

Alamitos Generating Station

Appendix D

Entrainment Data

Data by Survey and Station Groups

Appendix D1. Data by Survey and Station

**Alamitos Generating Station
 Entrainment Study - Fish and Invertebrate Abundances**

Survey: ABEA01
 Start Date: 1/5/2006
 Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	268	2,057.72
<i>Hypsoblennius</i> spp.	combtooth blennies	34	258.29
<i>Gillichthys mirabilis</i>	longjaw mudsucker	9	71.12
<i>Atherinops affinis</i>	topsmelt	8	64.26
<i>Atherinopsis californiensis</i>	jacksmelt	8	63.11
<i>Gibbonsia</i> spp.	clinid kelpfishes	8	62.51
<i>Gobiesox</i> spp.	clingfishes	8	61.74
larval/post-larval fish unid.	larval fishes	7	56.44
larval fish fragment	unidentified larval fishes	6	45.20
<i>Acanthogobius flavimanus</i>	yellowfin goby	1	8.14
<i>Ilypnus gilberti</i>	cheekspot goby	1	8.14
		Total Fishes: 358	
Eggs			
No Eggs			
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA02
Start Date: 1/17/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	730	5,495.89
<i>Hypsoblennius</i> spp.	combtooth blennies	23	150.36
<i>Atherinopsis californiensis</i>	jacksmelt	6	45.68
larval fish fragment	unidentified larval fishes	4	30.66
Atherinopsidae unid.	silversides	3	18.81
<i>Gibbonsia</i> spp.	clinid kelpfishes	2	16.22
<i>Genyonemus lineatus</i>	white croaker	1	7.96
<i>Gobiesox</i> spp.	clingfishes	1	7.79
<i>Atherinops affinis</i>	topsmelt	1	7.37
<i>Acanthogobius flavimanus</i>	yellowfin goby	1	6.57
<i>Heterostichus rostratus</i>	giant kelpfish	1	6.27
		Total Fishes: 773	
Eggs			
fish eggs unid.	unidentified fish eggs	6	42.68
<i>Genyonemus lineatus</i> (eggs)	white croaker eggs	3	20.09
<i>Pleuronichthys</i> spp. (eggs)	turbot eggs	1	6.63
		Total Eggs: 10	
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA02
Start Date: 1/17/2006
Stations: H1-H4

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	1,453	2,008.23
<i>Hypsoblennius</i> spp.	combtooth blennies	70	98.24
<i>Acanthogobius flavimanus</i>	yellowfin goby	21	29.01
<i>Atherinopsis californiensis</i>	jacksmelt	6	7.97
<i>Gillichthys mirabilis</i>	longjaw mudsucker	4	5.66
<i>Gobiesox</i> spp.	clingfishes	4	5.49
larval fish fragment	unidentified larval fishes	3	4.87
<i>Gibbonsia</i> spp.	clinid kelpfishes	2	3.35
larval/post-larval fish unid.	larval fishes	3	2.84
<i>Clevelandia ios</i>	arrow goby	2	2.83
<i>Heterostichus rostratus</i>	giant kelpfish	1	1.41
<i>Leptocottus armatus</i>	Pacific staghorn sculpin	1	1.41
<i>Atherinops affinis</i>	topsmelt	1	1.32
		Total Fishes: 1,571	
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	5	6.42
		Total Target Invertebrates: 5	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA02
Start Date: 1/17/2006
Stations: O1-O3, S1-S3

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	167	172.91
<i>Genyonemus lineatus</i>	white croaker	147	131.41
Sciaenidae unid.	croakers	40	37.50
<i>Leptocottus armatus</i>	Pacific staghorn sculpin	22	19.21
<i>Hypsoblennius</i> spp.	combtooth blennies	9	8.36
<i>Pleuronichthys guttulatus</i>	diamond turbot	7	6.47
larval fish fragment	unidentified larval fishes	6	5.88
<i>Acanthogobius flavimanus</i>	yellowfin goby	5	4.37
larvae, unidentified yolksac	unidentified yolksac larvae	5	3.92
<i>Gillichthys mirabilis</i>	longjaw mudsucker	4	3.90
<i>Lepidogobius lepidus</i>	bay goby	4	3.44
<i>Atherinopsis californiensis</i>	jacksmelt	4	3.16
<i>Gobiesox</i> spp.	clingfishes	3	3.12
larval fish - damaged	unidentified larval fishes	2	1.84
<i>Paralichthys californicus</i>	California halibut	2	1.60
<i>Atherinops affinis</i>	topsmelt	1	1.01
<i>Typhlogobius californiensis</i>	blind goby	1	0.95
<i>Scorpaenichthys marmoratus</i>	cabezon	1	0.80
		Total Fishes: 430	
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	19	17.22
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	3	2.98
<i>Cancer anthonyi</i> (megalops)	yellow crab megalops	1	1.12
unidentified crab (megalops)	unidentified crab megalops	1	0.91
<i>Cancer antennarius</i> (megalops)	brown rock crab megalops	1	0.69
		Total Target Invertebrates: 25	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA03
Start Date: 1/31/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	288	1,946.98
<i>Hypsoblennius</i> spp.	combtooth blennies	35	229.87
<i>Atherinopsis californiensis</i>	jacksmelt	16	108.26
<i>Acanthogobius flavimanus</i>	yellowfin goby	8	57.66
<i>Atherinops affinis</i>	topsmelt	7	47.15
<i>Gillichthys mirabilis</i>	longjaw mudsucker	4	27.86
<i>Gibbonsia</i> spp.	clinid kelpfishes	3	19.37
<i>Gobiesox</i> spp.	clingfishes	3	19.11
<i>Leptocottus armatus</i>	Pacific staghorn sculpin	2	14.97
<i>Genyonemus lineatus</i>	white croaker	2	12.56
<i>Paralichthys californicus</i>	California halibut	1	6.49
Gobiesocidae unid.	clingfishes	1	6.12
<i>Typhlogobius californiensis</i>	blind goby	1	5.70
		Total Fishes: 371	
Eggs			
fish eggs unid.	unidentified fish eggs	23	151.52
<i>Genyonemus lineatus</i> (eggs)	white croaker eggs	14	94.09
<i>Paralichthys californicus</i> (eggs)	California halibut eggs	2	14.58
<i>Citharichthys</i> spp. (eggs)	sanddab eggs	2	13.18
		Total Eggs: 41	
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA04
Start Date: 2/14/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	712	5,050.08
<i>Hypsoblennius</i> spp.	combtooth blennies	100	714.88
<i>Gobiesox</i> spp.	clingfishes	14	98.44
<i>Atherinops affinis</i>	topsmelt	12	85.51
<i>Gibbonsia</i> spp.	clinid kelpfishes	12	84.13
<i>Atherinopsis californiensis</i>	jacksmelt	9	63.77
<i>Gillichthys mirabilis</i>	longjaw mudsucker	7	52.76
<i>Acanthogobius flavimanus</i>	yellowfin goby	5	37.88
larval/post-larval fish unid.	larval fishes	3	20.76
<i>Syngnathus</i> spp.	pipefishes	1	8.05
Atherinopsidae unid.	silversides	1	7.48
<i>Pleuronichthys guttulatus</i>	diamond turbot	1	6.72
Chaenopsidae unid.	tube blennies	1	6.40
		Total Fishes: 878	
Eggs			
Paralichthyidae unid. (eggs)	sand flounder eggs	13	87.58
<i>Genyonemus lineatus</i> (eggs)	white croaker eggs	8	58.84
<i>Citharichthys</i> spp. (eggs)	sanddab eggs	5	34.98
<i>Paralichthys californicus</i> (eggs)	California halibut eggs	4	29.13
fish eggs unid.	unidentified fish eggs	4	26.14
fish egg unid., damaged	damaged fish eggs unid.	2	14.46
		Total Eggs: 36	
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA04
Start Date: 2/14/2006
Stations: H1-H4

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	1,658	2,664.33
<i>Hypsoblennius</i> spp.	combtooth blennies	338	540.83
<i>Acanthogobius flavimanus</i>	yellowfin goby	140	228.46
larval/post-larval fish unid.	larval fishes	5	8.69
<i>Gobiesox</i> spp.	clingfishes	6	8.65
<i>Gillichthys mirabilis</i>	longjaw mudsucker	5	7.56
larval fish fragment	unidentified larval fishes	4	6.81
<i>Atherinopsis californiensis</i>	jacksmelt	4	6.42
<i>Pleuronichthys guttulatus</i>	diamond turbot	4	6.19
<i>Typhlogobius californiensis</i>	blind goby	2	3.31
<i>Gibbonsia</i> spp.	clinid kelpfishes	2	3.22
<i>Atherinops affinis</i>	topsmelt	1	1.87
Myctophidae unid.	lanternfishes	1	1.55
<i>Leptocottus armatus</i>	Pacific staghorn sculpin	1	1.53
Atherinopsidae unid.	silversides	1	1.28
		Total Fishes: 2,172	
Target Invertebrates			
Majidae unid. (megalops)	spider crab megalops	1	1.55
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	1	1.28
		Total Target Invertebrates: 2	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA04
Start Date: 2/14/2006
Stations: O1-O3, S1-S3

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	357	302.83
<i>Hypsoblennius</i> spp.	combtooth blennies	35	35.99
<i>Atherinopsis californiensis</i>	jacksmelt	17	18.97
<i>Pleuronichthys guttulatus</i>	diamond turbot	8	7.64
<i>Genyonemus lineatus</i>	white croaker	7	5.33
<i>Gobiesox</i> spp.	clingfishes	6	4.99
<i>Acanthogobius flavimanus</i>	yellowfin goby	3	3.26
Pleuronectidae unid.	righteye flounders	3	2.79
<i>Typhlogobius californiensis</i>	blind goby	3	2.71
<i>Gillichthys mirabilis</i>	longjaw mudsucker	3	2.21
larval/post-larval fish unid.	larval fishes	2	1.82
Sciaenidae unid.	croakers	1	1.35
<i>Leptocottus armatus</i>	Pacific staghorn sculpin	1	1.15
larval fish fragment	unidentified larval fishes	1	1.09
Atherinopsidae unid.	silversides	1	1.00
<i>Lepidogobius lepidus</i>	bay goby	1	0.91
<i>Zaniolepis frenata</i>	shortspine combfish	1	0.91
<i>Sebastes</i> spp.	rockfishes	1	0.73
		Total Fishes: 451	
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	5	4.77
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	3	2.93
Majidae unid. (megalops)	spider crab megalops	1	0.82
<i>Cancer gracilis</i> (megalops)	slender crab megalops	1	0.66
		Total Target Invertebrates: 10	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA05
Start Date: 2/27/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	510	3,385.65
<i>Atherinops affinis</i>	topsmelt	125	879.66
Atherinopsidae unid.	silversides	26	192.06
<i>Hypsoblennius</i> spp.	combtooth blennies	22	141.33
<i>Gillichthys mirabilis</i>	longjaw mudsucker	17	119.25
<i>Gobiesox</i> spp.	clingfishes	14	85.60
<i>Atherinopsis californiensis</i>	jacksmelt	6	36.31
larval fish - damaged	unidentified larval fishes	4	29.31
<i>Quietula y-cauda</i>	shadow goby	3	20.23
<i>Gibbonsia</i> spp.	clinid kelpfishes	3	17.55
Gobiesocidae unid.	clingfishes	2	13.86
larval fish fragment	unidentified larval fishes	2	11.59
<i>Acanthogobius flavimanus</i>	yellowfin goby	1	8.30
		Total Fishes: 735	
Eggs			
fish eggs unid.	unidentified fish eggs	14	86.67
<i>Genyonemus lineatus</i> (eggs)	white croaker eggs	10	69.00
Paralichthyidae unid. (eggs)	sand flounder eggs	7	51.76
<i>Pleuronichthys</i> spp. (eggs)	turbot eggs	1	6.97
		Total Eggs: 32	
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA06
Start Date: 3/13/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	773	5,080.04
<i>Hypsoblennius</i> spp.	combtooth blennies	74	494.80
<i>Gobiesox</i> spp.	clingfishes	9	58.11
<i>Atherinops affinis</i>	topsmelt	8	55.71
<i>Acanthogobius flavimanus</i>	yellowfin goby	6	40.69
<i>Gibbonsia</i> spp.	clinid kelpfishes	5	34.91
<i>Gillichthys mirabilis</i>	longjaw mudsucker	5	32.53
larval fish fragment	unidentified larval fishes	4	27.16
larval fish - damaged	unidentified larval fishes	3	18.65
<i>Genyonemus lineatus</i>	white croaker	2	14.49
<i>Clinocottus analis</i>	wooly sculpin	1	7.42
Sciaenidae unid.	croakers	1	6.90
Gobiesocidae unid.	clingfishes	1	6.22
<i>Atherinopsis californiensis</i>	jacksmelt	1	6.18
		Total Fishes: 893	
Eggs			
fish eggs unid.	unidentified fish eggs	54	363.87
Paralichthyidae unid. (eggs)	sand flounder eggs	3	19.92
<i>Pleuronichthys</i> spp. (eggs)	turbot eggs	1	6.35
<i>Genyonemus lineatus</i> (eggs)	white croaker eggs	1	6.18
		Total Eggs: 59	
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	2	13.98
		Total Target Invertebrates: 2	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA06
Start Date: 3/13/2006
Stations: H1-H4

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	1,218	1,799.45
<i>Hypsoblennius</i> spp.	combtooth blennies	205	305.59
<i>Genyonemus lineatus</i>	white croaker	137	188.90
<i>Acanthogobius flavimanus</i>	yellowfin goby	44	86.32
<i>Atherinopsis californiensis</i>	jacksmelt	17	24.88
<i>Gillichthys mirabilis</i>	longjaw mudsucker	8	12.11
larvae, unidentified yolksac	unidentified yolksac larvae	6	8.99
<i>Gobiesox</i> spp.	clingfishes	5	6.96
<i>Pleuronichthys guttulatus</i>	diamond turbot	3	5.21
<i>Engraulis mordax</i>	northern anchovy	3	4.33
larval fish - damaged	unidentified larval fishes	2	3.53
<i>Paralichthys californicus</i>	California halibut	2	3.47
larval fish fragment	unidentified larval fishes	2	3.31
<i>Leptocottus armatus</i>	Pacific staghorn sculpin	2	2.85
<i>Typhlogobius californiensis</i>	blind goby	1	1.96
<i>Stenobranchius leucopsarus</i>	northern lampfish	1	1.81
<i>Gibbonsia</i> spp.	clinid kelpfishes	1	1.65
<i>Atherinops affinis</i>	topsmelt	1	1.43
<i>Clinocottus analis</i>	wooly sculpin	1	1.43
Atherinopsidae unid.	silversides	1	1.30
Pleuronectiformes unid.	flatfishes	1	1.17
		Total Fishes: 1,661	
Target Invertebrates			
<i>Hemigrapsus oregonensis</i> (megs.)	yellow shore crab megalops	7	9.57
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	6	7.89
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	4	5.52
		Total Target Invertebrates: 17	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA06
Start Date: 3/13/2006
Stations: O1-O3, S1-S3

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
<i>Genyonemus lineatus</i>	white croaker	3,243	3,308.91
Gobiidae unid.	gobies	698	705.03
Sciaenidae unid.	croakers	55	59.31
<i>Hypsoblennius</i> spp.	combtooth blennies	44	44.53
<i>Engraulis mordax</i>	northern anchovy	42	42.65
<i>Paralichthys californicus</i>	California halibut	42	39.85
larval fish fragment	unidentified larval fishes	24	23.16
<i>Parophrys vetulus</i>	English sole	24	21.92
<i>Gobiesox</i> spp.	clingfishes	20	19.05
<i>Atherinopsis californiensis</i>	jacksmelt	14	14.05
<i>Lepidogobius lepidus</i>	bay goby	13	12.93
<i>Pleuronichthys guttulatus</i>	diamond turbot	11	12.54
<i>Stenobranchius leucopsarus</i>	northern lampfish	11	12.19
larvae, unidentified yolksac	unidentified yolksac larvae	13	11.68
<i>Acanthogobius flavimanus</i>	yellowfin goby	10	9.58
<i>Gillichthys mirabilis</i>	longjaw mudsucker	9	9.02
<i>Citharichthys stigmaeus</i>	speckled sanddab	11	9.00
<i>Typhlogobius californiensis</i>	blind goby	8	8.16
<i>Merluccius productus</i>	Pacific hake	6	5.97
<i>Sebastes</i> spp.	rockfishes	4	3.32
larval fish - damaged	unidentified larval fishes	3	3.07
<i>Clinocottus analis</i>	wooly sculpin	2	2.60
<i>Seriphus politus</i>	queenfish	2	2.03
Labrisomidae unid.	labrisomid blennies	2	1.97
<i>Pleuronichthys verticalis</i>	hornyhead turbot	2	1.86
Chaenopsidae unid.	tube blennies	2	1.78
larval/post-larval fish unid.	larval fishes	1	1.30
<i>Neoclinus</i> spp.	fringeheads	1	1.12
<i>Ruscarius creaseri</i>	roughcheek sculpin	1	1.12
<i>Citharichthys</i> spp.	sanddabs	1	1.09
<i>Leptocottus armatus</i>	Pacific staghorn sculpin	1	1.01
<i>Gibbonsia</i> spp.	clinid kelpfishes	1	0.99
<i>Heterostichus rostratus</i>	giant kelpfish	1	0.99
<i>Pleuronichthys</i> spp.	turbots	1	0.84
<i>Sardinops sagax</i>	Pacific sardine	1	0.83
Cottidae unid.	sculpins	1	0.66
		Total Fishes: 4,325	
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	107	101.51
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	13	14.05
<i>Hemigrapsus oregonensis</i> (megs.)	yellow shore crab megalops	5	4.66
Paguridae unid. (megalops)	hermit crab megalops	3	3.49
<i>Petrolisthes</i> spp. (megalops)	porcelain crab megalops	1	1.35

(continued)

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA06
Start Date: 3/13/2006
Stations: O1-O3, S1-S3 (continued)

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Target Invertebrates (continued)			
<i>Pachygrapsus crassipes</i> (megalops)	striped shore crab megalops	1	1.30
<i>Cancer gracilis</i> (megalops)	slender crab megalops	1	1.12
unidentified crab (megalops)	unidentified crab megalops	1	1.12
Majidae unid. (megalops)	spider crab megalops	1	0.73
		Total Target Invertebrates: 133	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA07
Start Date: 3/26/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	371	2,548.39
<i>Hypsoblennius</i> spp.	combtooth blennies	112	759.60
<i>Acanthogobius flavimanus</i>	yellowfin goby	42	280.61
<i>Gillichthys mirabilis</i>	longjaw mudsucker	16	110.69
<i>Gobiesox</i> spp.	clingfishes	12	81.43
<i>Gibbonsia</i> spp.	clinid kelpfishes	11	69.51
larval/post-larval fish unid.	larval fishes	10	65.40
<i>Atherinops affinis</i>	topsmelt	9	62.51
larval fish fragment	unidentified larval fishes	5	35.46
larval fish - damaged	unidentified larval fishes	4	27.17
larvae, unidentified yolksac	unidentified yolksac larvae	2	12.41
Atherinopsidae unid.	silversides	1	7.23
Labrisomidae unid.	labrisomid blennies	1	7.04
<i>Genyonemus lineatus</i>	white croaker	1	5.52
		Total Fishes: 597	
Eggs			
fish eggs unid.	unidentified fish eggs	217	1,468.67
Paralichthyidae unid. (eggs)	sand flounder eggs	6	43.34
<i>Citharichthys</i> spp. (eggs)	sanddab eggs	1	7.79
<i>Genyonemus lineatus</i> (eggs)	white croaker eggs	1	7.79
<i>Pleuronichthys</i> spp. (eggs)	turbot eggs	1	5.49
		Total Eggs: 226	
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA08
Start Date: 4/10/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	613	4,178.24
<i>Hypsoblennius</i> spp.	combtooth blennies	248	1,753.49
<i>Engraulis mordax</i>	northern anchovy	38	264.79
<i>Gobiesox</i> spp.	clingfishes	19	127.19
<i>Genyonemus lineatus</i>	white croaker	18	122.53
Atherinopsidae unid.	silversides	9	58.85
<i>Acanthogobius flavimanus</i>	yellowfin goby	6	42.18
<i>Atherinopsis californiensis</i>	jacksmelt	6	40.34
<i>Gibbonsia</i> spp.	clinid kelpfishes	4	28.76
<i>Leuresthes tenuis</i>	California grunion	4	27.12
<i>Atherinops affinis</i>	topsmelt	4	26.53
Engraulidae unid.	anchovies	3	23.49
<i>Gillichthys mirabilis</i>	longjaw mudsucker	3	21.07
<i>Pleuronichthys guttulatus</i>	diamond turbot	2	15.10
Cottidae unid.	sculpins	1	7.83
Gobiesocidae unid.	clingfishes	1	7.44
larval fish - damaged	unidentified larval fishes	1	7.00
<i>Typhlogobius californiensis</i>	blind goby	1	6.87
Pleuronectiformes unid.	flatfishes	1	6.84
<i>Clinocottus</i> spp.	sculpins	1	6.71
larval fish fragment	unidentified larval fishes	1	6.64
		Total Fishes: 984	
Eggs			
fish eggs unid.	unidentified fish eggs	248	1,702.88
Paralichthyidae unid. (eggs)	sand flounder eggs	17	109.29
<i>Atherinops affinis</i> (eggs)	topsmelt eggs	12	80.62
Sciaenidae unid. (eggs)	croaker eggs	7	49.62
Engraulidae unid. (eggs)	anchovy eggs	7	48.41
<i>Citharichthys</i> spp. (eggs)	sanddab eggs	3	21.46
		Total Eggs: 294	
Target Invertebrates			
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	3	18.47
		Total Target Invertebrates: 3	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA08
Start Date: 4/10/2006
Stations: H1-H4

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	2,045	2,877.24
<i>Hypsoblennius</i> spp.	combtooth blennies	683	951.10
<i>Engraulis mordax</i>	northern anchovy	189	258.24
<i>Genyonemus lineatus</i>	white croaker	155	205.31
Engraulidae unid.	anchovies	114	153.65
Atherinopsidae unid.	silversides	36	49.70
<i>Gobiesox</i> spp.	clingfishes	31	43.18
<i>Atherinopsis californiensis</i>	jacksmelt	31	41.83
<i>Acanthogobius flavimanus</i>	yellowfin goby	31	39.32
<i>Gillichthys mirabilis</i>	longjaw mudsucker	26	34.69
<i>Gibbonsia</i> spp.	clinid kelpfishes	6	8.08
larval fish - damaged	unidentified larval fishes	5	6.69
larvae, unidentified yolksac	unidentified yolksac larvae	4	5.77
Sciaenidae unid.	croakers	4	4.99
<i>Pleuronichthys verticalis</i>	hornyhead turbot	3	4.88
<i>Pleuronichthys guttulatus</i>	diamond turbot	3	4.23
<i>Typhlogobius californiensis</i>	blind goby	2	3.35
<i>Seriphus politus</i>	queenfish	2	3.17
<i>Heterostichus rostratus</i>	giant kelpfish	2	2.64
<i>Atherinops affinis</i>	topsmelt	2	2.25
<i>Leuresthes tenuis</i>	California grunion	1	1.64
<i>Clevelandia ios</i>	arrow goby	1	1.47
<i>Sebastes</i> spp.	rockfishes	1	1.47
<i>Merluccius productus</i>	Pacific hake	1	1.46
<i>Roncador stearnsi</i>	spotfin croaker	1	1.39
Gobiesocidae unid.	clingfishes	1	1.31
larval fish fragment	unidentified larval fishes	1	1.31
<i>Pleuronichthys ritteri</i>	spotted turbot	1	1.07
		Total Fishes: 3,382	
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	48	69.11
Grapsidae unid. (megalops)	shore crab megalops	47	64.02
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	24	31.63
unidentified crab (megalops)	unidentified crab megalops	20	27.36
Majidae unid. (megalops)	spider crab megalops	6	8.20
<i>Hemigrapsus</i> spp. (megalops)	shore crab megalops	4	5.71
<i>Pachycheles</i> spp. (megalops)	porcelain crabs megalops	2	3.21
<i>Pinnotheres</i> spp. (megalops)	pea crab megalops	2	2.66
Paguridae unid. (megalops)	hermit crab megalops	2	2.54
Porcellanidae unid. (megalops)	porcelain crab megalops	1	1.39
		Total Target Invertebrates: 156	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA08
Start Date: 4/10/2006
Stations: O1-O3, S1-S3

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
<i>Genyonemus lineatus</i>	white croaker	2,565	2,749.78
Gobiidae unid.	gobies	1,460	1,444.36
<i>Engraulis mordax</i>	northern anchovy	760	832.77
Engraulidae unid.	anchovies	458	475.18
<i>Hypsoblennius</i> spp.	combtooth blennies	144	135.86
Atherinopsidae unid.	silversides	52	49.64
<i>Gobiesox</i> spp.	clingfishes	45	46.08
<i>Atherinopsis californiensis</i>	jacksmelt	36	36.64
Sciaenidae unid.	croakers	30	31.62
<i>Paralichthys californicus</i>	California halibut	25	27.48
<i>Pleuronichthys verticalis</i>	hornyhead turbot	15	16.51
<i>Gillichthys mirabilis</i>	longjaw mudsucker	15	13.53
<i>Pleuronichthys guttulatus</i>	diamond turbot	13	13.40
<i>Seriphus politus</i>	queenfish	13	12.93
larval fish - damaged	unidentified larval fishes	13	12.23
larvae, unidentified yolksac	unidentified yolksac larvae	11	11.46
<i>Parophrys vetulus</i>	English sole	9	9.87
<i>Pleuronichthys ritteri</i>	spotted turbot	9	9.83
<i>Pleuronichthys</i> spp.	turbots	9	9.58
<i>Merluccius productus</i>	Pacific hake	7	7.73
<i>Gibbonsia</i> spp.	clinid kelpfishes	7	7.16
<i>Typhlogobius californiensis</i>	blind goby	6	6.37
<i>Sebastes</i> spp.	rockfishes	6	5.73
<i>Stenobranchius leucopsarus</i>	northern lampfish	5	5.73
Labrisomidae unid.	labrisomid blennies	5	4.97
<i>Citharichthys sordidus</i>	Pacific sanddab	3	3.66
<i>Clinocottus analis</i>	wooly sculpin	3	3.05
Pleuronectiformes unid.	flatfishes	2	2.15
<i>Rhinogobiops nicholsi</i>	blackeye goby	2	2.15
Pleuronectidae unid.	righteye flounders	2	1.81
<i>Icelinus quadriseriatus</i>	yellowchin sculpin	1	1.27
<i>Bathylagus ochotensis</i>	pop-eye blacksmelt	1	1.15
Ophidiidae unid.	cusks-eels	1	1.13
<i>Ruscarius creaseri</i>	roughcheek sculpin	1	1.11
Haemulidae unid.	grunts	1	0.95
<i>Leptocottus armatus</i>	Pacific staghorn sculpin	1	0.95
<i>Citharichthys stigmaeus</i>	speckled sanddab	1	0.93
Hexagrammidae unid.	greenlings	1	0.87
<i>Heterostichus rostratus</i>	giant kelpfish	1	0.72
		Total Fishes: 5,739	

(continued)

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA08
Start Date: 4/10/2006
Stations: O1-O3, S1-S3 (continued)

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	739	739.67
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	163	156.66
unidentified crab (megalops)	unidentified crab megalops	117	118.67
Grapsidae unid. (megalops)	shore crab megalops	51	53.97
<i>Pinnotheres</i> spp. (megalops)	pea crab megalops	36	35.06
Paguridae unid. (megalops)	hermit crab megalops	31	31.02
Majidae unid. (megalops)	spider crab megalops	25	27.17
<i>Cancer antennarius</i> (megalops)	brown rock crab megalops	15	15.22
Porcellanidae unid. (megalops)	porcelain crab megalops	16	14.50
<i>Hemigrapsus</i> spp. (megalops)	shore crab megalops	9	9.61
<i>Petrolisthes</i> spp. (megalops)	porcelain crab megalops	7	6.99
<i>Pachycheles rudis</i> (megalops)	thickclaw porcelain crab	7	6.48
<i>Pachycheles</i> spp. (megalops)	porcelain crabs megalops	6	5.98
<i>Cancer anthonyi</i> (megalops)	yellow crab megalops	3	3.38
Diogenidae (megalops)	left-handed hermit crabs	3	2.80
<i>Loligo opalescens</i>	market squid	2	2.25
<i>Cancer</i> spp. (megalops)	cancer crabs megalops	1	1.12
<i>Lophopanopeus</i> spp. (megalops)	black-clawed crab megalops	1	0.93
Total Target Invertebrates:		1,232	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA09
Start Date: 4/24/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	426	2,708.97
<i>Hypsoblennius</i> spp.	combtooth blennies	164	1,075.32
<i>Gillichthys mirabilis</i>	longjaw mudsucker	13	85.79
larval/post-larval fish unid.	larval fishes	14	84.80
<i>Gobiesox</i> spp.	clingfishes	11	72.36
<i>Engraulis mordax</i>	northern anchovy	10	64.99
larval fish fragment	unidentified larval fishes	7	44.47
<i>Atherinops affinis</i>	topsmelt	5	36.57
<i>Pleuronichthys guttulatus</i>	diamond turbot	5	29.79
<i>Genyonemus lineatus</i>	white croaker	4	27.24
<i>Acanthogobius flavimanus</i>	yellowfin goby	3	17.63
Labrisomidae unid.	labrisomid blennies	2	14.47
<i>Gibbonsia</i> spp.	clinid kelpfishes	2	13.92
Sciaenidae unid.	croakers	2	13.13
Atherinopsidae unid.	silversides	2	11.58
<i>Heterostichus rostratus</i>	giant kelpfish	1	7.05
<i>Typhlogobius californiensis</i>	blind goby	1	7.05
Cottidae unid.	sculpins	1	6.88
<i>Clinocottus analis</i>	wooly sculpin	1	5.61
Gobiesocidae unid.	clingfishes	1	5.15
		Total Fishes: 675	
Eggs			
fish eggs unid.	unidentified fish eggs	333	1,974.45
Paralichthyidae unid. (eggs)	sand flounder eggs	10	66.26
Atherinopsidae unid. (eggs)	silverside eggs	4	22.25
<i>Pleuronichthys</i> spp. (eggs)	turbot eggs	2	14.67
<i>Atherinops affinis</i> (eggs)	topsmelt eggs	2	14.45
Engraulidae unid. (eggs)	anchovy eggs	2	12.40
Sciaenidae unid. (eggs)	croaker eggs	1	7.24
		Total Eggs: 354	
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	3	21.56
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	2	13.17
Grapsidae unid. (megalops)	shore crab megalops	2	12.44
unidentified crab (megalops)	unidentified crab megalops	1	6.35
<i>Hemigrapsus</i> spp. (megalops)	shore crab megalops	1	5.61
		Total Target Invertebrates: 9	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA10
Start Date: 5/8/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	534	4,015.03
<i>Hypsoblennius</i> spp.	combtooth blennies	429	3,212.64
<i>Engraulis mordax</i>	northern anchovy	82	630.19
<i>Gillichthys mirabilis</i>	longjaw mudsucker	18	141.75
<i>Gobiesox</i> spp.	clingfishes	18	133.30
larval fish fragment	unidentified larval fishes	13	96.56
<i>Leuresthes tenuis</i>	California grunion	9	68.47
<i>Genyonemus lineatus</i>	white croaker	9	68.09
Atherinopsidae unid.	silversides	7	52.83
Engraulidae unid.	anchovies	3	22.69
<i>Atherinops affinis</i>	topsmelt	2	16.21
<i>Clinocottus analis</i>	wooly sculpin	2	15.75
<i>Typhlogobius californiensis</i>	blind goby	2	15.14
<i>Paralichthys californicus</i>	California halibut	2	15.06
larval fish - damaged	unidentified larval fishes	2	14.98
Labrisomidae unid.	labrisomid blennies	2	14.56
Sciaenidae unid.	croakers	1	8.24
Gobiesocidae unid.	clingfishes	1	7.39
<i>Acanthogobius flavimanus</i>	yellowfin goby	1	7.19
		Total Fishes: 1,137	
Eggs			
fish eggs unid.	unidentified fish eggs	129	970.30
Atherinopsidae unid. (eggs)	silverside eggs	15	100.42
Engraulidae unid. (eggs)	anchovy eggs	5	36.31
		Total Eggs: 149	
Target Invertebrates			
Grapsidae unid. (megalops)	shore crab megalops	2	15.30
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	2	15.15
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	1	8.11
<i>Pachygrapsus crassipes</i> (megalops)	striped shore crab megalops	1	7.39
unidentified crab (megalops)	unidentified crab megalops	1	7.19
<i>Pachygrapsus crassipes</i>	striped shore crab	1	6.63
		Total Target Invertebrates: 8	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA10
Start Date: 5/8/2006
Stations: H1-H4

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	1,548	2,319.10
<i>Hypsoblennius</i> spp.	combtooth blennies	1,281	1,989.61
<i>Engraulis mordax</i>	northern anchovy	549	809.89
<i>Genyonemus lineatus</i>	white croaker	224	337.95
<i>Gobiesox</i> spp.	clingfishes	24	36.96
Atherinopsidae unid.	silversides	20	31.85
<i>Leuresthes tenuis</i>	California grunion	18	28.72
Labrisomidae unid.	labrisomid blennies	11	18.11
larval fish fragment	unidentified larval fishes	12	18.08
larval fish - damaged	unidentified larval fishes	10	15.84
<i>Pleuronichthys</i> spp.	turbots	5	7.94
<i>Pleuronichthys verticalis</i>	hornyhead turbot	4	7.00
<i>Seriphus politus</i>	queenfish	4	5.52
<i>Gillichthys mirabilis</i>	longjaw mudsucker	3	5.13
Engraulidae unid.	anchovies	3	4.50
<i>Acanthogobius flavimanus</i>	yellowfin goby	2	3.33
<i>Typhlogobius californiensis</i>	blind goby	2	3.15
Sciaenidae unid.	croakers	2	3.09
<i>Paraclinus</i> spp.	clinid	2	2.78
<i>Ruscarius creaseri</i>	roughcheek sculpin	1	1.82
<i>Paralichthys californicus</i>	California halibut	1	1.48
<i>Syngnathus</i> spp.	pipefishes	1	1.43
<i>Lepidogobius lepidus</i>	bay goby	1	1.27
<i>Pleuronichthys guttulatus</i>	diamond turbot	1	1.25
		Total Fishes: 3,729	
Target Invertebrates			
Grapsidae unid. (megalops)	shore crab megalops	19	28.44
Brachyura unid. (megalops)	unidentified crab megalops	19	27.35
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	12	18.97
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	10	14.31
<i>Pinnotheres</i> spp. (megalops)	pea crab megalops	2	2.75
unidentified crab (megalops)	unidentified crab megalops	1	1.25
		Total Target Invertebrates: 63	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA10
Start Date: 5/8/2006
Stations: O1-O3, S1-S3

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
<i>Engraulis mordax</i>	northern anchovy	681	664.18
Gobiidae unid.	gobies	401	396.93
<i>Hypsoblennius</i> spp.	combtooth blennies	392	375.64
<i>Genyonemus lineatus</i>	white croaker	290	258.57
Engraulidae unid.	anchovies	65	63.64
larval fish fragment	unidentified larval fishes	14	14.31
Atherinopsidae unid.	silversides	12	11.54
<i>Gobiesox</i> spp.	clingfishes	13	11.01
<i>Pleuronichthys verticalis</i>	hornyhead turbot	10	10.35
<i>Typhlogobius californiensis</i>	blind goby	9	8.68
larval fish - damaged	unidentified larval fishes	9	7.68
<i>Paralichthys californicus</i>	California halibut	6	5.47
Sciaenidae unid.	croakers	4	4.17
<i>Oxylebius pictus</i>	painted greenling	4	3.90
<i>Pleuronichthys</i> spp.	turbots	4	3.53
<i>Seriphus politus</i>	queenfish	3	3.35
<i>Leuresthes tenuis</i>	California grunion	4	3.25
<i>Ruscarius creaseri</i>	roughcheek sculpin	3	3.05
<i>Stenobranchius leucopsarus</i>	northern lampfish	3	2.85
larvae, unidentified yolksac	unidentified yolksac larvae	2	2.01
<i>Gibbonsia</i> spp.	clinid kelpfishes	2	1.80
<i>Lepidogobius lepidus</i>	bay goby	2	1.76
<i>Citharichthys stigmaeus</i>	speckled sanddab	1	1.14
Ophidiidae unid.	cusk-eels	1	1.14
<i>Parophrys vetulus</i>	English sole	1	1.14
<i>Citharichthys sordidus</i>	Pacific sanddab	1	1.08
<i>Gillichthys mirabilis</i>	longjaw mudsucker	1	0.96
<i>Artedius lateralis</i>	smoothhead sculpin	1	0.90
<i>Rhinogobiops nicholsi</i>	blackeye goby	1	0.90
<i>Oxyjulis californica</i>	senorita	1	0.83
Pleuronectidae unid.	righteye flounders	1	0.83
<i>Sebastes</i> spp.	rockfishes	1	0.80
<i>Zaniolepis frenata</i>	shortspine combfish	1	0.80
<i>Atherinopsis californiensis</i>	jacksmelt	1	0.78
<i>Clinocottus analis</i>	wooly sculpin	1	0.78
Labrisomidae unid.	labrisomid blennies	1	0.72
<i>Paraclinus</i> spp.	clinid	1	0.72
		Total Fishes: 1,948	

(continued)

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA10
Start Date: 5/8/2006
Stations: O1-O3, S1-S3 (continued)

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	72	71.00
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	28	26.29
Grapsidae unid. (megalops)	shore crab megalops	20	18.93
Brachyura unid. (megalops)	unidentified crab megalops	14	11.59
Majidae unid. (megalops)	spider crab megalops	5	4.65
unidentified crab (megalops)	unidentified crab megalops	4	3.88
<i>Cancer antennarius</i> (megalops)	brown rock crab megalops	4	3.54
<i>Pinnotheres</i> spp. (megalops)	pea crab megalops	3	2.58
Diogenidae (megalops)	left-handed hermit crabs	2	1.67
<i>Lophopanopeus</i> spp. (megalops)	black-clawed crab megalops	2	1.59
<i>Cancer</i> spp. (megalops)	cancer crabs megalops	1	0.97
Total Target Invertebrates:		155	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA11
Start Date: 5/22/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	724	4,856.70
<i>Atherinops affinis</i>	topsmelt	213	1,641.92
<i>Hypsoblennius</i> spp.	combtooth blennies	201	1,344.34
<i>Leuresthes tenuis</i>	California grunion	24	174.02
<i>Gobiesox</i> spp.	clingfishes	22	146.75
<i>Ilypnus gilberti</i>	cheekspot goby	20	126.84
Atherinopsidae unid.	silversides	18	121.70
larval fish fragment	unidentified larval fishes	11	71.04
Labrisomidae unid.	labrisomid blennies	11	68.25
<i>Gillichthys mirabilis</i>	longjaw mudsucker	9	63.28
<i>Syngnathus</i> spp.	pipefishes	8	57.60
<i>Clevelandia ios</i>	arrow goby	7	56.20
<i>Engraulis mordax</i>	northern anchovy	4	29.60
larval fish - damaged	unidentified larval fishes	4	28.53
<i>Tridentiger trionocephalus</i>	chameleon goby	3	24.19
<i>Acanthogobius flavimanus</i>	yellowfin goby	3	23.46
Gobiesocidae unid.	clingfishes	1	6.92
<i>Pleuronichthys guttulatus</i>	diamond turbot	1	6.92
		Total Fishes: 1,284	
Eggs			
fish eggs unid.	unidentified fish eggs	42	271.69
<i>Atherinops affinis</i> (eggs)	topsmelt eggs	30	185.32
Paralichthyidae unid. (eggs)	sand flounder eggs	6	39.41
Engraulidae unid. (eggs)	anchovy eggs	5	29.66
<i>Pleuronichthys</i> spp. (eggs)	turbot eggs	1	5.61
Sciaenidae unid. (eggs)	croaker eggs	1	5.46
		Total Eggs: 85	
Target Invertebrates			
<i>Hemigrapsus oregonensis</i>	yellow shore crab	4	26.07
		Total Target Invertebrates: 4	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA12
Start Date: 6/5/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	681	4,279.78
<i>Hypsoblennius</i> spp.	combtooth blennies	474	3,029.53
<i>Atherinops affinis</i>	topsmelt	10	91.11
Labrisomidae unid.	labrisomid blennies	9	72.78
larvae, unidentified yolksac	unidentified yolksac larvae	10	56.90
<i>Gobiesox</i> spp.	clingfishes	9	53.88
<i>Typhlogobius californiensis</i>	blind goby	6	39.39
Atherinopsidae unid.	silversides	4	38.05
<i>Syngnathus</i> spp.	pipefishes	4	28.86
larval fish - damaged	unidentified larval fishes	2	13.22
Chaenopsidae unid.	tube blennies	2	12.53
<i>Hypsypops rubicundus</i>	garibaldi	1	5.82
<i>Seriphus politus</i>	queenfish	1	5.73
Engraulidae unid.	anchovies	1	5.60
Sciaenidae unid.	croakers	1	5.60
		Total Fishes: 1,215	
Eggs			
fish eggs unid.	unidentified fish eggs	448	2,873.94
Engraulidae unid. (eggs)	anchovy eggs	78	590.94
Sciaen. / Paralich. / Labridae (eggs)	fish eggs	12	74.97
Paralichthyidae unid. (eggs)	sand flounder eggs	4	25.65
Sciaenidae unid. (eggs)	croaker eggs	1	6.66
<i>Atherinops affinis</i> (eggs)	topsmelt eggs	1	6.12
		Total Eggs: 544	
Target Invertebrates			
Grapsidae unid. (megalops)	shore crab megalops	1	6.12
		Total Target Invertebrates: 1	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA12
Start Date: 6/5/2006
Stations: H1-H4

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	2,294	3,589.62
<i>Hypsoblennius</i> spp.	combtooth blennies	1,076	1,735.02
<i>Genyonemus lineatus</i>	white croaker	37	65.44
larvae, unidentified yolksac	unidentified yolksac larvae	21	35.46
Sciaenidae unid.	croakers	20	34.13
Labrisomidae unid.	labrisomid blennies	20	28.11
larval fish - damaged	unidentified larval fishes	14	23.25
<i>Gobiesox</i> spp.	clingfishes	13	21.99
larval fish fragment	unidentified larval fishes	13	20.97
<i>Typhlogobius californiensis</i>	blind goby	11	18.40
<i>Syngnathus</i> spp.	pipefishes	7	12.01
Engraulidae unid.	anchovies	7	11.08
<i>Seriphus politus</i>	queenfish	7	10.83
<i>Gibbonsia</i> spp.	clinid kelpfishes	4	6.96
<i>Hypsypops rubicundus</i>	garibaldi	3	5.18
<i>Cheilotrema saturnum</i>	black croaker	2	3.33
<i>Roncador stearnsi</i>	spotfin croaker	2	2.98
<i>Atherinops affinis</i>	topsmelt	1	1.95
<i>Clinocottus</i> spp.	sculpins	1	1.82
<i>Paralabrax</i> spp.	sand bass	1	1.79
<i>Peprilus simillimus</i>	Pacific butterfish	1	1.68
<i>Paralichthys californicus</i>	California halibut	1	1.49
<i>Engraulis mordax</i>	northern anchovy	1	1.29
		Total Fishes: 3,557	
Target Invertebrates			
Grapsidae unid. (megalops)	shore crab megalops	5	8.40
Brachyura unid. (megalops)	unidentified crab megalops	4	6.34
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	2	2.97
<i>Lophopanopeus</i> spp. (megalops)	black-clawed crab megalops	1	1.68
Paguridae unid. (megalops)	hermit crab megalops	1	1.29
		Total Target Invertebrates: 13	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA12
Start Date: 6/5/2006
Stations: O1-O3, S1-S3

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
<i>Hypsoblennius</i> spp.	cometooth blennies	860	870.72
Gobiidae unid.	gobies	760	716.56
larvae, unidentified yolksac	unidentified yolksac larvae	374	368.04
Sciaenidae unid.	croakers	292	270.34
larval fish fragment	unidentified larval fishes	116	113.51
<i>Seriphus politus</i>	queenfish	91	87.90
<i>Engraulis mordax</i>	northern anchovy	72	69.42
<i>Genyonemus lineatus</i>	white croaker	51	50.84
<i>Paralichthys californicus</i>	California halibut	58	50.46
Atherinopsidae unid.	silversides	51	49.78
Engraulidae unid.	anchovies	38	37.94
Labrisomidae unid.	labrisomid blennies	29	29.23
<i>Hypsypops rubicundus</i>	garibaldi	27	24.69
larval fish - damaged	unidentified larval fishes	21	19.71
<i>Leuresthes tenuis</i>	California grunion	16	16.58
<i>Cheilotrema saturnum</i>	black croaker	12	11.74
<i>Typhlogobius californiensis</i>	blind goby	11	11.67
<i>Roncador stearnsi</i>	spotfin croaker	12	10.97
<i>Gobiesox</i> spp.	clingfishes	8	8.11
<i>Pleuronichthys ritteri</i>	spotted turbot	5	4.77
<i>Paralabrax</i> spp.	sand bass	5	4.60
larval/post-larval fish unid.	larval fishes	4	4.21
<i>Peprilus simillimus</i>	Pacific butterfish	4	3.88
<i>Syngnathus</i> spp.	pipefishes	3	3.54
<i>Pleuronichthys</i> spp.	turbots	4	3.53
Scorpaenidae unid.	scorpionfishes	2	2.18
<i>Menticirrhus undulatus</i>	California corbina	2	2.08
<i>Atherinops affinis</i>	topsmelt	2	1.99
<i>Sphyrnaena argentea</i>	Pacific barracuda	2	1.88
<i>Citharichthys stigmaeus</i>	speckled sanddab	2	1.65
<i>Clinocottus</i> spp.	sculpins	1	1.08
<i>Gibbonsia</i> spp.	clinid kelpfishes	1	1.05
<i>Girella nigricans</i>	opaleye	1	1.03
<i>Semicossyphus pulcher</i>	California sheephead	1	1.03
Cynoglossidae unid.	tongue soles	1	0.94
Pleuronectiformes unid.	flatfishes	1	0.91
<i>Pleuronichthys verticalis</i>	hornyhead turbot	1	0.91
<i>Oxyjulis californica</i>	senorita	1	0.85
Paralichthyidae unid.	sand flounders	1	0.85
<i>Gillichthys mirabilis</i>	longjaw mudsucker	1	0.81
		Total Fishes: 2,944	

(continued)

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA12
Start Date: 6/5/2006
Stations: O1-O3, S1-S3 (continued)

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	27	28.16
Grapsidae unid. (megalops)	shore crab megalops	16	16.34
Brachyura unid. (megalops)	unidentified crab megalops	8	8.09
<i>Petrolisthes</i> spp. (megalops)	porcelain crab megalops	7	7.69
<i>Lophopanopeus</i> spp. (megalops)	black-clawed crab megalops	6	6.30
<i>Pachycheles</i> spp. (megalops)	porcelain crabs megalops	6	6.00
Paguridae unid. (megalops)	hermit crab megalops	5	5.54
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	3	3.35
Porcellanidae unid. (megalops)	porcelain crab megalops	3	3.21
unidentified crab (megalops)	unidentified crab megalops	3	3.18
Majidae unid. (megalops)	spider crab megalops	2	2.29
<i>Cancer antennarius</i> (megalops)	brown rock crab megalops	1	1.05
<i>Pinnotheres</i> spp. (megalops)	pea crab megalops	1	0.91
Total Target Invertebrates:		88	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA13
Start Date: 6/19/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	770	5,166.24
<i>Hypsoblennius</i> spp.	combtooth blennies	273	1,864.41
Labrisomidae unid.	labrisomid blennies	21	154.02
<i>Gobiesox</i> spp.	clingfishes	14	95.46
<i>Atherinops affinis</i>	topsmelt	7	47.90
Atherinopsidae unid.	silversides	5	32.93
<i>Syngnathus</i> spp.	pipefishes	3	22.46
<i>Gibbonsia</i> spp.	clinid kelpfishes	3	21.74
larvae, unidentified yolksac	unidentified yolksac larvae	3	16.97
larval/post-larval fish unid.	larval fishes	2	13.10
<i>Engraulis mordax</i>	northern anchovy	1	6.81
<i>Triphoturus mexicanus</i>	Mexican lampfish	1	5.71
<i>Cheilotrema saturnum</i>	black croaker	1	5.63
		Total Fishes: 1,104	
Eggs			
fish eggs unid.	unidentified fish eggs	85	567.86
Engraulidae unid. (eggs)	anchovy eggs	40	261.13
Paralichthyidae unid. (eggs)	sand flounder eggs	2	15.27
Sciaen. / Paralich. / Labridae (eggs)	fish eggs	2	13.47
Atherinopsidae unid. (eggs)	silverside eggs	1	5.71
		Total Eggs: 130	
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA14
Start Date: 7/5/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	367	2,209.05
<i>Hypsoblennius</i> spp.	combtooth blennies	261	1,619.73
Labrisomidae unid.	labrisomid blennies	7	40.38
<i>Syngnathus</i> spp.	pipefishes	6	37.00
<i>Gobiesox</i> spp.	clingfishes	5	30.85
<i>Ilypnus gilberti</i>	cheekspot goby	4	21.66
Atherinopsidae unid.	silversides	4	21.33
larval/post-larval fish unid.	larval fishes	2	12.13
Gobiesocidae unid.	clingfishes	1	6.50
larvae, unidentified yolksac	unidentified yolksac larvae	1	6.39
Sciaenidae unid.	croakers	1	6.32
<i>Menticirrhus undulatus</i>	California corbina	1	6.14
<i>Atherinops affinis</i>	topsmelt	1	5.00
		Total Fishes: 661	
Eggs			
fish eggs unid.	unidentified fish eggs	745	3,863.02
Sciaen. / Paralich. / Labridae (eggs)	fish eggs	23	148.09
Engraulidae unid. (eggs)	anchovy eggs	7	41.37
		Total Eggs: 775	
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA14
Start Date: 7/5/2006
Stations: H1-H4

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	1,290	1,646.15
<i>Hypsoblennius</i> spp.	combtooth blennies	942	1,178.24
Labrisomidae unid.	labrisomid blennies	48	73.04
larval fish fragment	unidentified larval fishes	32	43.33
<i>Syngnathus</i> spp.	pipefishes	12	14.56
larval fish - damaged	unidentified larval fishes	11	13.74
<i>Gobiesox</i> spp.	clingfishes	8	11.09
Sciaenidae unid.	croakers	8	10.66
<i>Engraulis mordax</i>	northern anchovy	6	7.17
larvae, unidentified yolksac	unidentified yolksac larvae	5	6.25
<i>Ilypnus gilberti</i>	cheekspot goby	3	4.15
larval/post-larval fish unid.	larval fishes	3	4.15
Atherinopsidae unid.	silversides	2	2.57
Engraulidae unid.	anchovies	1	1.34
<i>Leuresthes tenuis</i>	California grunion	1	1.16
		Total Fishes: 2,372	
Target Invertebrates			
Grapsidae unid. (megalops)	shore crab megalops	5	6.39
Brachyura unid. (megalops)	unidentified crab megalops	4	4.74
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	3	3.75
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	2	2.37
<i>Lophopanopeus</i> spp. (megalops)	black-clawed crab megalops	1	1.19
		Total Target Invertebrates: 15	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA14
Start Date: 7/5/2006
Stations: O1-O3, S1-S3

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
<i>Hypsoblennius</i> spp.	cometooth blennies	520	536.32
Gobiidae unid.	gobies	365	378.48
larvae, unidentified yolksac	unidentified yolksac larvae	140	151.45
Sciaenidae unid.	croakers	86	89.81
larval fish fragment	unidentified larval fishes	34	36.93
<i>Hypsypops rubicundus</i>	garibaldi	25	24.46
<i>Engraulis mordax</i>	northern anchovy	15	16.95
larval fish - damaged	unidentified larval fishes	11	10.63
Labrisomidae unid.	labrisomid blennies	11	8.99
Engraulidae unid.	anchovies	8	8.53
Atherinopsidae unid.	silversides	8	7.94
<i>Paralichthys californicus</i>	California halibut	7	7.27
<i>Gobiesox</i> spp.	clingfishes	5	4.58
<i>Cheilotrema saturnum</i>	black croaker	2	2.46
<i>Paralabrax</i> spp.	sand bass	2	2.46
<i>Syngnathus</i> spp.	pipefishes	2	1.93
Pomacentridae unid.	damsel-fishes	1	1.21
<i>Oxyjulis californica</i>	senorita	1	1.15
<i>Pleuronichthys ritteri</i>	spotted turbot	1	0.98
Scorpaenidae unid.	scorpionfishes	1	0.96
<i>Gibbonsia</i> spp.	clinid kelpfishes	1	0.72
<i>Roncador stearnsi</i>	spotfin croaker	1	0.72
		Total Fishes: 1,247	
Target Invertebrates			
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	10	8.95
<i>Lophopanopeus</i> spp. (megalops)	black-clawed crab megalops	10	7.73
<i>Pachycheles</i> spp. (megalops)	porcelain crabs megalops	4	4.58
<i>Petrolisthes</i> spp. (megalops)	porcelain crab megalops	3	2.97
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	2	1.81
Grapsidae unid. (megalops)	shore crab megalops	2	1.79
Brachyura unid. (megalops)	unidentified crab megalops	2	1.78
Hippoidea (megalops)	mole crab megalops	1	1.21
Paguridae unid. (megalops)	hermit crab megalops	1	1.21
Diogenidae (megalops)	left-handed hermit crabs	1	1.00
Porcellanidae unid. (megalops)	porcelain crab megalops	1	1.00
Majidae unid. (megalops)	spider crab megalops	1	0.96
<i>Pinnotheres</i> spp. (megalops)	pea crab megalops	1	0.94
		Total Target Invertebrates: 39	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA15
Start Date: 7/17/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	505	3,347.09
<i>Hypsoblennius</i> spp.	combtooth blennies	153	1,007.56
<i>Gobiesox</i> spp.	clingfishes	4	27.43
<i>Syngnathus</i> spp.	pipefishes	2	13.33
larval fish fragment	unidentified larval fishes	2	12.86
larval/post-larval fish unid.	larval fishes	1	7.35
<i>Atherinops affinis</i>	topsmelt	1	6.76
larval fish - damaged	unidentified larval fishes	1	6.50
Labrisomidae unid.	labrisomid blennies	1	6.12
Atherinopsidae unid.	silversides	1	5.91
		Total Fishes: 671	
Eggs			
fish eggs unid.	unidentified fish eggs	772	4,853.81
Sciaen. / Paralich. / Labridae (eggs)	fish eggs	6	39.99
Engraulidae unid. (eggs)	anchovy eggs	2	12.29
<i>Citharichthys</i> spp. (eggs)	sanddab eggs	2	11.74
Atherinopsidae unid. (eggs)	silverside eggs	1	5.91
		Total Eggs: 783	
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	1	6.50
Grapsidae unid. (megalops)	shore crab megalops	1	5.91
		Total Target Invertebrates: 2	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA16
Start Date: 7/31/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	713	5,139.94
<i>Hypsoblennius</i> spp.	combtooth blennies	207	1,488.87
Labrisomidae unid.	labrisomid blennies	7	51.01
<i>Syngnathus</i> spp.	pipefishes	5	35.64
larval fish fragment	unidentified larval fishes	5	33.23
<i>Oxyjulis californica</i>	senorita	2	14.47
Sciaenidae unid.	croakers	2	13.70
larval/post-larval fish unid.	larval fishes	1	7.53
<i>Genyonemus lineatus</i>	white croaker	1	6.67
larval fish - damaged	unidentified larval fishes	1	6.67
Engraulidae unid.	anchovies	1	6.54
<i>Engraulis mordax</i>	northern anchovy	1	6.54
<i>Gibbonsia</i> spp.	clinid kelpfishes	1	6.54
		Total Fishes: 947	
Eggs			
fish eggs unid.	unidentified fish eggs	211	1,482.42
Engraulidae unid. (eggs)	anchovy eggs	6	41.35
Paralichthyidae unid. (eggs)	sand flounder eggs	2	14.96
Sciaen. / Paralich. / Labridae (eggs)	fish eggs	2	13.94
		Total Eggs: 221	
Target Invertebrates			
<i>Petrolisthes</i> spp. (megalops)	porcelain crab megalops	1	7.61
		Total Target Invertebrates: 1	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA17
Start Date: 8/14/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	528	3,599.20
<i>Hypsoblennius</i> spp.	combtooth blennies	129	909.38
Labrisomidae unid.	labrisomid blennies	3	19.92
<i>Gibbonsia</i> spp.	clinid kelpfishes	2	12.91
larval fish fragment	unidentified larval fishes	1	7.51
<i>Syngnathus</i> spp.	pipefishes	1	6.40
		Total Fishes: 664	
Eggs			
fish eggs unid.	unidentified fish eggs	559	3,569.07
Engraulidae unid. (eggs)	anchovy eggs	3	19.92
Paralichthyidae unid. (eggs)	sand flounder eggs	2	13.96
		Total Eggs: 564	
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA17
Start Date: 8/14/2006
Stations: H1-H4

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	3,748	5,638.47
<i>Hypsoblennius</i> spp.	combtooth blennies	546	801.37
Labrisomidae unid.	labrisomid blennies	25	38.80
larval fish fragment	unidentified larval fishes	13	19.16
<i>Syngnathus</i> spp.	pipefishes	6	8.85
<i>Hypsypops rubicundus</i>	garibaldi	2	2.94
<i>Umbrina roncador</i>	yellowfin croaker	1	1.93
larvae, unidentified yolksac	unidentified yolksac larvae	1	1.83
<i>Seriphus politus</i>	queenfish	1	1.67
unidentified fish, damaged	unidentified damaged fish	1	1.39
		Total Fishes: 4,344	
Target Invertebrates			
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	1	1.78
Brachyura unid. (megalops)	unidentified crab megalops	1	1.21
		Total Target Invertebrates: 2	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA17
Start Date: 8/14/2006
Stations: O1-O3, S1-S3

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	746	622.44
<i>Hypsoblennius</i> spp.	combtooth blennies	291	275.73
<i>Hypsypops rubicundus</i>	garibaldi	34	31.46
Sciaenidae unid.	croakers	7	7.21
larvae, unidentified yolksac	unidentified yolksac larvae	7	7.11
<i>Paralichthys californicus</i>	California halibut	7	6.19
<i>Cheilotrema saturnum</i>	black croaker	5	4.84
unidentified fish, damaged	unidentified damaged fish	5	4.49
larval fish fragment	unidentified larval fishes	4	3.93
<i>Menticirrhus undulatus</i>	California corbina	3	2.55
<i>Gobiesox</i> spp.	clingfishes	2	1.99
<i>Oxyjulis californica</i>	senorita	2	1.95
Paralichthyidae unid.	sand flounders	2	1.66
Pleuronectidae unid.	righteye flounders	1	1.14
<i>Sphyræna argentea</i>	Pacific barracuda	1	1.12
<i>Peprilus simillimus</i>	Pacific butterfish	1	1.11
larval fish - damaged	unidentified larval fishes	1	1.05
<i>Paralabrax</i> spp.	sand bass	1	0.93
<i>Hypsoblennius jenkinsi</i>	mussel blenny	1	0.89
<i>Typhlogobius californiensis</i>	blind goby	1	0.89
<i>Lepidogobius lepidus</i>	bay goby	1	0.84
<i>Syngnathus</i> spp.	pipefishes	1	0.84
<i>Engraulis mordax</i>	northern anchovy	1	0.72
<i>Pleuronichthys guttulatus</i>	diamond turbot	1	0.71
Labrisomidae unid.	labrisomid blennies	1	0.69
		Total Fishes: 1,127	
Target Invertebrates			
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	23	17.44
Grapsidae unid. (megalops)	shore crab megalops	6	4.56
<i>Panulirus interruptus</i> (phyllosome)	California spiny lobster	3	2.99
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	3	2.86
Majidae unid. (megalops)	spider crab megalops	3	2.57
<i>Petrolisthes</i> spp. (megalops)	porcelain crab megalops	2	1.77
Porcellanidae unid. (megalops)	porcelain crab megalops	1	0.76
<i>Lophopanopeus</i> spp. (megalops)	black-clawed crab megalops	1	0.72
<i>Panulirus interruptus</i> (post-larval)	California spiny lobster	1	0.71
Brachyura unid. (megalops)	unidentified crab megalops	1	0.69
		Total Target Invertebrates: 44	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA18
Start Date: 8/28/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	590	4,091.12
<i>Hypsoblennius</i> spp.	combtooth blennies	339	2,304.83
Labrisomidae unid.	labrisomid blennies	22	160.02
larval fish fragment	unidentified larval fishes	5	35.13
<i>Syngnathus</i> spp.	pipefishes	2	14.15
<i>Pleuronichthys guttulatus</i>	diamond turbot	2	14.09
Sciaenidae unid.	croakers	2	13.27
<i>Gobiesox</i> spp.	clingfishes	1	7.91
<i>Roncador stearnsi</i>	spotfin croaker	1	7.52
unidentified fish, damaged	unidentified damaged fish	1	7.25
		Total Fishes: 965	
Eggs			
fish eggs unid.	unidentified fish eggs	302	2,096.90
Engraulidae unid. (eggs)	anchovy eggs	21	151.89
Paralichthyidae unid. (eggs)	sand flounder eggs	10	65.42
Sciaen. / Paralich. / Labridae (eggs)	fish eggs	5	34.91
		Total Eggs: 338	
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA19
Start Date: 9/11/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	218	1,559.56
<i>Hypsoblennius</i> spp.	combtooth blennies	165	1,157.88
<i>Seriphus politus</i>	queenfish	4	31.40
Syngnathidae unid.	pipefishes	1	7.46
larval fish - damaged	unidentified larval fishes	1	6.79
Labrisomidae unid.	labrisomid blennies	1	5.98
		Total Fishes: 390	
Eggs			
fish eggs unid.	unidentified fish eggs	72	515.96
Paralichthyidae unid. (eggs)	sand flounder eggs	7	50.94
		Total Eggs: 79	
Target Invertebrates			
Grapsidae unid. (megalops)	shore crab megalops	3	20.63
		Total Target Invertebrates: 3	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA19
Start Date: 9/11/2006
Stations: H1-H4

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	902	1,466.82
<i>Hypsoblennius</i> spp.	combtooth blennies	262	426.93
Labrisomidae unid.	labrisomid blennies	8	12.77
<i>Seriphus politus</i>	queenfish	6	10.38
<i>Syngnathus</i> spp.	pipefishes	4	6.76
Engraulidae unid.	anchovies	3	5.56
<i>Gibbonsia</i> spp.	clinid kelpfishes	3	5.24
larval fish - damaged	unidentified larval fishes	3	5.19
Sciaenidae unid.	croakers	1	1.34
<i>Cheilotrema saturnum</i>	black croaker	1	1.33
		Total Fishes: 1,193	
Target Invertebrates			
Grapsidae unid. (megalops)	shore crab megalops	5	8.01
Brachyura unid. (megalops)	unidentified crab megalops	4	7.12
		Total Target Invertebrates: 9	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA19
Start Date: 9/11/2006
Stations: O1-O3, S1-S3

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	200	226.65
<i>Hypsoblennius</i> spp.	combtooth blennies	173	188.92
larvae, unidentified yolksac	unidentified yolksac larvae	61	69.80
<i>Paralabrax</i> spp.	sand bass	47	52.97
Engraulidae unid.	anchovies	44	50.60
<i>Paralichthys californicus</i>	California halibut	23	26.94
Sciaenidae unid.	croakers	11	12.65
<i>Seriphus politus</i>	queenfish	10	12.08
<i>Pleuronichthys guttulatus</i>	diamond turbot	9	9.50
<i>Genyonemus lineatus</i>	white croaker	8	9.24
<i>Symphurus atricauda</i>	California tonguefish	4	4.51
<i>Citharichthys stigmaeus</i>	speckled sanddab	3	3.61
Labrisomidae unid.	labrisomid blennies	3	3.46
<i>Ophidion scrippsae</i>	basketweave cusk-eel	3	3.12
Blennioidei unid.	blennies	2	2.50
<i>Citharichthys sordidus</i>	Pacific sanddab	2	2.46
<i>Pleuronichthys verticalis</i>	hornyhead turbot	2	2.41
<i>Gobiesox</i> spp.	clingfishes	2	2.30
<i>Gillichthys mirabilis</i>	longjaw mudsucker	2	2.07
<i>Pleuronichthys ritteri</i>	spotted turbot	2	2.07
<i>Menticirrhus undulatus</i>	California corbina	2	1.90
<i>Umbrina roncador</i>	yellowfin croaker	2	1.87
<i>Roncador stearnsi</i>	spotfin croaker	1	1.34
<i>Sardinops sagax</i>	Pacific sardine	1	1.34
<i>Halichoeres semicinctus</i>	rock wrasse	1	1.25
larval fish fragment	unidentified larval fishes	1	1.23
<i>Semicossyphus pulcher</i>	California sheephead	1	1.22
<i>Girella nigricans</i>	opaleye	1	1.18
Pleuronectidae unid.	righteye flounders	1	1.18
larval fish - damaged	unidentified larval fishes	1	1.13
Pleuronectiformes unid.	flatfishes	1	1.13
<i>Heterostichus rostratus</i>	giant kelpfish	1	1.03
Ophidiidae unid.	cusk-eels	1	1.03
<i>Syngnathus</i> spp.	pipefishes	1	1.03
<i>Cheilotrema saturnum</i>	black croaker	1	1.02
Paralichthyidae unid.	sand flounders	1	0.88
		Total Fishes: 629	

(continued)

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA19
Start Date: 9/11/2006
Stations: O1-O3, S1-S3 (continued)

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Target Invertebrates			
Grapsidae unid. (megalops)	shore crab megalops	8	9.92
Brachyura unid. (megalops)	unidentified crab megalops	4	5.01
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	3	3.54
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	2	2.40
<i>Cancer antennarius</i> (megalops)	brown rock crab megalops	1	1.34
Majidae unid. (megalops)	spider crab megalops	1	1.25
Porcellanidae unid. (megalops)	porcelain crab megalops	1	1.25
<i>Pachycheles</i> spp. (megalops)	porcelain crabs megalops	1	1.18
		Total Target Invertebrates: 21	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA20
Start Date: 9/25/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	412	2,964.52
<i>Hypsoblennius</i> spp.	combtooth blennies	217	1,540.01
Labrisomidae unid.	labrisomid blennies	124	861.01
larval fish fragment	unidentified larval fishes	5	34.03
<i>Gobiesox</i> spp.	clingfishes	3	20.78
Syngnathidae unid.	pipefishes	2	11.90
<i>Pleuronichthys guttulatus</i>	diamond turbot	1	6.75
		Total Fishes: 764	
Eggs			
Engraulidae unid. (eggs)	anchovy eggs	2	12.71
		Total Eggs: 2	
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA21
Start Date: 10/9/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	209	1,443.96
<i>Hypsoblennius</i> spp.	combtooth blennies	121	801.67
Labrisomidae unid.	labrisomid blennies	94	542.31
<i>Gillichthys mirabilis</i>	longjaw mudsucker	3	20.94
larval fish - damaged	unidentified larval fishes	3	19.88
larvae, unidentified yolksac	unidentified yolksac larvae	3	19.71
larval fish fragment	unidentified larval fishes	1	6.65
<i>Seriphus politus</i>	queenfish	1	6.19
		Total Fishes: 435	
Eggs			
No Eggs			
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA21
Start Date: 10/9/2006
Stations: H1-H4

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	548	742.16
<i>Hypsoblennius</i> spp.	combtooth blennies	104	156.22
<i>Gillichthys mirabilis</i>	longjaw mudsucker	7	10.00
larval fish fragment	unidentified larval fishes	8	9.82
<i>Genyonemus lineatus</i>	white croaker	6	8.10
larval fish - damaged	unidentified larval fishes	4	6.59
Engraulidae unid.	anchovies	3	3.81
Labrisomidae unid.	labrisomid blennies	2	2.87
<i>Atherinopsis californiensis</i>	jacksmelt	1	1.72
Gobiesocidae unid.	clingfishes	1	1.72
<i>Gobiesox</i> spp.	clingfishes	1	1.37
<i>Pleuronichthys guttulatus</i>	diamond turbot	1	1.36
<i>Syngnathus</i> spp.	pipefishes	1	1.36
		Total Fishes: 687	
Target Invertebrates			
Brachyura unid. (megalops)	unidentified crab megalops	2	2.93
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	1	1.36
Grapsidae unid. (megalops)	shore crab megalops	1	1.15
		Total Target Invertebrates: 4	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA21
Start Date: 10/9/2006
Stations: O1-O3, S1-S3

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	115	124.26
<i>Genyonemus lineatus</i>	white croaker	89	97.46
<i>Hypsoblennius</i> spp.	combtooth blennies	48	52.42
larvae, unidentified yolksac	unidentified yolksac larvae	9	9.54
<i>Triphoturus mexicanus</i>	Mexican lampfish	4	4.35
Atherinopsidae unid.	silversides	4	4.26
Engraulidae unid.	anchovies	3	3.54
larval fish fragment	unidentified larval fishes	3	3.07
<i>Engraulis mordax</i>	northern anchovy	2	2.56
Sciaenidae unid.	croakers	1	1.22
<i>Pleuronichthys guttulatus</i>	diamond turbot	1	1.04
<i>Paralichthys californicus</i>	California halibut	1	1.03
Blennioidei unid.	blennies	1	1.02
		Total Fishes: 281	
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	4	4.97
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	1	1.22
		Total Target Invertebrates: 5	

Alamitos Generating Station
 Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA22
 Start Date: 10/23/2006
 Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
<i>Hypsoblennius</i> spp.	combtooth blennies	124	883.75
Gobiidae unid.	gobies	118	825.99
Labrisomidae unid.	labrisomid blennies	79	534.68
<i>Gobiesox</i> spp.	clingfishes	3	20.93
larval fish fragment	unidentified larval fishes	2	14.26
<i>Gillichthys mirabilis</i>	longjaw mudsucker	2	14.10
unidentified fish, damaged	unidentified damaged fish	1	7.53
<i>Leuresthes tenuis</i>	California grunion	1	7.13
<i>Gibbonsia</i> spp.	clinid kelpfishes	1	6.83
<i>Pleuronichthys guttulatus</i>	diamond turbot	1	6.83
	Total Fishes:	332	
Eggs			
No Eggs			
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA23
Start Date: 11/6/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	106	712.20
<i>Hypsoblennius</i> spp.	combtooth blennies	89	593.15
Labrisomidae unid.	labrisomid blennies	25	162.23
larval fish - damaged	unidentified larval fishes	4	24.68
<i>Gobiesox</i> spp.	clingfishes	2	15.99
<i>Gillichthys mirabilis</i>	longjaw mudsucker	2	14.53
Clinidae unid.	kelp blennies	2	14.16
<i>Gibbonsia</i> spp.	clinid kelpfishes	2	12.86
larval fish fragment	unidentified larval fishes	2	12.38
<i>Heterostichus rostratus</i>	giant kelpfish	1	8.00
<i>Genyonemus lineatus</i>	white croaker	1	7.19
<i>Pleuronichthys guttulatus</i>	diamond turbot	1	6.37
<i>Atherinopsis californiensis</i>	jacksmelt	1	5.73
		Total Fishes: 238	
Eggs			
fish eggs unid.	unidentified fish eggs	2	12.21
Paralichthyidae unid. (eggs)	sand flounder eggs	1	6.20
		Total Eggs: 3	
Target Invertebrates			
Grapsidae unid. (megalops)	shore crab megalops	1	6.97
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	1	5.96
		Total Target Invertebrates: 2	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA23
Start Date: 11/6/2006
Stations: H1-H4

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	456	718.18
<i>Hypsoblennius</i> spp.	combtooth blennies	62	104.02
<i>Genyonemus lineatus</i>	white croaker	7	10.65
larval fish fragment	unidentified larval fishes	6	8.69
<i>Gillichthys mirabilis</i>	longjaw mudsucker	4	7.10
<i>Engraulis mordax</i>	northern anchovy	4	7.03
larval fish - damaged	unidentified larval fishes	2	3.65
<i>Leuresthes tenuis</i>	California grunion	2	3.55
<i>Gibbonsia</i> spp.	clinid kelpfishes	2	3.40
<i>Pleuronichthys guttulatus</i>	diamond turbot	2	2.73
larval/post-larval fish unid.	larval fishes	1	1.87
<i>Gobiesox</i> spp.	clingfishes	1	1.78
<i>Syngnathus</i> spp.	pipefishes	1	1.66
Pleuronectidae unid.	righteye flounders	1	1.55
Sciaenidae unid.	croakers	1	1.16
		Total Fishes: 552	
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	3	5.45
Majidae unid. (megalops)	spider crab megalops	2	3.40
Grapsidae unid. (megalops)	shore crab megalops	1	1.81
Brachyura unid. (megalops)	unidentified crab megalops	1	1.80
		Total Target Invertebrates: 7	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA23
Start Date: 11/6/2006
Stations: O1-O3, S1-S3

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	312	332.57
<i>Genyonemus lineatus</i>	white croaker	244	273.07
larvae, unidentified yolksac	unidentified yolksac larvae	32	36.47
<i>Hypsoblennius</i> spp.	combtooth blennies	23	26.23
<i>Engraulis mordax</i>	northern anchovy	18	18.89
<i>Pleuronichthys guttulatus</i>	diamond turbot	8	8.81
larval fish - damaged	unidentified larval fishes	6	6.69
<i>Paralichthys californicus</i>	California halibut	5	5.76
larval fish fragment	unidentified larval fishes	5	5.25
Sciaenidae unid.	croakers	3	3.85
<i>Pleuronichthys ritteri</i>	spotted turbot	2	2.67
<i>Atherinopsis californiensis</i>	jacksmelt	2	2.56
Engraulidae unid.	anchovies	2	2.32
<i>Pleuronichthys verticalis</i>	hornyhead turbot	1	1.06
		Total Fishes: 663	
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	34	36.76
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	4	4.21
Majidae unid. (megalops)	spider crab megalops	2	2.00
Grapsidae unid. (megalops)	shore crab megalops	1	1.06
Paguridae unid. (megalops)	hermit crab megalops	1	1.06
		Total Target Invertebrates: 42	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA24
Start Date: 11/20/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	202	1,404.42
<i>Hypsoblennius</i> spp.	combtooth blennies	110	770.81
Labrisomidae unid.	labrisomid blennies	5	32.12
larval fish - damaged	unidentified larval fishes	2	14.27
<i>Gobiesox</i> spp.	clingfishes	2	13.65
Clinidae unid.	kelp blennies	1	7.63
<i>Gillichthys mirabilis</i>	longjaw mudsucker	1	6.96
larval fish fragment	unidentified larval fishes	1	6.45
		Total Fishes: 324	
Eggs			
No Eggs			
Target Invertebrates			
No Invertebrates			

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA25
Start Date: 12/4/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	77	556.36
<i>Hypsoblennius</i> spp.	combtooth blennies	35	258.23
Atherinopsidae unid.	silversides	13	94.59
Labrisomidae unid.	labrisomid blennies	6	44.02
larval fish fragment	unidentified larval fishes	2	14.52
<i>Gillichthys mirabilis</i>	longjaw mudsucker	2	14.47
larval fish - damaged	unidentified larval fishes	1	7.23
		Total Fishes: 136	
Eggs			
fish eggs unid.	unidentified fish eggs	71	514.68
Sciaenidae unid. (eggs)	croaker eggs	1	7.23
		Total Eggs: 72	
Target Invertebrates			
Grapsidae unid. (megalops)	shore crab megalops	2	13.68
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	1	7.76
		Total Target Invertebrates: 3	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA25
Start Date: 12/4/2006
Stations: H1-H4

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	446	670.76
<i>Hypsoblennius</i> spp.	combtooth blennies	52	73.77
<i>Genyonemus lineatus</i>	white croaker	31	50.80
<i>Engraulis mordax</i>	northern anchovy	11	15.59
<i>Atherinopsis californiensis</i>	jacksmelt	4	6.49
Atherinopsidae unid.	silversides	4	5.79
larval fish fragment	unidentified larval fishes	3	3.83
<i>Gibbonsia</i> spp.	clinid kelpfishes	2	3.28
<i>Heterostichus rostratus</i>	giant kelpfish	2	3.10
<i>Gillichthys mirabilis</i>	longjaw mudsucker	2	2.79
<i>Atherinops affinis</i>	topsmelt	1	1.71
larval fish - damaged	unidentified larval fishes	1	1.69
larval/post-larval fish unid.	larval fishes	1	1.68
<i>Leptocottus armatus</i>	Pacific staghorn sculpin	1	1.49
<i>Pleuronichthys guttulatus</i>	diamond turbot	1	1.17
		Total Fishes: 562	
Target Invertebrates			
Grapsidae unid. (megalops)	shore crab megalops	15	20.55
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	11	17.55
Majidae unid. (megalops)	spider crab megalops	4	5.63
Paguridae unid. (megalops)	hermit crab megalops	2	3.46
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	2	3.21
Brachyura unid. (megalops)	unidentified crab megalops	2	2.65
<i>Cancer anthonyi</i> (megalops)	yellow crab megalops	1	1.73
		Total Target Invertebrates: 37	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA25
Start Date: 12/4/2006
Stations: O1-O3, S1-S3

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
<i>Genyonemus lineatus</i>	white croaker	650	668.08
Gobiidae unid.	gobies	315	313.16
<i>Engraulis mordax</i>	northern anchovy	34	35.03
<i>Pleuronichthys guttulatus</i>	diamond turbot	25	26.73
<i>Hypsoblennius</i> spp.	combtooth blennies	18	17.89
<i>Lepidogobius lepidus</i>	bay goby	11	10.34
larval fish fragment	unidentified larval fishes	9	9.69
<i>Gillichthys mirabilis</i>	longjaw mudsucker	9	8.97
<i>Paralichthys californicus</i>	California halibut	8	8.67
<i>Pleuronichthys ritteri</i>	spotted turbot	7	7.08
larvae, unidentified yolksac	unidentified yolksac larvae	7	6.98
Atherinopsidae unid.	silversides	6	6.16
<i>Citharichthys stigmaeus</i>	speckled sanddab	5	5.11
larval fish - damaged	unidentified larval fishes	4	4.05
<i>Citharichthys sordidus</i>	Pacific sanddab	3	3.20
<i>Gibbonsia</i> spp.	clinid kelpfishes	3	3.15
<i>Clinocottus analis</i>	wooly sculpin	2	2.30
<i>Atherinopsis californiensis</i>	jacksmelt	2	2.00
Pleuronectidae unid.	righteye flounders	1	1.08
<i>Leptocottus armatus</i>	Pacific staghorn sculpin	1	1.06
Cottidae unid.	sculpins	1	1.02
		Total Fishes: 1,121	
Target Invertebrates			
<i>Pugettia</i> spp. (megalops)	kelp crabs megalops	168	175.34
Majidae unid. (megalops)	spider crab megalops	27	27.13
<i>Pinnixa</i> spp. (megalops)	pea crabs megalops	12	12.50
Paguridae unid. (megalops)	hermit crab megalops	5	5.10
Grapsidae unid. (megalops)	shore crab megalops	3	2.99
Diogenidae (megalops)	left-handed hermit crabs	1	1.02
<i>Cancer antennarius</i> (megalops)	brown rock crab megalops	1	0.98
Brachyura unid. (megalops)	unidentified crab megalops	1	0.97
		Total Target Invertebrates: 218	

Alamitos Generating Station
Entrainment Study - Fish and Invertebrate Abundances

Survey: ABEA26
Start Date: 12/18/2006
Stations: E1-E2

Taxon	Common Name	Count	Mean Concentration (#/1,000 m ³)
Fishes			
Gobiidae unid.	gobies	176	1,162.46
<i>Hypsoblennius</i> spp.	combtooth blennies	68	446.07
Atherinopsidae unid.	silversides	7	46.38
larval fish fragment	unidentified larval fishes	5	33.80
<i>Gobiesox</i> spp.	clingfishes	4	27.35
Cottidae unid.	sculpins	2	14.24
<i>Gibbonsia</i> spp.	clinid kelpfishes	2	13.59
larvae, unidentified yolksac	unidentified yolksac larvae	2	12.76
<i>Typhlogobius californiensis</i>	blind goby	1	7.12
<i>Pleuronichthys guttulatus</i>	diamond turbot	1	6.94
<i>Genyonemus lineatus</i>	white croaker	1	6.87
<i>Ruscarius creaseri</i>	roughcheek sculpin	1	6.65
Sciaenidae unid.	croakers	1	6.65
Blennioidei unid.	blennies	1	6.52
<i>Lepidogobius lepidus</i>	bay goby	1	6.37
		Total Fishes: 273	
Eggs			
fish eggs unid.	unidentified fish eggs	6	39.86
Paralichthyidae unid. (eggs)	sand flounder eggs	1	6.37
		Total Eggs: 7	
Target Invertebrates			
Grapsidae unid. (megalops)	shore crab megalops	1	7.12
		Total Target Invertebrates: 1	