6.8	6.8	6.8	6.8	6.7	6.7		
120	1000	157	10.59	-	-	-	-	9.0	7.8	7.1	6.7	6.4	6.2	6.1	6.0	5.9	5.8	5.7	5.7	5.6	5.6	5.6	5.5	5.5	5.5	5.5		
120	1100	166	13.13	-	-	-	-	7.4	6.7	6.1	5.7	5.4	5.3	5.1	5.0	4.9	4.9	4.8	4.8	4.7	4.7	4.6	4.6	4.6	4.6	4.6	4.5	

Notes: D50 and D84 are the median and 84th percentile grain diameters; L is fish length; DT is the threshold particle size, based on Eq. (1); A is redd area, inferred from Eq. (6)

**Spawning Capacity, NREDDS (redds/100 m<sup>2</sup>)**  
**Look-Up Table**

D50 (mm)	L (mm)	DT (mm)	A (m <sup>2</sup> )	D84 (mm)																							
				40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500
140	100	38	0.06	-	-	-	-	-	-	0.0	0.3	3.4	12.6	27.5	46.3	67.1	88.6	109.7	130.2	149.6	167.9	185.1	201.2	216.2	230.3	243.5	255.8
140	200	58	0.28	-	-	-	-	-	-	0.0	0.9	5.4	12.7	21.1	29.5	37.3	44.3	50.6	56.2	61.2	65.7	69.7	73.3	76.6	79.6	82.3	84.8
140	300	75	0.70	-	-	-	-	-	-	0.0	2.0	6.8	12.3	17.4	21.7	25.3	28.4	30.9	33.1	35.0	36.7	38.1	39.4	40.5	41.5	42.5	43.3
140	400	89	1.33	-	-	-	-	-	-	0.2	3.4	7.8	11.6	14.6	16.8	18.6	20.1	21.2	22.2	23.0	23.7	24.4	24.9	25.4	25.8	26.2	26.5
140	500	102	2.21	-	-	-	-	-	-	0.8	4.8	8.3	10.6	12.3	13.4	14.3	15.0	15.6	16.0	16.4	16.7	17.0	17.2	17.5	17.6	17.8	18.0
140	600	115	3.34	-	-	-	-	-	-	2.2	6.1	8.3	9.6	10.4	10.9	11.4	11.7	11.9	12.1	12.3	12.4	12.6	12.7	12.8	12.8	12.9	13.0
140	700	126	4.73	-	-	-	-	-	-	4.4	6.9	8.0	8.5	8.8	9.0	9.2	9.3	9.4	9.5	9.6	9.6	9.7	9.7	9.7	9.8	9.8	9.8
140	800	137	6.39	-	-	-	-	-	-	6.7	7.2	7.4	7.5	7.5	7.6	7.6	7.6	7.6	7.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
140	900	147	8.34	-	-	-	-	-	-	7.8	7.0	6.7	6.5	6.5	6.4	6.4	6.3	6.3	6.3	6.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2
140	1000	157	10.59	-	-	-	-	-	-	7.7	6.5	6.0	5.7	5.6	5.5	5.4	5.3	5.3	5.2	5.2	5.2	5.2	5.1	5.1	5.1	5.1	5.1
140	1100	166	13.13	-	-	-	-	-	-	6.9	5.8	5.3	5.0	4.8	4.7	4.6	4.5	4.5	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.3	4.2
160	100	38	0.06	-	-	-	-	-	-	0.0	0.0	0.8	4.1	11.0	21.4	34.3	48.9	64.4	80.1	95.9	111.2	126.1	140.5	154.2	167.2	179.7	
160	200	58	0.28	-	-	-	-	-	-	0.0	0.2	1.6	5.1	10.1	15.8	21.8	27.7	33.2	38.4	43.2	47.6	51.7	55.4	58.8	62.0	64.9	
160	300	75	0.70	-	-	-	-	-	-	0.0	0.4	2.4	5.6	9.3	12.9	16.2	19.2	21.8	24.2	26.2	28.1	29.7	31.2	32.5	33.8	34.9	
160	400	89	1.33	-	-	-	-	-	-	0.0	0.9	3.2	5.9	8.6	10.8	12.8	14.4	15.8	17.0	18.0	18.9	19.7	20.4	21.0	21.6	22.1	
160	500	102	2.21	-	-	-	-	-	-	0.1	1.5	3.8	6.0	7.8	9.3	10.4	11.3	12.1	12.7	13.3	13.7	14.1	14.5	14.8	15.1	15.3	
160	600	115	3.34	-	-	-	-	-	-	0.2	2.2	4.3	5.9	7.1	8.0	8.6	9.2	9.6	9.9	10.2	10.5	10.7	10.9	11.0	11.2	11.3	
160	700	126	4.73	-	-	-	-	-	-	0.6	2.9	4.6	5.7	6.4	6.9	7.3	7.6	7.8	8.0	8.1	8.3	8.4	8.5	8.6	8.6	8.7	
160	800	137	6.39	-	-	-	-	-	-	1.5	3.6	4.7	5.3	5.7	6.0	6.2	6.3	6.4	6.5	6.6	6.7	6.7	6.8	6.8	6.9	6.9	
160	900	147	8.34	-	-	-	-	-	-	2.7	4.1	4.7	4.9	5.1	5.2	5.3	5.4	5.4	5.5	5.5	5.5	5.5	5.6	5.6	5.6	5.6	
160	1000	157	10.59	-	-	-	-	-	-	4.1	4.4	4.5	4.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.7	4.7
160	1100	166	13.13	-	-	-	-	-	-	4.9	4.4	4.2	4.1	4.1	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.9	3.9	3.9	3.9	3.9	3.9
180	100	38	0.06	-	-	-	-	-	-	0.0	0.0	0.2	1.3	4.3	9.6	17.1	26.3	36.9	48.3	60.2	72.3	84.5	96.5	108.3	119.8		
180	200	58	0.28	-	-	-	-	-	-	0.0	0.0	0.5	1.9	4.6	8.2	12.3	16.7	21.1	25.5	29.7	33.7	37.5	41.0	44.4	47.5		
180	300	75	0.70	-	-	-	-	-	-	0.0	0.1	0.8	2.4	4.7	7.3	9.9	12.5	14.9	17.1	19.1	21.0	22.7	24.2	25.6	27.0		
180	400	89	1.33	-	-	-	-	-	-	0.0	0.2	1.2	2.8	4.7	6.6	8.3	9.9	11.3	12.6	13.7	14.7	15.6	16.4	17.1	17.8		
180	500	102	2.21	-	-	-	-	-	-	0.0	0.4	1.5	3.1	4.6	6.0	7.2	8.2	9.1	9.8	10.4	11.0	11.5	12.0	12.4	12.7		
180	600	115	3.34	-	-	-	-	-	-	0.0	0.6	1.9	3.3	4.5	5.4	6.2	6.9	7.4	7.9	8.3	8.6	8.9	9.2	9.4	9.6		
180	700	126	4.73	-	-	-	-	-	-	0.1	1.0	2.3	3.4	4.3	4.9	5.5	5.9	6.2	6.5	6.7	6.9	7.1	7.3	7.4	7.5		
180	800	137	6.39	-	-	-	-	-	-	0.2	1.4	2.6	3.4	4.0	4.5	4.8	5.1	5.3	5.4	5.6	5.7	5.8	5.9	6.0	6.1		
180	900	147	8.34	-	-	-	-	-	-	0.4	1.8	2.8	3.4	3.8	4.0	4.3	4.4	4.5	4.6	4.7	4.8	4.9	4.9	5.0	5.0		
180	1000	157	10.59	-	-	-	-	-	-	0.9	2.2	2.9	3.3	3.5	3.7	3.8	3.9	3.9	4.0	4.0	4.1	4.1	4.1	4.2	4.2		
180	1100	166	13.13	-	-	-	-	-	-	1.7	2.6	2.9	3.1	3.2	3.3	3.4	3.4	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.6	

Notes: D50 and D84 are the median and 84th percentile grain diameters; L is fish length; DT is the threshold particle size, based on Eq. (1); A is redd area, inferred from Eq. (6)

**Spawning Capacity, NREDDS (redds/100 m<sup>2</sup>)**  
**Look-Up Table**

D50 (mm)	L (mm)	DT (mm)	A (m <sup>2</sup> )	D84 (mm)																								
				40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500	
200	100	38	0.06	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.4	1.6	4.2	8.3	13.9	20.8	28.6	37.2	46.4	55.8	65.5	75.1
200	200	58	0.28	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.7	2.0	4.1	6.7	9.8	13.1	16.5	20.0	23.4	26.7	29.9	32.9
200	300	75	0.70	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.2	1.0	2.3	4.0	5.9	7.8	9.8	11.8	13.6	15.3	16.9	18.5	19.9
200	400	89	1.33	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.4	1.2	2.4	3.8	5.2	6.6	7.9	9.1	10.2	11.2	12.1	12.9	13.7
200	500	102	2.21	-	-	-	-	-	-	-	-	-	-	0.0	0.1	0.6	1.5	2.6	3.7	4.7	5.7	6.6	7.3	8.0	8.6	9.2	9.7	10.1
200	600	115	3.34	-	-	-	-	-	-	-	-	-	-	0.0	0.2	0.8	1.7	2.6	3.5	4.3	5.0	5.6	6.1	6.5	6.9	7.3	7.6	7.9
200	700	126	4.73	-	-	-	-	-	-	-	-	-	-	0.0	0.3	1.0	1.9	2.7	3.3	3.9	4.4	4.8	5.1	5.4	5.7	5.9	6.1	6.3
200	800	137	6.39	-	-	-	-	-	-	-	-	-	-	0.0	0.4	1.2	2.0	2.6	3.2	3.6	3.9	4.2	4.4	4.6	4.8	4.9	5.1	5.2
200	900	147	8.34	-	-	-	-	-	-	-	-	-	-	0.0	0.6	1.4	2.1	2.6	3.0	3.3	3.5	3.7	3.8	4.0	4.1	4.2	4.3	4.3
200	1000	157	10.59	-	-	-	-	-	-	-	-	-	-	0.1	0.9	1.6	2.1	2.5	2.8	3.0	3.1	3.3	3.4	3.4	3.5	3.6	3.6	3.7
200	1100	166	13.13	-	-	-	-	-	-	-	-	-	-	0.3	1.2	1.8	2.2	2.4	2.6	2.7	2.8	2.9	3.0	3.0	3.1	3.1	3.1	3.2
220	100	38	0.06	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.1	0.6	1.8	4.0	7.2	11.5	16.7	22.7	29.4	36.5	43.9	
220	200	58	0.28	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.2	0.9	2.0	3.6	5.6	8.0	10.5	13.2	16.0	18.7	21.4	
220	300	75	0.70	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.4	1.1	2.1	3.4	4.8	6.3	7.9	9.5	11.0	12.4	13.8	
220	400	89	1.33	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.5	1.2	2.1	3.2	4.3	5.3	6.4	7.4	8.3	9.2	10.0	
220	500	102	2.21	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.2	0.7	1.4	2.2	3.0	3.8	4.6	5.3	6.0	6.6	7.2	7.7	
220	600	115	3.34	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.3	0.8	1.5	2.2	2.8	3.5	4.0	4.6	5.0	5.4	5.8	6.2	
220	700	126	4.73	-	-	-	-	-	-	-	-	-	-	0.0	0.1	0.4	0.9	1.6	2.1	2.7	3.2	3.6	4.0	4.3	4.6	4.8	5.1	
220	800	137	6.39	-	-	-	-	-	-	-	-	-	-	0.0	0.1	0.5	1.1	1.6	2.1	2.5	2.9	3.2	3.5	3.7	3.9	4.1	4.2	
220	900	147	8.34	-	-	-	-	-	-	-	-	-	-	0.0	0.2	0.7	1.2	1.7	2.1	2.4	2.7	2.9	3.1	3.2	3.4	3.5	3.6	
220	1000	157	10.59	-	-	-	-	-	-	-	-	-	-	0.0	0.3	0.8	1.3	1.7	2.0	2.2	2.4	2.6	2.7	2.9	3.0	3.1	3.1	
220	1100	166	13.13	-	-	-	-	-	-	-	-	-	-	0.0	0.4	0.9	1.4	1.7	1.9	2.1	2.2	2.4	2.5	2.6	2.6	2.7	2.7	
240	100	38	0.06	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.2	0.7	1.9	3.7	6.3	9.7	13.7	18.4	23.6		
240	200	58	0.28	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.1	0.4	0.9	1.9	3.2	4.8	6.6	8.6	10.7	13.0		
240	300	75	0.70	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.1	0.5	1.1	1.9	2.9	4.0	5.2	6.5	7.7	9.0		
240	400	89	1.33	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.2	0.6	1.2	1.9	2.7	3.5	4.4	5.2	6.1	6.9		
240	500	102	2.21	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.3	0.7	1.2	1.8	2.5	3.2	3.8	4.4	5.0	5.5		
240	600	115	3.34	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.4	0.8	1.3	1.8	2.3	2.9	3.3	3.8	4.2	4.6		
240	700	126	4.73	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.2	0.5	0.9	1.3	1.8	2.2	2.6	3.0	3.3	3.6	3.9		
240	800	137	6.39	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.2	0.5	0.9	1.3	1.7	2.1	2.4	2.7	2.9	3.1	3.3		
240	900	147	8.34	-	-	-	-	-	-	-	-	-	-	0.0	0.1	0.3	0.6	1.0	1.4	1.7	2.0	2.2	2.4	2.6	2.8	2.9		
240	1000	157	10.59	-	-	-	-	-	-	-	-	-	-	0.0	0.1	0.4	0.7	1.1	1.4	1.6	1.8	2.0	2.2	2.3	2.5	2.6		
240	1100	166	13.13	-	-	-	-	-	-	-	-	-	-	0.0	0.1	0.4	0.8	1.1	1.3	1.6	1.7	1.9	2.0	2.1	2.2	2.3		

Notes: D50 and D84 are the median and 84th percentile grain diameters; L is fish length; DT is the threshold particle size, based on Eq. (1); A is redd area, inferred from Eq. (6)

**Spawning Capacity, NREDDS (redds/100 m<sup>2</sup>)**  
**Look-Up Table**

D50 (mm)	L (mm)	DT (mm)	A (m <sup>2</sup> )	D84 (mm)																							
				40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500
260	100	38	0.06	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.1	0.3	0.9	1.9	3.4	5.5	8.2	11.4
260	200	58	0.28	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.1	0.4	1.0	1.8	2.8	4.1	5.5	7.2
260	300	75	0.70	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.1	0.2	0.5	1.0	1.7	2.5	3.4	4.4	5.4
260	400	89	1.33	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.1	0.3	0.6	1.1	1.6	2.3	3.0	3.7	4.4
260	500	102	2.21	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.1	0.3	0.7	1.1	1.6	2.1	2.6	3.2	3.7
260	600	115	3.34	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.2	0.4	0.7	1.1	1.5	2.0	2.4	2.8	3.2
260	700	126	4.73	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.2	0.5	0.8	1.1	1.5	1.8	2.2	2.5	2.8
260	800	137	6.39	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.3	0.5	0.8	1.1	1.5	1.7	2.0	2.2	2.5
260	900	147	8.34	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.3	0.6	0.9	1.1	1.4	1.6	1.9	2.0	2.2
260	1000	157	10.59	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.4	0.6	0.9	1.1	1.3	1.5	1.7	1.9	2.0
260	1100	166	13.13	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.2	0.4	0.7	0.9	1.1	1.3	1.5	1.6	1.7	1.8
280	200	58	0.28	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.1	0.2	0.5	1.0	1.6	2.5	3.5	
280	300	75	0.70	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.1	0.3	0.6	1.0	1.5	2.2	2.9	
280	400	89	1.33	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.1	0.3	0.6	1.0	1.5	2.0	2.5	
280	500	102	2.21	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.2	0.4	0.7	1.0	1.4	1.8	2.2	
280	600	115	3.34	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.1	0.2	0.4	0.7	1.0	1.3	1.7	2.0	
280	700	126	4.73	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.1	0.2	0.5	0.7	1.0	1.3	1.6	1.8	
280	800	137	6.39	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.1	0.3	0.5	0.7	1.0	1.2	1.5	1.7	
280	900	147	8.34	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.2	0.3	0.5	0.8	1.0	1.2	1.4	1.6	
280	1000	157	10.59	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.2	0.4	0.6	0.8	1.0	1.1	1.3	1.5	
280	1100	166	13.13	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.1	0.2	0.4	0.6	0.8	0.9	1.1	1.2	1.4	
300	300	75	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.6	0.9	1.4	
300	400	89	1.33	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.6	0.9	1.3	
300	500	102	2.21	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.6	0.9	1.2	
300	600	115	3.34	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.6	0.9	1.2	
300	700	126	4.73	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.6	0.9	1.1	
300	800	137	6.39	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.1	0.1	0.3	0.5	0.7	0.9	1.1	
300	900	147	8.34	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.1	0.2	0.3	0.5	0.7	0.8	1.0	
300	1000	157	10.59	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.1	0.2	0.3	0.5	0.7	0.8	1.0	
300	1100	166	13.13	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	0.1	0.2	0.4	0.5	0.7	0.8	0.9	

Notes: D50 and D84 are the median and 84th percentile grain diameters; L is fish length; DT is the threshold particle size, based on Eq. (1); A is redd area, inferred from Eq. (6)