

CalCOFI Sample Comparison ERDAPP & PIC DBs

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ERDAPP Data

All Stations

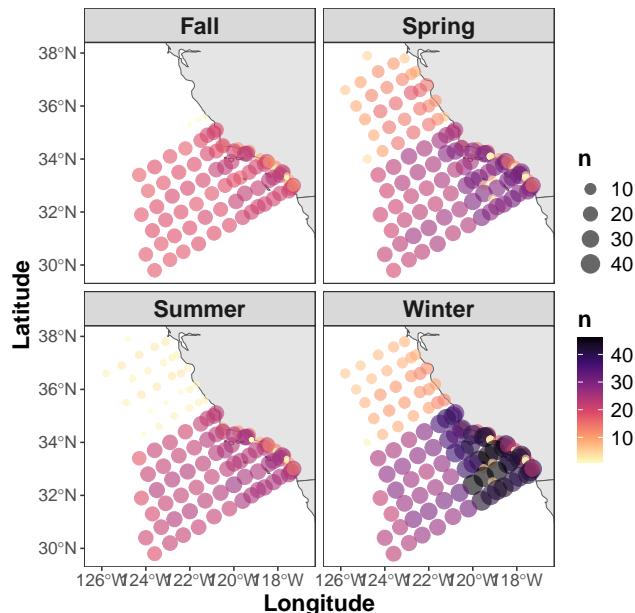
General Statistics

Unique Samples, Cruises, and Sites:

n_distinct(cruise)	n_distinct(site)	n_distinct(year_season_site)
109	129	7031

This is an optimistic number based on the event records for formalin preserved net tows. Likely not all of these samples exist.

Map of All Stations



Spring and Winter sampling is more consistent and extends further north. Spring, at least for ichthyoplankton, is the time of the highest observed diversity coinciding with peak spawning for many species.

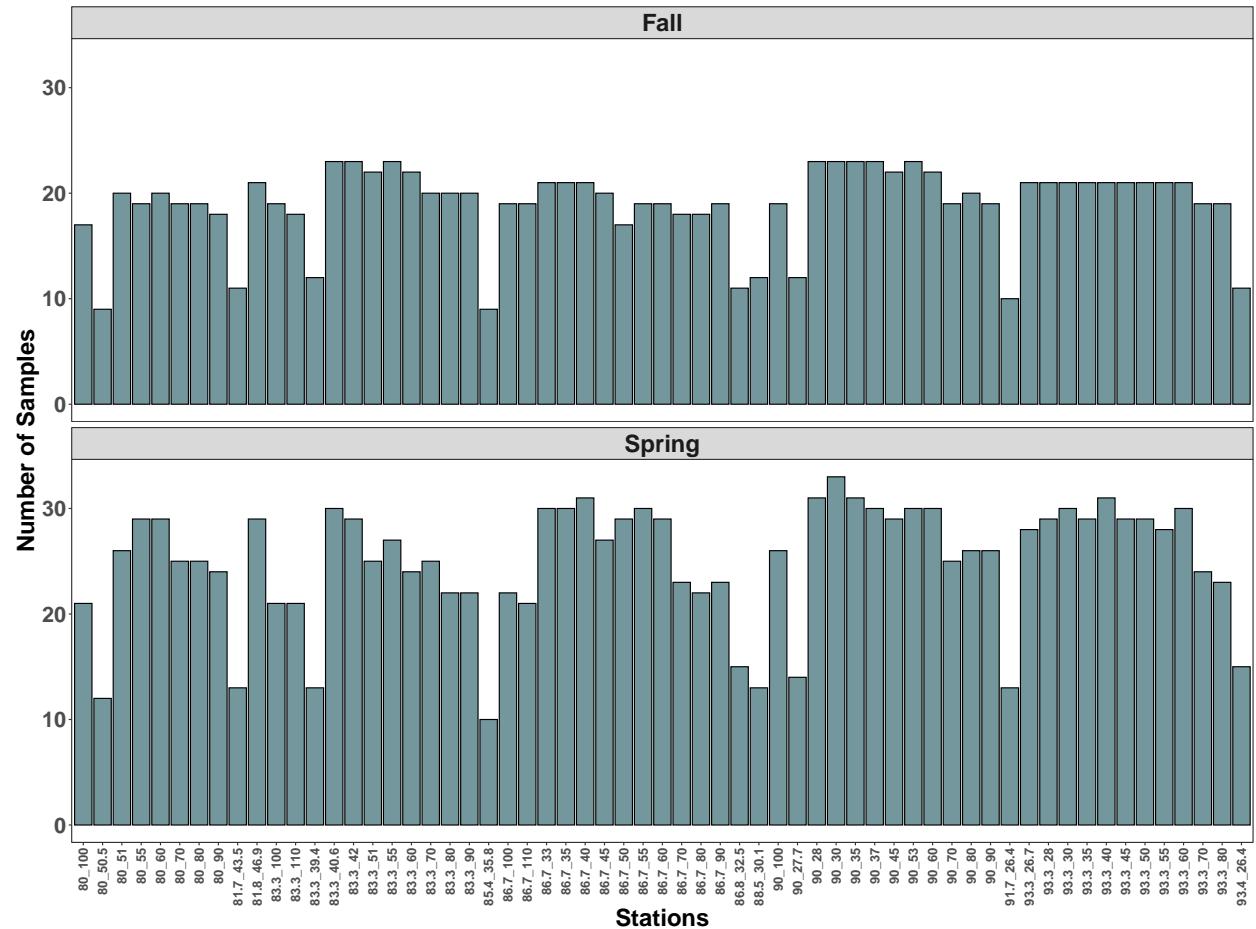
Focus on Southern California Bright Spring & Fall

General Statistics

Unique Samples, Cruises, and Sites:

n_distinct(year_site)	n_distinct(cruise)	n_distinct(site)	n_distinct(year_season_site)
1420	49	61	2389

Sampling Distribution of Samples:



Option a8 Selected Priority Sampling - Coastal Focus 1996-2023

Main Target: Southern California Bight Coastal Eutrophication Driven Hypoxia

The focus is on the coastal grid capturing areas inside and outside the reoccurring hypoxic eddy centered south of Santa Catalina Island. Capturing 25 years of sampling including multiple El Niño and La Niñas, marine heat waves, and documented regime shifts in ichthyoplankton (notably tropicalization of southern mesopelagic species).

Secondary Targets: National Marine Sanctuaries & Wind Lease Areas

Capturing Spring data from further North provides baseline data inside and outside of the Channel Islands NMS, proposed Chumash Heritage NMS, and the Morro Bay Wind Lease Area. This also captures inshore state waters supporting OPC, CDFW, and SCCOOS priorities.

There is a diminished focus on the offshore stations, but hopefully still enough spatial and temporal scale to provide regional resolution.

This set up also lends itself to systematic partitioning of the work. On average there are ~27 jars per cruise and so can process 3-4 jars per batch. Can also focus on all Spring samples first and then decide to expand to Fall sampling as a second set.

Summary Table

n_distinct(year_season_site)	n_distinct(year_site)	n_distinct(cruise)	n_distinct(site)
1212	770	51	38

ERDAPP Option a8 Cruise Summary

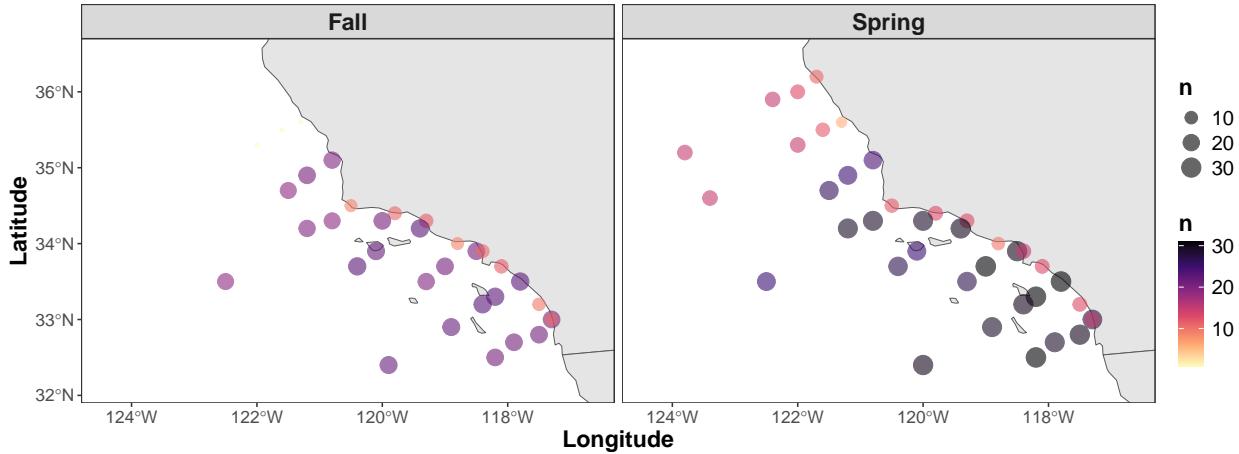
cruise	Stations
199604	21
199610	22
199803	5
199804	29
199805	6
199809	22
199810	8
199811	7
199904	22
199910	22
200004	22
200010	22
200104	22
200110	22
200204	22
200211	22
200304	28
200310	22
200404	30
200411	30
200504	35
200511	30

cruise	Stations
200604	30
200610	30
200704	21
200711	24
200804	24
200810	28
200903	26
200904	7
200911	26
201004	33
201011	23
201104	31
201110	30
201203	20
201204	10
201210	30
201304	31
201311	29
201404	29
201411	30
201504	30
201511	28
201604	36
201704	38
201804	36
201904	28
202105	19
202204	38
202210	5

Average Samples per Cruise

mean(n)	max(n)	min(n)
27.17647	56	5

Map of Selected Sites (Option a8)



PIC Data

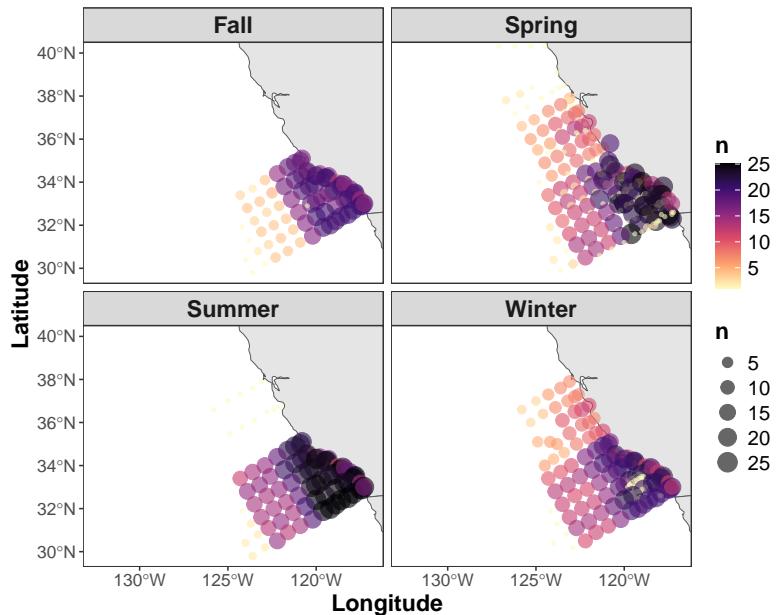
General Statistics

Unique Samples, Cruises, and Sites:

n_distinct(Cruise)	n_distinct(site)	n_distinct(year_season_site)
91	304	5444

This is an optimistic number based on the event records for formalin preserved net tows. Likely not all of these samples exist.

Map of All Stations



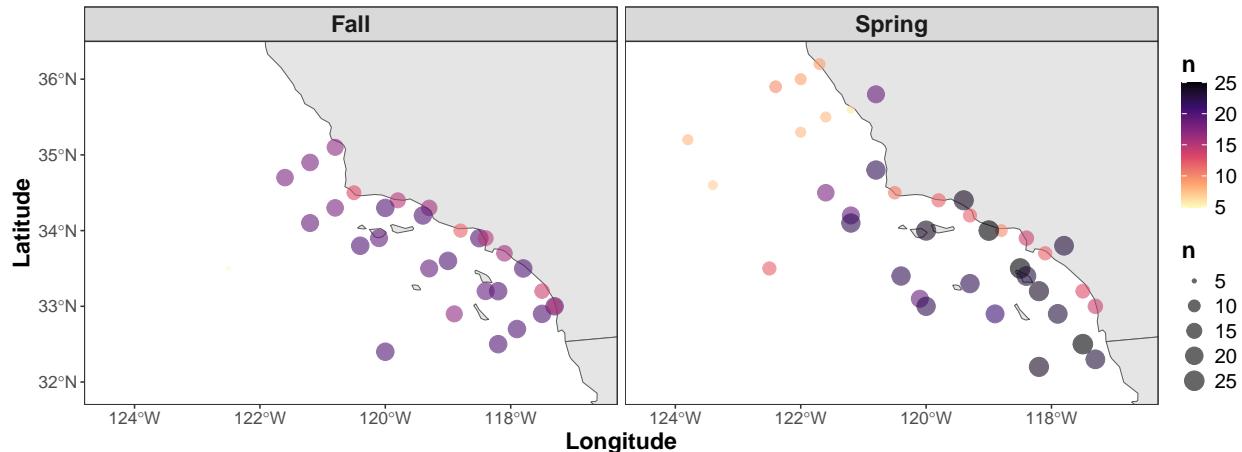
Spring and Winter sampling is more consistent and extends further north. Spring, at least for ichthyoplankton, is the time of the highest observed diversity coinciding with peak spawning for many species.

Option a8 Selected Priority Sampling - Coastal Focus 1996-2023

Unique Samples, Cruises, and Sites:

n_distinct(Cruise)	n_distinct(site)	n_distinct(year_season_site)
44	38	1163

Map of Selected Sites (Option a8)



PIC Option a8 Cruise Summary

Cruise	Stations
199604	19
199904	21
199910	21
200004	21
200010	20
200104	21
200204	21
200211	21
200304	22
200310	20
200404	27
200411	29
200504	32
200511	29

Cruise	Stations
200604	29
200610	29
200704	20
200711	23
200804	24
200810	27
200903	26
200911	25
201004	33
201010	23
201104	31
201110	29
201203	17
201210	29
201304	29
201311	26
201404	24
201411	29
201504	30
201511	27
201604	36
201704	36
201711	29
201804	36
201810	29
201904	27
201911	30
202010	30
202105	19
202204	37

Comparison of ERDAPP and PIC DBs

In ERDAPP not in PIC

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## [1] 219
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In PIC not in ERDAPP

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## [1] 141
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Shared Samples in PIC & ERDAPP

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## [1] 1022
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Differences Per Year

year	ERDAPP (n)	PIC (n)	Difference
1996	43	19	24
1998	119	0	119
1999	86	42	44
2000	65	41	24
2001	44	21	23
2002	44	42	2
2003	50	42	8
2004	67	56	11
2005	65	61	4
2006	60	58	2
2007	45	43	2
2008	52	51	1
2009	59	51	8
2010	56	56	0
2011	62	61	1
2012	60	46	14
2013	85	55	30
2014	66	58	8
2015	58	57	1
2016	36	36	0
2017	38	65	-27
2018	36	65	-29
2019	28	57	-29
2021	19	19	0
2022	43	37	6