

**California Marine Life Protection Act Initiative**  
**Spacing between Estuarine Habitats in the North Coast Study Region**  
*July 30, 2010*

**Estuarine Spacing Table:** All north coast study region estuaries that are above the minimum estuarine size are listed in this table with spacing to every other above-minimum-size estuary in the study region. Also included in this table is the nearest above-minimum-size estuary to the north of the study region (in Oregon) and the two nearest above-minimum-size estuaries to the south (in the north central coast) that are within MPAs. Habitats replicated in each estuary are indicated with an "X". Replication and spacing is not assessed for tidal flats due to mapping limitations, but presence of mapped tidal flats is indicated with a "P" in this table. Spacing distances are in statute miles.

	Estuary replicate	Marsh replicate	Eelgrass replicate <sup>1</sup>	Tidal Flats present <sup>2</sup>	Chetco R, Oregon	Smith R	Lake Earl	Klamath R	Redwood Crk	Stone Lagoon	Big Lagoon	Mad River	Humboldt Bay	Eel R	Mattole R	Ten Mile R	Big R	Albion R	Navarro R	Russian R, NCCSR	Estero Americano, north central coast	
<b>Estuary replicate</b>					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>Marsh replicate</b>					X	X	X	X			X	X	X	X		X	X			X		X
<b>Eelgrass replicate<sup>1</sup></b>					X	X							X	X		X	X	X				X
<b>Tidal Flats present<sup>2</sup></b>						P						P	P	P	P		P		P			
Chetco River, Oregon	X	X	X		0	8	16	36	53	56	58	76	89	97	122	181	196	201	203	267	281	
Smith River	X	X	X	P	8	0	8	28	45	48	50	68	81	89	114	173	188	193	195	259	273	
Lake Earl	X	X			16	8	0	20	37	40	43	60	74	82	106	165	180	185	187	251	265	
Klamath River	X	X			36	28	20	0	17	20	23	41	54	62	87	146	161	166	169	233	247	
Redwood Creek	X				53	45	37	17	0	3	6	24	37	45	70	129	144	149	152	216	230	
Stone Lagoon	X				56	48	40	20	3	0	2	21	34	42	67	126	141	146	149	213	227	
Big Lagoon	X	X			58	50	43	23	6	2	0	18	31	40	64	124	139	144	146	210	224	
Mad River	X	X		P	76	68	60	41	24	21	18	0	13	22	47	106	121	126	129	193	207	
Humboldt Bay	X	X	X	P	89	81	74	54	37	34	31	13	0	8	33	92	107	112	115	179	193	
Eel River	X	X	X	P	97	89	82	62	45	42	40	22	8	0	24	83	98	103	106	170	184	
Mattole River	X			P	122	114	106	87	70	67	64	47	33	24	0	59	74	79	82	146	160	
Ten Mile River	X	X	X		181	173	165	146	129	126	124	106	92	83	59	0	17	23	25	89	103	
Big River	X	X	X	P	196	188	180	161	144	141	139	121	107	98	74	17	0	5	8	72	86	
Albion River	X		X		201	193	185	166	149	146	144	126	112	103	79	23	5	0	3	67	81	
Navarro River	X			P	203	195	187	169	152	149	146	129	115	106	82	25	8	3	0	64	78	
Russian River, north central coast	X	X			267	259	251	233	216	213	210	193	179	170	146	89	72	67	64	0	14	
Estero Americano, north central coast	X		X		281	273	265	247	230	227	224	207	193	184	160	103	86	81	78	14	0	

<sup>1</sup> All north coast estuaries that are above the minimum estuarine size and known to contain eelgrass (mapped or unmapped) are considered to contain a replicate of eelgrass habitat.

<sup>2</sup> Because tidal flats are poorly mapped in the north coast study region, replication and spacing are not assessed for tidal flats. For informational purposes, this table indicates all estuaries that are above the minimum estuarine size that contain any amount of mapped tidal flats.

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**Marsh Spacing Table:** All north coast estuaries that are above the minimum estuarine size and contain a replicate of marsh habitat are listed in this table with spacing to every other marsh replicate in the study region. Also included in this table is the nearest above-minimum-size estuary to the north of the study region (in Oregon) and the nearest marsh replicate to the south (in the north central coast) that is within an MPA. Habitats replicated in each estuary are indicated with an "X". Replication and spacing is not assessed for tidal flats due to mapping limitations, but presence of mapped tidal flats is indicated with a "P" in this table. Spacing distances are in statute miles.

	Estuary replicate	Marsh replicate	Eelgrass replicate <sup>1</sup>	Tidal Flats present <sup>2</sup>	Chetco River, Oregon	Smith River	Lake Earl	Klamath River	Big Lagoon	Mad River	Humboldt Bay	Eel River	Ten Mile River	Big River	Russian River, north central coast
<b>Estuary replicate</b>					X	X	X	X	X	X	X	X	X	X	X
<b>Marsh replicate</b>					X	X	X	X	X	X	X	X	X	X	X
<b>Eelgrass replicate<sup>1</sup></b>					X	X					X	X	X	X	
<b>Tidal Flats present<sup>2</sup></b>						P				P	P	P		P	
Chetco River, Oregon	X	X	X		0	8	16	36	58	76	89	97	181	196	267
Smith River	X	X	X	P	8	0	8	28	50	68	81	89	173	188	259
Lake Earl	X	X			16	8	0	20	43	60	74	82	165	180	251
Klamath River	X	X			36	28	20	0	23	41	54	62	146	161	233
Big Lagoon	X	X			58	50	43	23	0	18	31	40	124	139	210
Mad River	X	X		P	76	68	60	41	18	0	13	22	106	121	193
Humboldt Bay	X	X	X	P	89	81	74	54	31	13	0	8	92	107	179
Eel River	X	X	X	P	97	89	82	62	40	22	8	0	83	98	170
Ten Mile River	X	X	X		181	173	165	146	124	106	92	83	0	17	89
Big River	X	X	X	P	196	188	180	161	139	121	107	98	17	0	72
Russian River, north central coast	X	X			267	259	251	233	210	193	179	170	89	72	0

<sup>1</sup> All north coast estuaries that are above the minimum estuarine size and known to contain eelgrass (mapped or unmapped) are considered to contain a replicate of eelgrass habitat.

<sup>2</sup> Because tidal flats are poorly mapped in the north coast study region, replication and spacing are not assessed for tidal flats. For informational purposes, this table indicates all estuaries that are above the minimum estuarine size that contain any amount of mapped tidal flats.

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**Eelgrass Spacing Table:** All north coast study region estuaries that are above the minimum estuarine size and contain a replicate of eelgrass habitat are listed in this table with spacing to every other eelgrass replicate in the study region. Also included in this table is the nearest above-minimum-size estuary to the north of the study region (in Oregon) and the nearest eelgrass replicate to the south (in the north central coast) that is within an MPA. Habitats replicated in each estuary are indicated with an "X". Replication and spacing is not assessed for tidal flats due to mapping limitations, but presence of mapped tidal flats is indicated with a "P" in this table. Spacing distances are in statute miles.

	Estuary replicate	Marsh replicate	Eelgrass replicate <sup>1</sup>	Tidal Flats present <sup>2</sup>	Chetco River, Oregon	Smith River	Humboldt Bay	Eel River	Ten Mile River	Big River	Albion River	Estero Americano, north central coast
<b>Estuary replicate</b>					X	X	X	X	X	X	X	X
<b>Marsh replicate</b>					X	X	X	X	X	X		
<b>Eelgrass replicate<sup>1</sup></b>					X	X	X	X	X	X	X	X
<b>Tidal Flats present<sup>2</sup></b>						P	P	P		P		
Chetco River, Oregon	X	X	X		0	8	89	97	181	196	201	281
Smith River	X	X	X	P	8	0	81	89	173	188	193	273
Humboldt Bay	X	X	X	P	89	81	0	8	92	107	112	193
Eel River	X	X	X	P	97	89	8	0	83	98	103	184
Ten Mile River	X	X	X		181	173	92	83	0	17	23	103
Big River	X	X	X	P	196	188	107	98	17	0	5	86
Albion River	X		X		201	193	112	103	23	5	0	81
Estero Americano, north central coast	X		X		281	273	193	184	103	86	81	0

<sup>1</sup> All north coast estuaries that are above the minimum estuarine size and known to contain eelgrass (mapped or unmapped) are considered to contain a replicate of eelgrass habitat.

<sup>2</sup> Because tidal flats are poorly mapped in the north coast study region, replication and spacing are not assessed for tidal flats. For informational purposes, this table indicates all estuaries that are above the minimum estuarine size that contain any amount of mapped tidal flats.