

California MLPA Initiative North Central Coast Project
Spacing Between Marine Protected Area Clusters for Draft Proposal 1 (EC)
Revised February 28, 2008

The charts below show the distance between MPA clusters (for open coast habitats) and between estuarine MPAs (these were analyzed separately in the spacing analysis). All distances are measured in statute miles.

Spacing: Open Coast Habitats	North Boundary Study Region	Point Arena Cluster	Saunders Reef Cluster	Salt Point Cluster	Bodega Head Cluster	Point Reyes Cluster	Double Point Cluster	Fitzgerald Cluster	CCSR Ano Nuevo Cluster	CCSR Soquel Canyon SMCA	CCSR Point Lobos Cluster
North Boundary Study Region	0	4	12	32	61	89	101	129	166	191	210
Point Arena Cluster	4	0	10	29	59	86	99	126	164	189	208
Saunders Reef Cluster	12	10	0	19	49	77	89	117	154	179	198
Salt Point Cluster	32	29	19	0	30	57	70	97	135	160	179
Bodega Head Cluster	61	59	49	30	0	27	40	67	105	130	149
Point Reyes Cluster	89	86	77	57	27	0	13	40	77	102	121
Double Point Cluster	101	99	89	70	40	13	0	32	70	94	114
Fitzgerald Cluster	129	126	117	97	67	40	32	0	38	63	82
CCSR Ano Nuevo Cluster	166	164	154	135	105	77	70	38	0	25	44
CCSR Soquel Canyon SMCA	191	189	179	160	130	102	94	63	25	0	19
CCSR Point Lobos Cluster	210	208	198	179	149	121	114	82	44	19	0

Spacing: Estuarine Habitats	Navarro River Estuary	Russian River Reserve	Estero de Americano SMRMA	Estero De San Antonio SMRMA	Clam Island SMRMA	Tomales Bay South SMRMA	Drakes - Limantour Estero SMR	Bolinas Lagoon SMR	San Francisco Bay	CCSR Elkhorn Slough SMR
Navarro River Estuary	0	67	81	83	85	97	106	122	134	215
Russian River Reserve	67	0	15	17	20	31	41	56	68	149
Estero de Americano SMRMA	81	15	0	2	6	18	29	44	56	137
Estero De San Antonio SMRMA	83	17	2	0	4	15	27	43	54	135
Clam Island SMRMA	85	20	6	4	0	12	28	43	55	136
Tomales Bay South SMRMA	97	31	18	15	12	0	39	55	66	147
Drakes - Limantour Estero SMR	106	41	29	27	28	39	0	18	30	116
Bolinas Lagoon SMR	122	56	44	43	43	55	18	0	14	102
San Francisco Bay	134	68	56	54	55	66	30	14	0	92
CCSR Elkhorn Slough SMR	215	149	137	135	136	147	116	102	92	0

CCSR = MLPA Central Coast Study Region
SMCA = state marine conservation area

SMP = state marine park
SMR = state marine reserve

California MLPA Initiative North Central Coast Project
Spacing Between Marine Protected Area Clusters for Draft Proposal 2 (JD)
Revised February 28, 2008

The charts below show the distance between MPA clusters (for open coast habitats) and between estuarine MPAs (these were analyzed separately in the spacing analysis). All distances are measured in statute miles.

Spacing: Open Coast Habitats	North Boundary Study Region	Point Arena Cluster	Saunders Reef Cluster	Black Point Cluster	Bodega Head Cluster	Point Reyes Cluster	Fitzgerald Cluster	CCSR Ano Nuevo Cluster	CCSR Soquel Canyon SMCA	CCSR Point Lobos Cluster
North Boundary Study Region	0	4	12	28	63	89	130	166	191	210
Point Arena Cluster	4	0	9	25	61	86	128	164	189	208
Saunders Reef Cluster	12	9	0	16	52	77	119	155	180	199
Black Point Cluster	28	25	16	0	36	61	103	139	164	183
Bodega Head Cluster	63	61	52	36	0	25	67	103	128	147
Point Reyes Cluster	89	86	77	61	25	0	42	78	103	122
Fitzgerald Cluster	130	128	119	103	67	42	0	36	61	80
CCSR Ano Nuevo Cluster	166	164	155	139	103	78	36	0	25	44
CCSR Soquel Canyon SMCA	191	189	180	164	128	103	61	25	0	19
CCSR Point Lobos Cluster	210	208	199	183	147	122	80	44	19	0

Spacing: Estuarine Habitats	Navarro River Estuary	Russian River Cluster	Estero Americano SMR	Estero de San Antonio SMR	Tomales Bay SMP	Drakes Bay SMR	San Francisco Bay	CCSR Elkhorn Slough SMR
Navarro River Estuary	0	67	81	83	97	107	134	215
Russian River Cluster	67	0	15	17	31	40	67	148
Estero Americano SMR	81	15	0	2	18	28	56	137
Estero de San Antonio SMR	83	17	2	0	15	27	54	135
Tomales Bay SMP	97	31	18	15	0	39	66	147
Drakes Bay SMR	107	40	28	27	39	0	30	116
San Francisco Bay	134	67	56	54	66	30	0	92
CCSR Elkhorn Slough SMR	215	148	137	135	147	116	92	0

CCSR = MLPA Central Coast Study Region
 SMCA = state marine conservation area

SMP = state marine park
 SMR = state marine reserve

California MLPA Initiative North Central Coast Project
Spacing Between Marine Protected Area Clusters for Draft Proposal 3 (TC)
Revised February 28, 2008

The charts below show the distance between MPA clusters (for open coast habitats) and between estuarine MPAs (these were analyzed separately in the spacing analysis). All distances are measured in statute miles.

Spacing: Open Coast Habitats	North Boundary Study Region	Point Arena Cluster	Saunders Reef Cluster	Black Salt Cluster	Russian River SMCA	Bodega Head Cluster	Point Reyes Cluster	Duxbury Cluster	Moss Beach Cluster	CCSR Ano Nuevo Cluster	CCSR Soquel Canyon SMCA	CCSR Point Lobos Cluster
North Boundary Study Region	0	4	12	31	53	62	89	100	130	166	191	210
Point Arena Cluster	4	0	10	29	50	60	87	97	127	164	189	208
Saunders Reef Cluster	12	10	0	19	41	50	77	88	118	154	179	198
Black Salt Cluster	31	29	19	0	22	31	58	69	99	135	160	179
Russian River SMCA	53	50	41	22	0	10	37	48	78	114	139	158
Bodega Head Cluster	62	60	50	31	10	0	27	37	67	104	129	148
Point Reyes Cluster	89	87	77	58	37	27	0	11	41	77	102	121
Duxbury Cluster	100	97	88	69	48	37	11	0	34	71	96	115
Moss Beach Cluster	130	127	118	99	78	67	41	34	0	37	62	81
CCSR Ano Nuevo Cluster	166	164	154	135	114	104	77	71	37	0	25	44
CCSR Soquel Canyon SMCA	191	189	179	160	139	129	102	96	62	25	0	19
CCSR Point Lobos Cluster	210	208	198	179	158	148	121	115	81	44	19	0

Spacing: Estuarine Habitats	Navarro River Estuary	Russian River SMCA	Estero de Americano SMR	Estero De San Antonio SMR	Tomales Bay	Drakes Estero SMR	Bolinas Lagoon SMR	San Francisco Bay	Pescadero Estuary SMR	CCSR Elkhorn Slough SMR
Navarro River Estuary	0	65	81	83	97	106	122	133	163	215
Russian River SMCA	65	0	16	18	32	42	57	69	99	150
Estero de Americano SMR	81	16	0	2	18	29	44	56	86	137
Estero De San Antonio SMR	83	18	2	0	15	27	43	54	84	136
Tomales Bay	97	32	18	15	0	39	55	66	96	147
Drakes Estero SMR	106	42	29	27	39	0	18	30	64	116
Bolinas Lagoon SMR	122	57	44	43	55	18	0	14	51	102
San Francisco Bay	133	69	56	54	66	30	14	0	41	92
Pescadero Estuary SMR	163	99	86	84	96	64	51	41	0	51
CCSR Elkhorn Slough SMR	215	150	137	136	147	116	102	92	51	0

CCSR = MLPA Central Coast Study Region
 SMCA = state marine conservation area

SMP = state marine park
 SMR = state marine reserve

California MLPA Initiative North Central Coast Project
Spacing Between Marine Protected Area Clusters for Draft Proposal 4 (JC)
Revised February 28, 2008

The charts below show the distance between MPA clusters (for open coast habitats) and between estuarine MPAs (these were analyzed separately in the spacing analysis). All distances are measured in statute miles.

Spacing: Open Coast Habitats	North Boundary Study Region	Point Arena Cluster	Saunders Reef Cluster	Black Salt Cluster	Bodega Head Cluster	Point Reyes Cluster	Double Point Cluster	Fitzgerald Cluster	San Gregorio SMR	CCSR Ano Nuevo Cluster	CCSR Soquel Canyon SMCA	CCSR Point Lobos Cluster
North Boundary Study Region	0	4	13	34	63	89	101	129	146	166	191	210
Point Arena Cluster	4	0	10	31	60	86	99	126	144	164	189	208
Saunders Reef Cluster	13	10	0	21	50	77	89	116	134	154	179	198
Black Salt Cluster	34	31	21	0	29	55	68	95	113	133	158	177
Bodega Head Cluster	63	60	50	29	0	26	39	66	84	104	129	148
Point Reyes Cluster	89	86	77	55	26	0	12	40	57	77	102	121
Double Point Cluster	101	99	89	68	39	12	0	32	50	70	94	114
Fitzgerald Cluster	129	126	116	95	66	40	32	0	18	38	63	82
San Gregorio SMR	146	144	134	113	84	57	50	18	0	20	45	64
CCSR Ano Nuevo Cluster	166	164	154	133	104	77	70	38	20	0	25	44
CCSR Soquel Canyon SMCA	191	189	179	158	129	102	94	63	45	25	0	19
CCSR Point Lobos Cluster	210	208	198	177	148	121	114	82	64	44	19	0

Spacing: Estuarine Habitats	Navarro River Estuary	Russian River SMR	Tomales Bay SMRMA	Drakes Estero SMR	San Francisco Bay	CCSR Elkhorn Slough SMR
Navarro River Estuary	0	67	97	107	134	215
Russian River SMR	67	0	31	41	68	149
Tomales Bay SMRMA	97	31	0	39	66	147
Drakes Estero SMR	107	41	39	0	30	116
San Francisco Bay	134	68	66	30	0	92
CCSR Elkhorn Slough SMR	215	149	147	116	92	0

CCSR = MLPA Central Coast Study Region
 SMCA = state marine conservation area

SMP = state marine park
 SMR = state marine reserve

California MLPA Initiative North Central Coast Project
Spacing Between Marine Protected Area Clusters for Draft External Proposal A
Revised February 28, 2008

The charts below show the distance between MPA clusters (for open coast habitats) and between estuarine MPAs (these were analyzed separately in the spacing analysis). All distances are measured in statute miles.

Spacing: Open Coast Habitats	North Boundary Study Region	Point Arena Cluster	Black Point Cluster	Bodega Head Cluster	Point Reyes Cluster	Fitzgerald Cluster	CCSR Ano Nuevo Cluster	CCSR Soquel Canyon SMCA	CCSR Point Lobos Cluster
North Boundary Study Region	0	4	26	63	89	130	166	191	210
Point Arena Cluster	4	0	24	61	87	128	164	189	208
Black Point Cluster	26	24	0	37	63	104	140	165	184
Bodega Head Cluster	63	61	37	0	26	67	103	128	147
Point Reyes Cluster	89	87	63	26	0	41	77	102	121
Fitzgerald Cluster	130	128	104	67	41	0	36	61	80
CCSR Ano Nuevo Cluster	166	164	140	103	77	36	0	25	44
CCSR Soquel Canyon SMCA	191	189	165	128	102	61	25	0	19
CCSR Point Lobos Cluster	210	208	184	147	121	80	44	19	0

Spacing: Estuarine Habitats	Navarro River Estuary	Russian River SMR	Estero Americano SMR	Estero San Antonio SMR	Drakes Limantour Cluster	Tomaes Bay SMR	Bolinas Lagoon SMR	San Francisco Bay	CCSR Elkhorn Slough SMR
Navarro River Estuary	0	67	81	83	107	97	122	134	215
Russian River SMR	67	0	15	17	41	31	56	68	149
Estero Americano SMR	81	15	0	2	29	17	44	56	137
Estero San Antonio SMR	83	17	2	0	27	15	43	54	135
Drakes Limantour Cluster	107	41	29	27	0	39	19	31	116
Tomaes Bay SMR	97	31	17	15	39	0	54	66	147
Bolinas Lagoon SMR	122	56	44	43	19	54	0	14	102
San Francisco Bay	134	68	56	54	31	66	14	0	92
CCSR Elkhorn Slough SMR	215	149	137	135	116	147	102	92	0

CCSR = MLPA Central Coast Study Region
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