



Fishery Analysis on the Basses in Southern California

E.T. Jarvis, H.L. Gliniak, and C.F. Valle

**Marine Resources Committee Mtg.
Santa Barbara, California**

January 18, 2012



Overview

- **Background**
- **Summary of fishery analysis**
- **Management options for consideration**
- **Department recommendations**

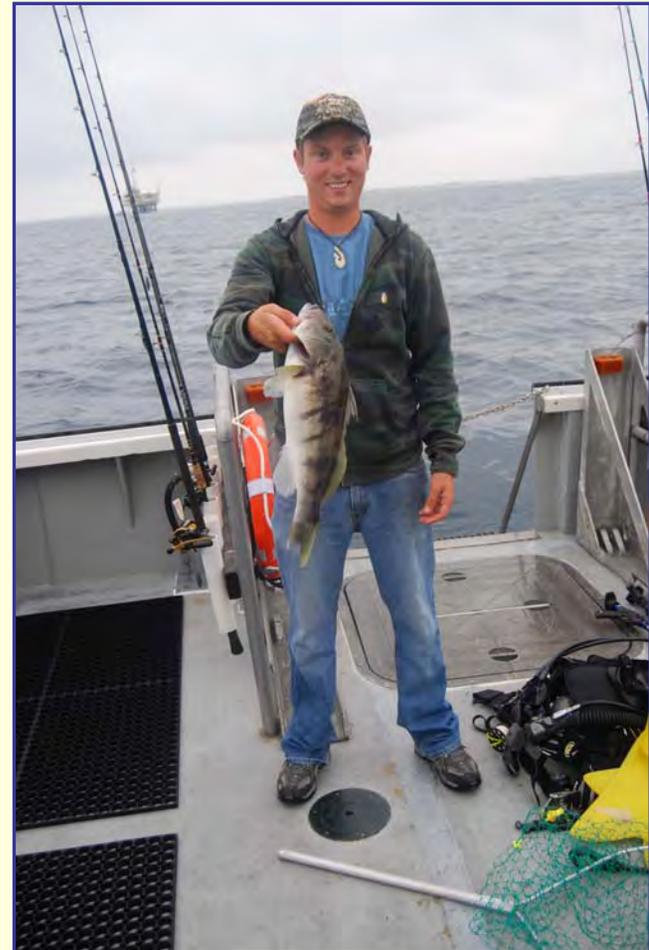
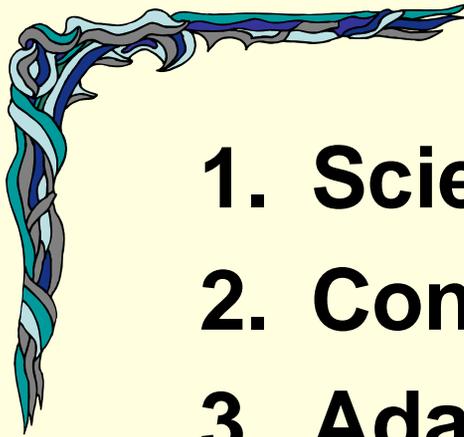


Photo: Tom Schabow



Policies for Achieving the Goals of the Marine Life Management Act (MLMA)



- 1. Science**
- 2. Constituent Involvement**
- 3. Adaptive Management**
- 4. Socio-Economic Considerations**

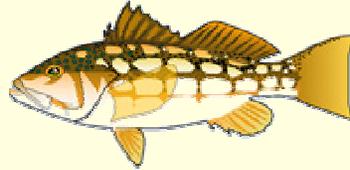


Photos: DFG





Kelp Bass, *Paralabrax clathratus*



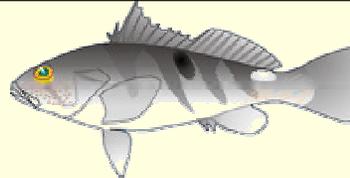
- **Range: Columbia River, WA/OR border to Magdalena Bay, Baja**
- **Associated with kelp/rocky reef**
- **Popular recreational fishery since 1940s**
- **Mainland and island fishery**



Photo: Rob Johnson



Barred Sand Bass, *Paralabrax nebulifer*



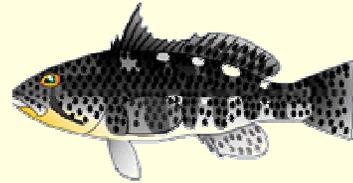
- **Range: Santa Cruz, CA to Magdalena Bay, Baja**
- **Associated with sand/reef**
- **Popular recreational fishery since 1970s**
- **Mainland fishery (spawning aggregations)**



Photo: author unknown



Spotted Sand Bass, *Paralabrax maculatofasciatus*



- **Range: Monterey, CA to Mazatlan, Mexico/Gulf of Calif.**
- **Associated with bays/harbors**
- **Popular recreational fishery since 1980s**
- **Mainland fishery (catch-and-release)**

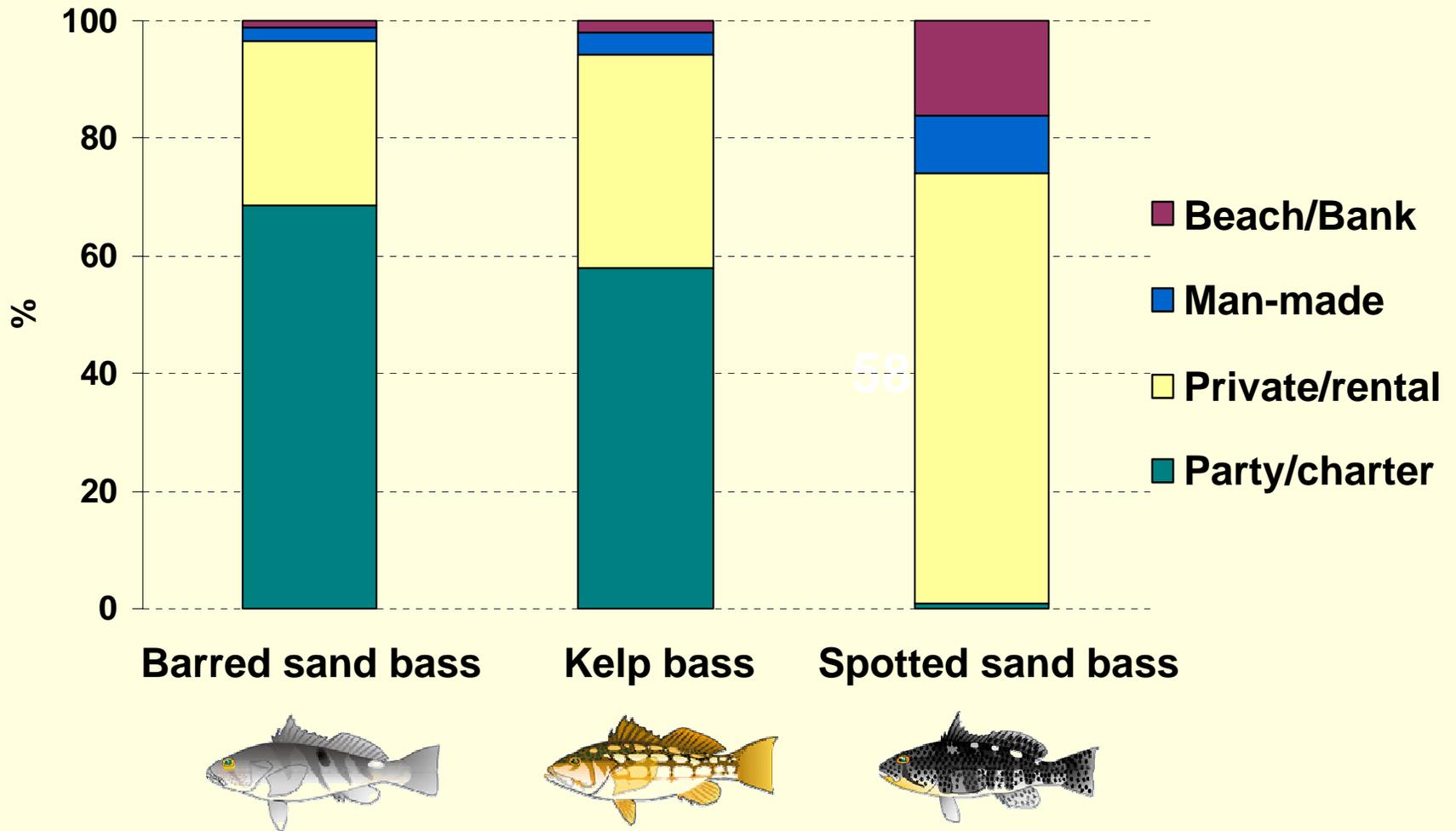


Photo: Dave Rudie



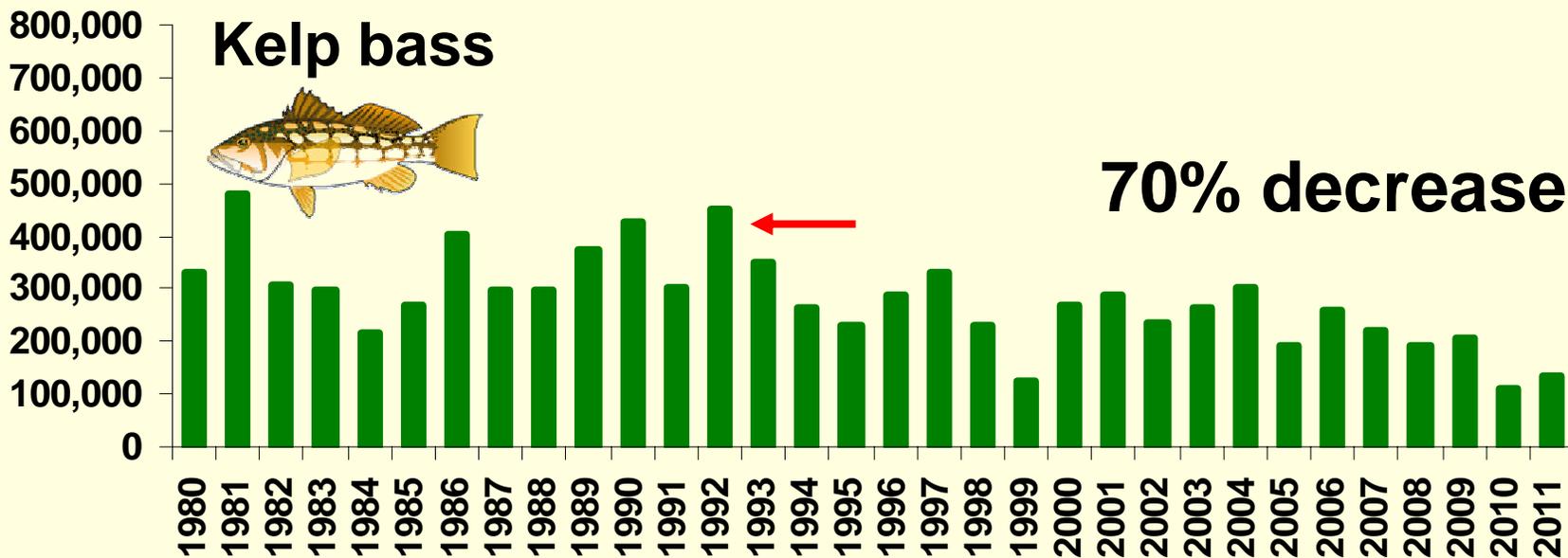
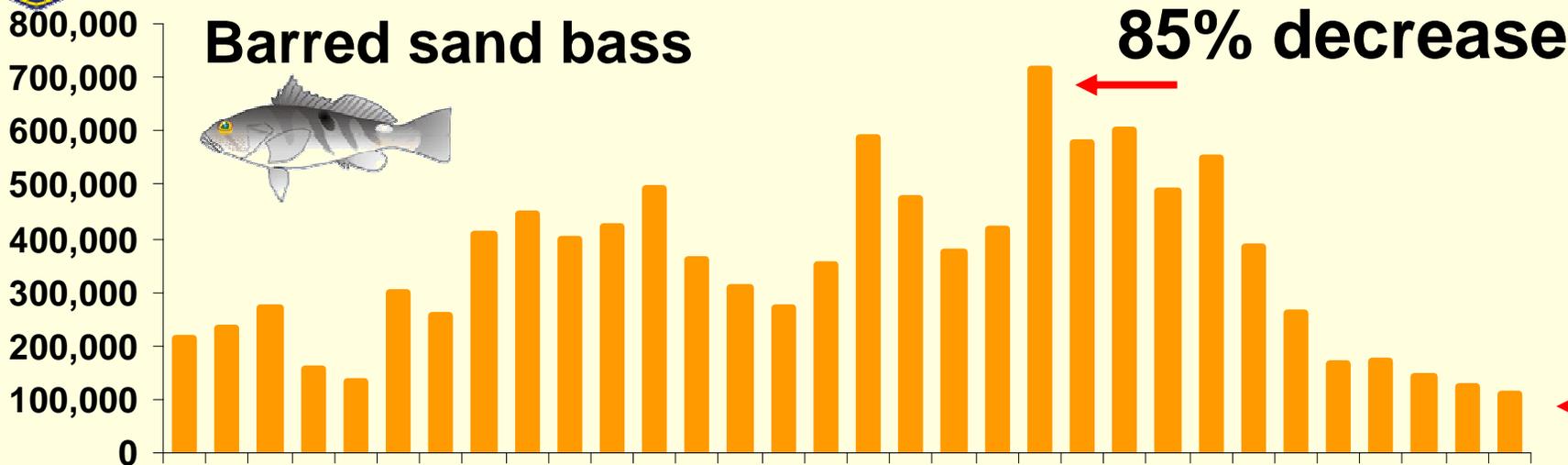
Percent of Total Harvested Catch by Fishing Mode

(California Recreational Fisheries Survey, 2004-2010)



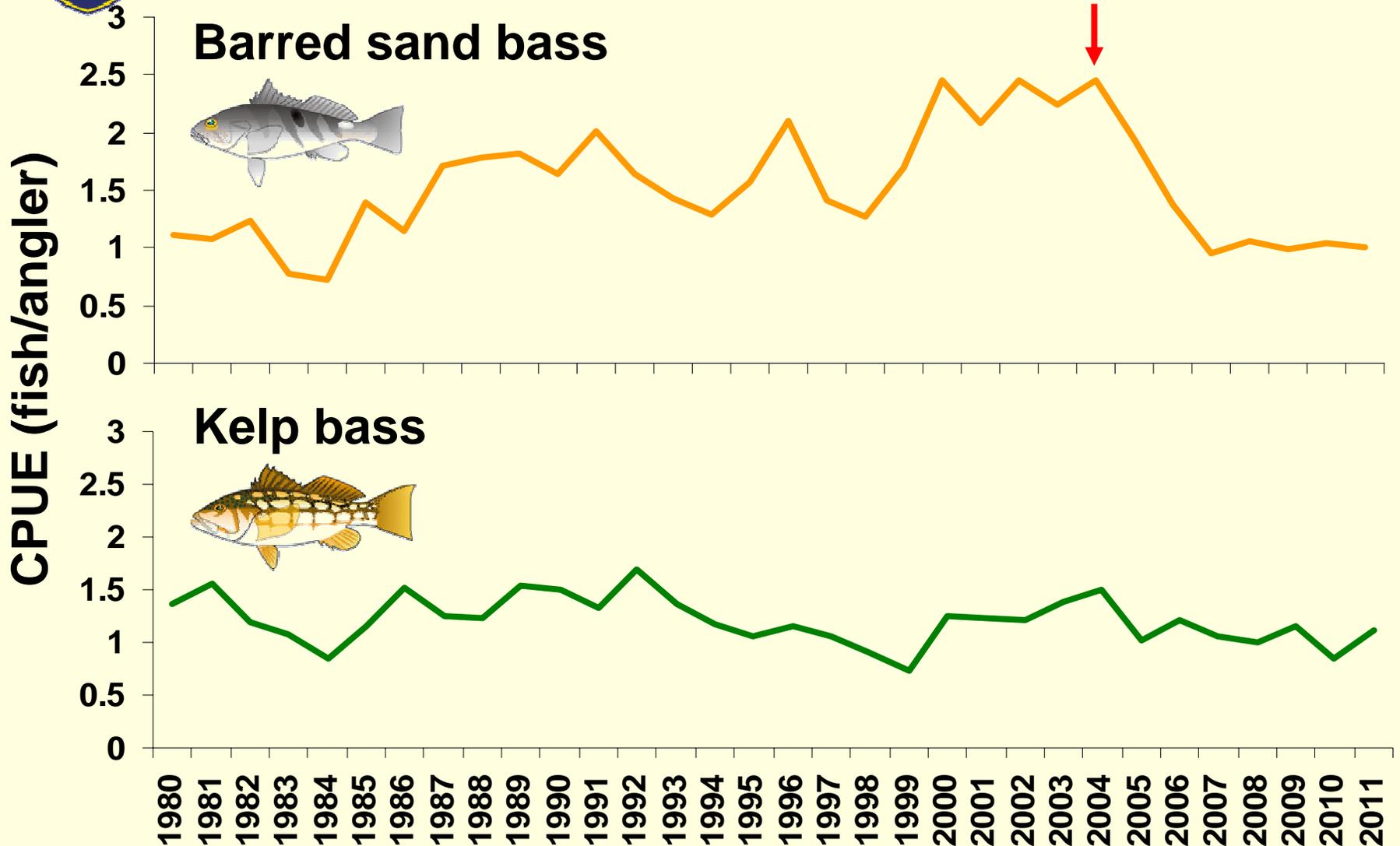


CPFV landings (1980-2011)



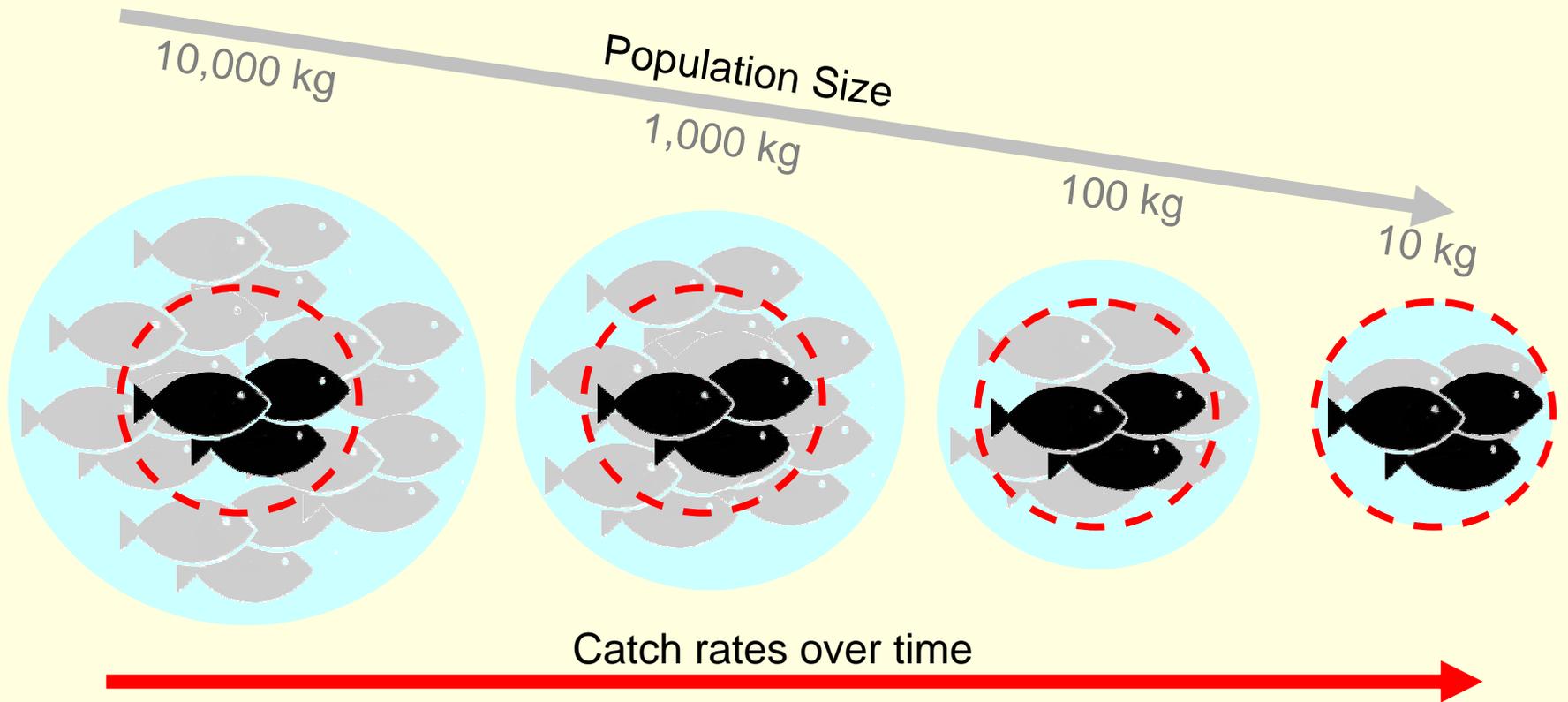


CPFV catch per unit effort (CPUE) (1980-2011)





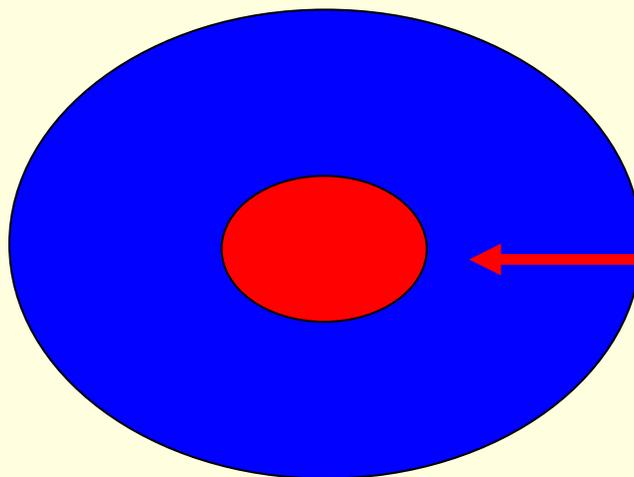
Hyperstability and Population Size



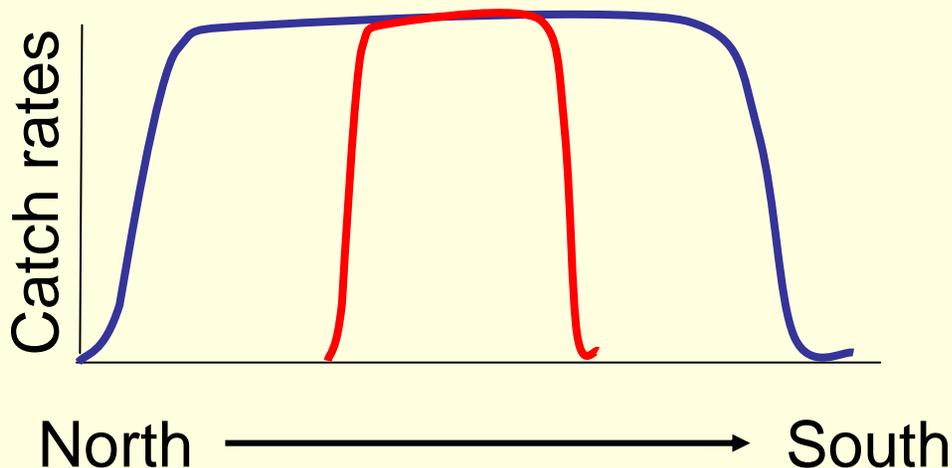


Hyperstability and Catch Ranges

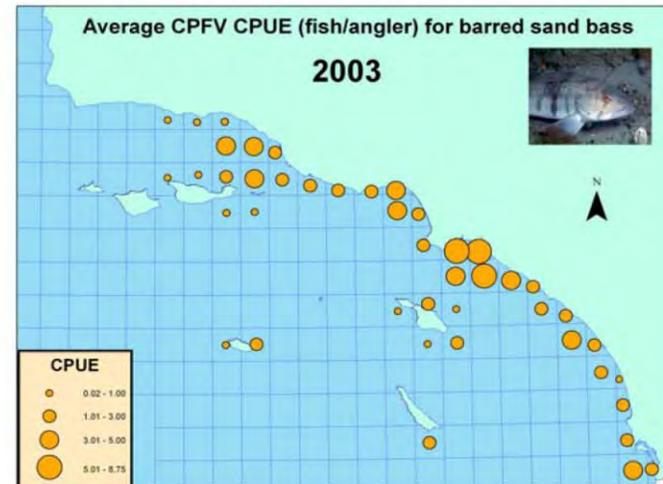
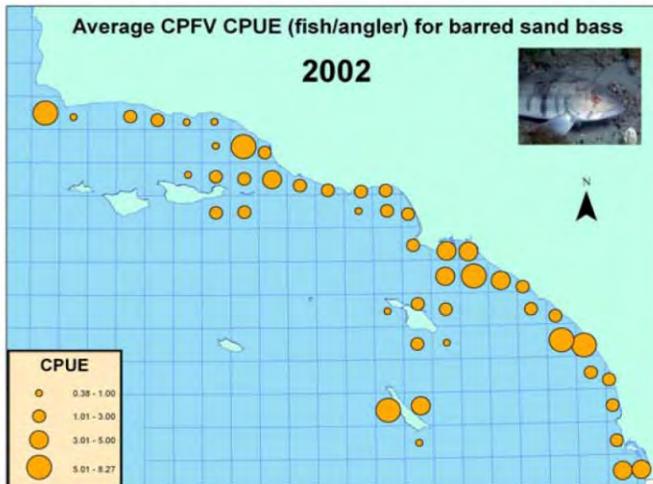
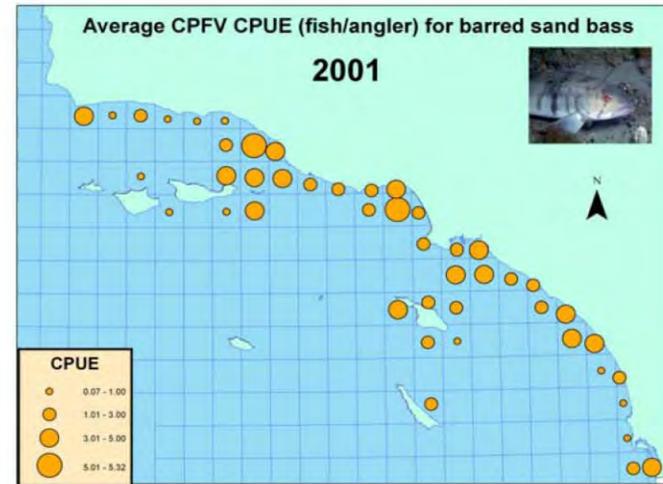
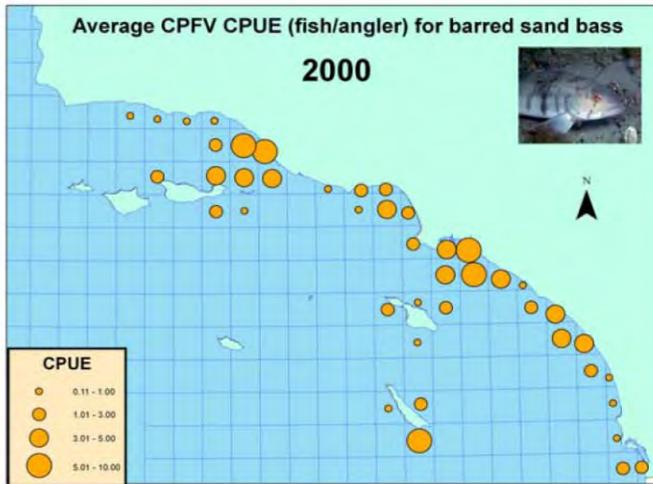
Catch
range
when fish
are
abundant



Catch
range
when fish
are scarce

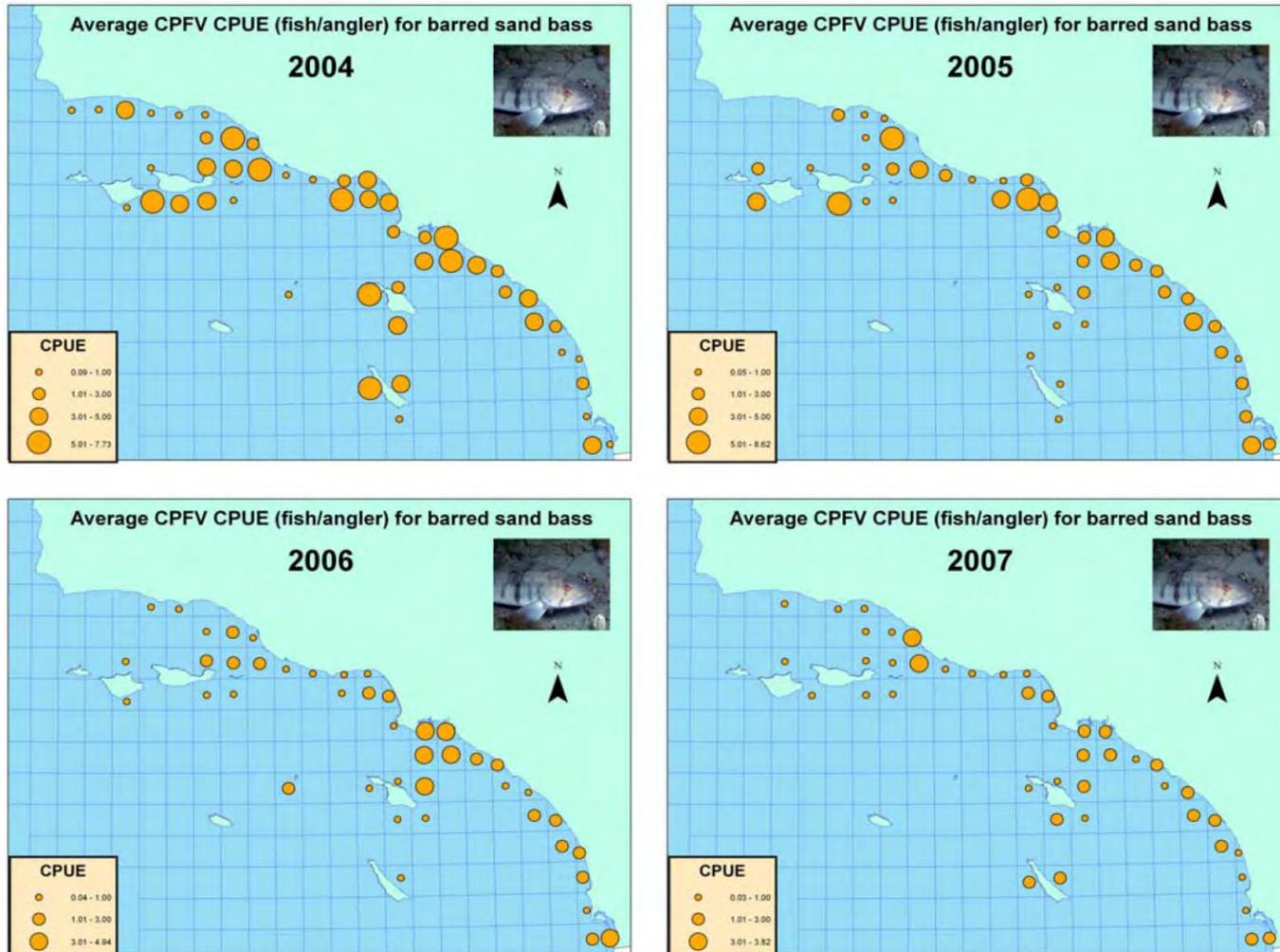


Commercial Passenger Fishing Vessel CPUE by CDFG fishing block (2000-2010) [CPFV Logbook Data, CFIS]



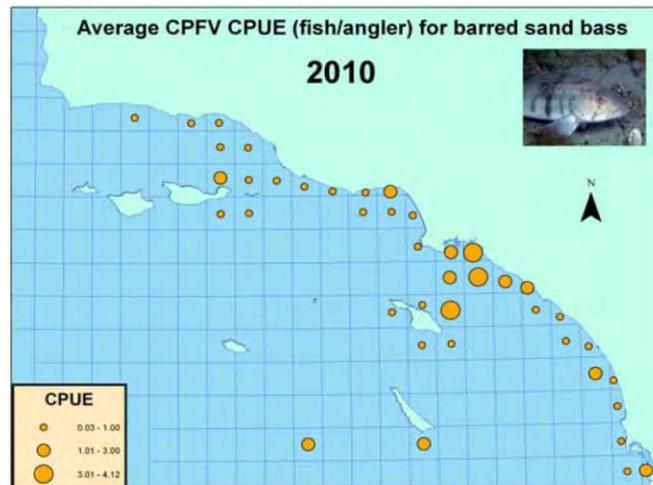
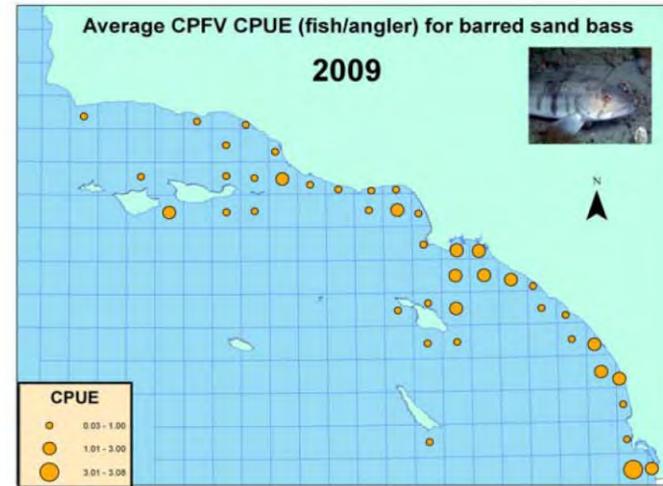
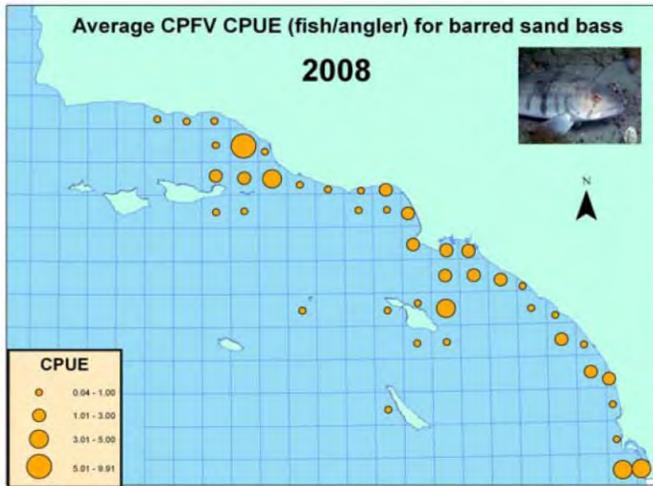
Temporal trends in CPUE by fishing block
Updated 09 Dec 2011

Commercial Passenger Fishing Vessel CPUE by CDFG fishing block (2000-2010) [CPFV Logbook Data, CFIS]



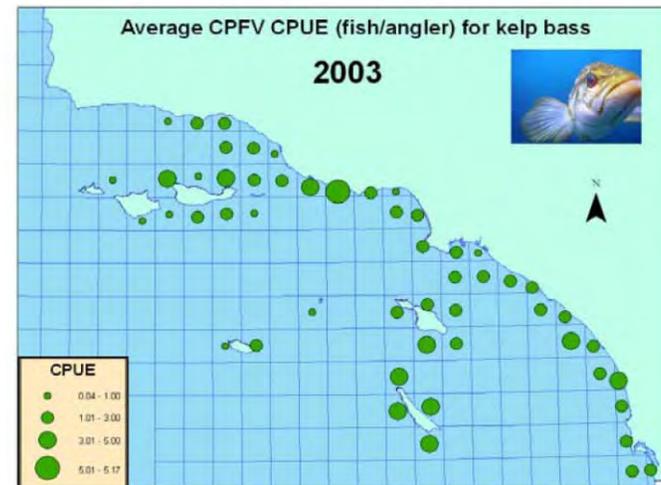
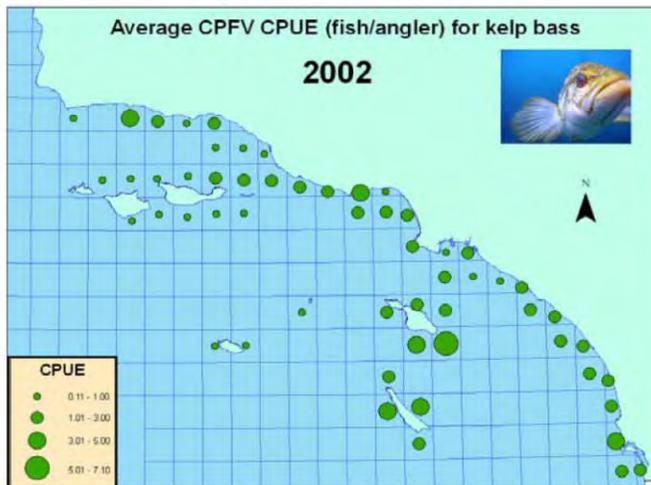
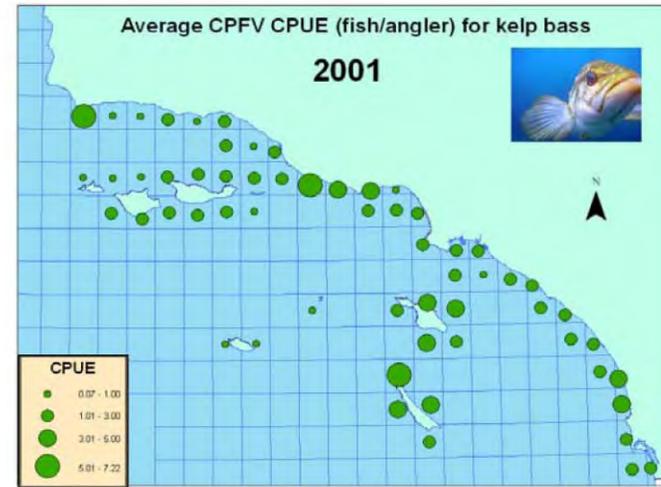
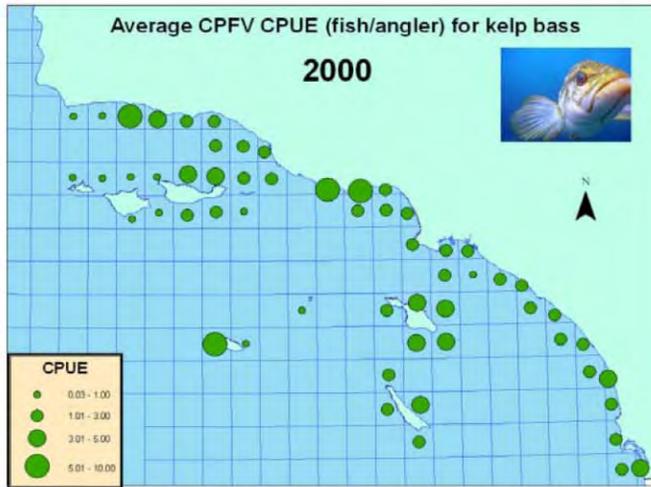
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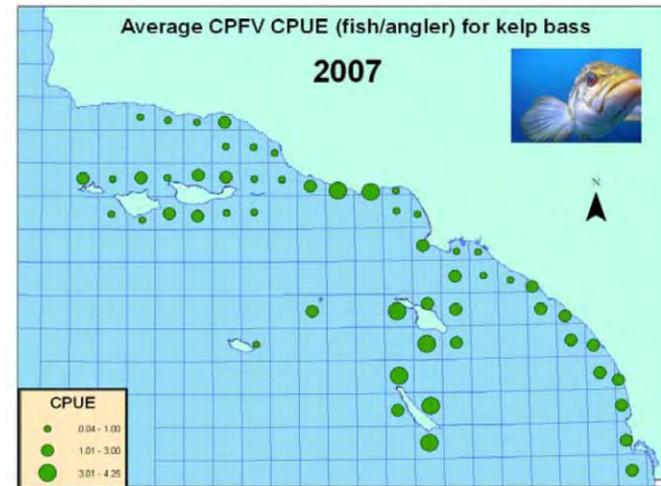
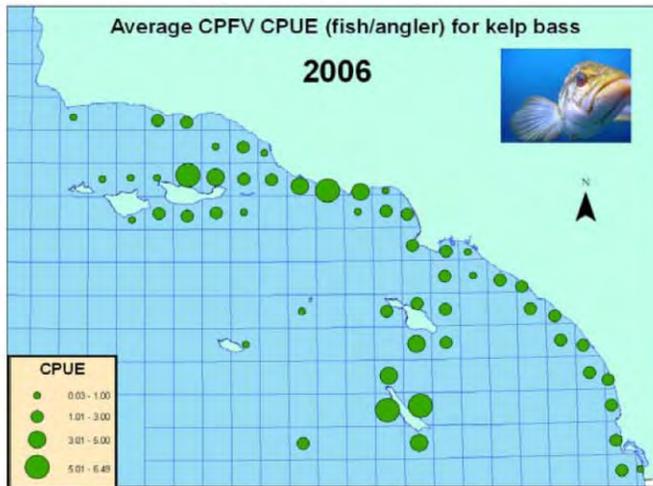
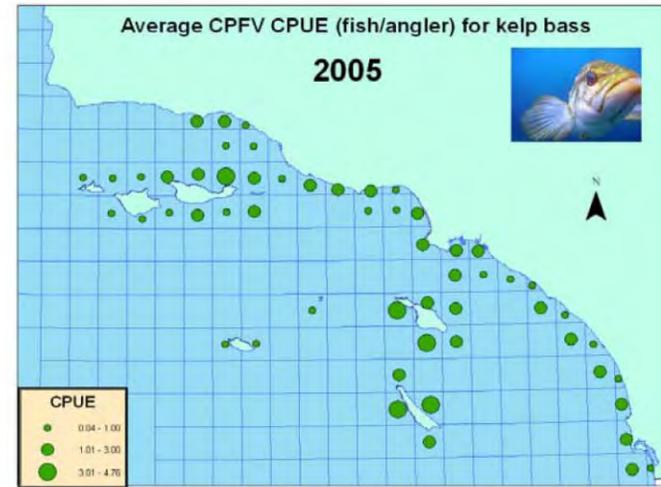
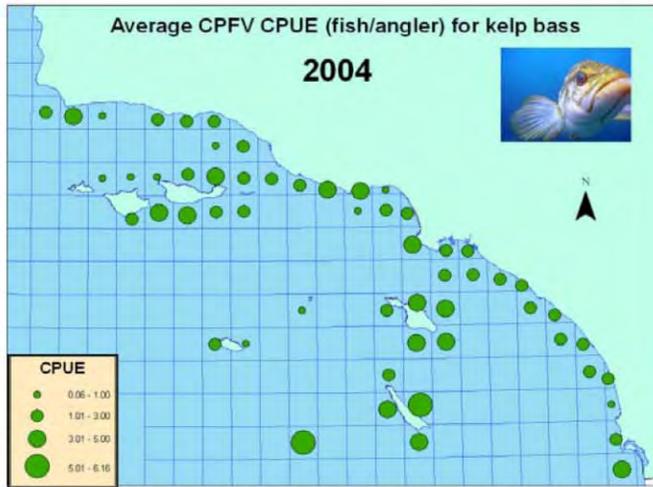
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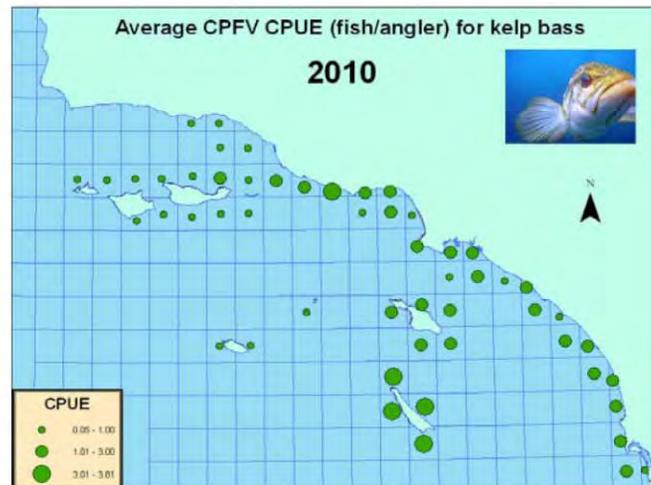
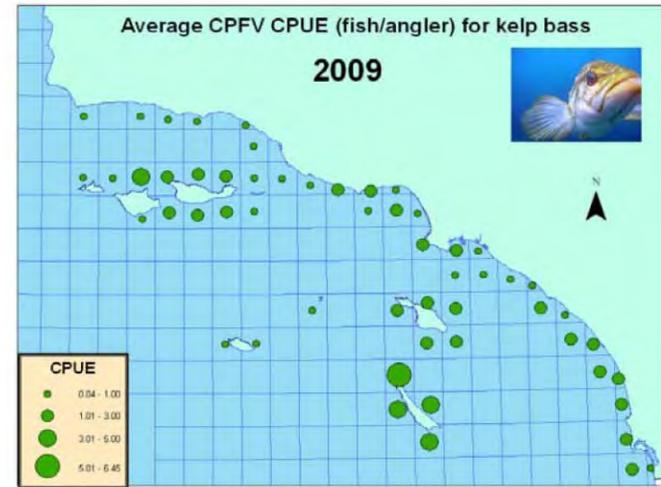
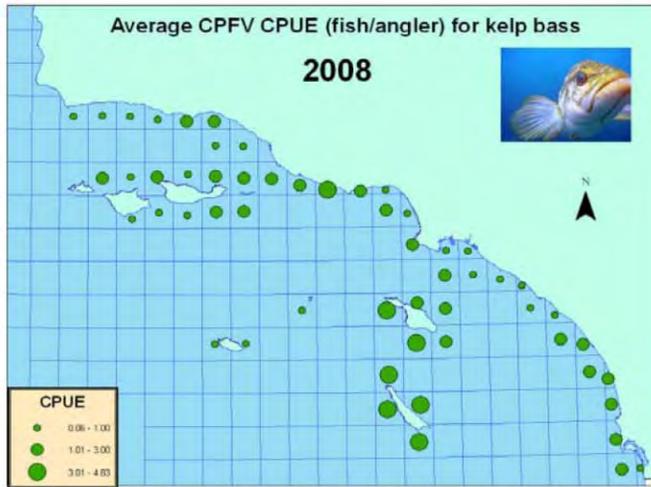
Temporal trends in CPUE by fishing block
Updated 09 Dec 2011

Commercial Passenger Fishing Vessel CPUE by CDFG fishing block (2000-2010) [CPFV Logbook Data, CFIS]



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Temporal trends in CPUE by fishing block
Updated 09 Dec 2011

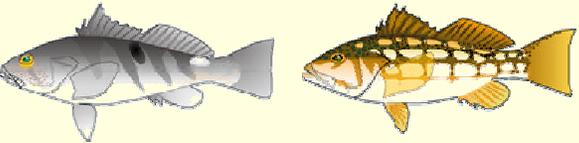


Fishery-Independent Datasets

DATA TYPE

ORGANIZATION

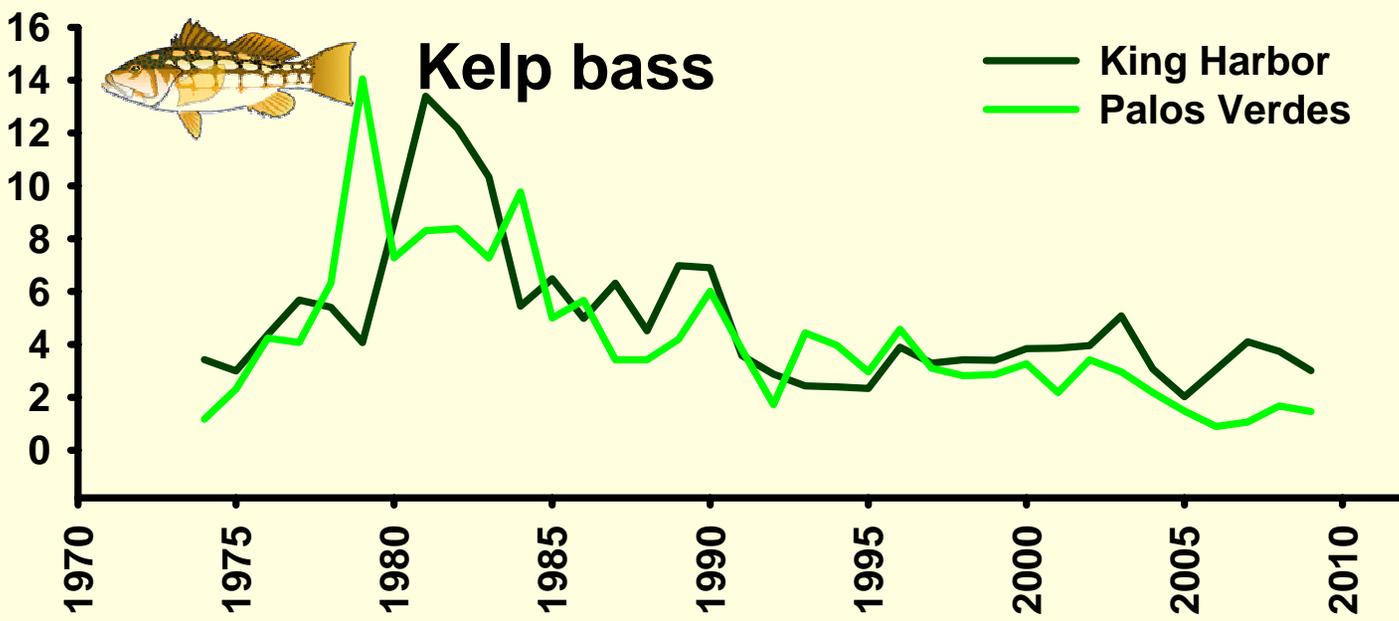
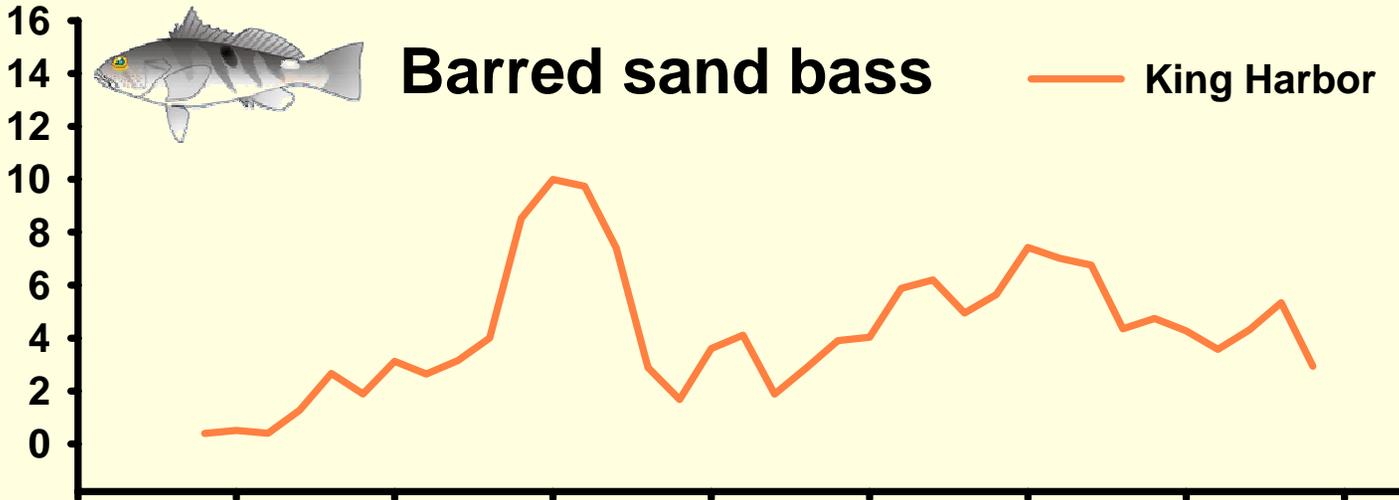
LIFE STAGE

Larval Abundance Recruitment	 CalCOFI PISCO	Larvae/recruits 
Fish Entrapment	 Edison	Sub-adults 
Gill Net Bycatch	CSUN Hubbs Sea World	
SCUBA Surveys	Reef Check  NPS PISCO  Occidental College SF State Univ.	Adults 



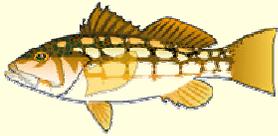
Mainland SCUBA Transects (1974-2009): Adults

Mean density
(fish/100 m²)

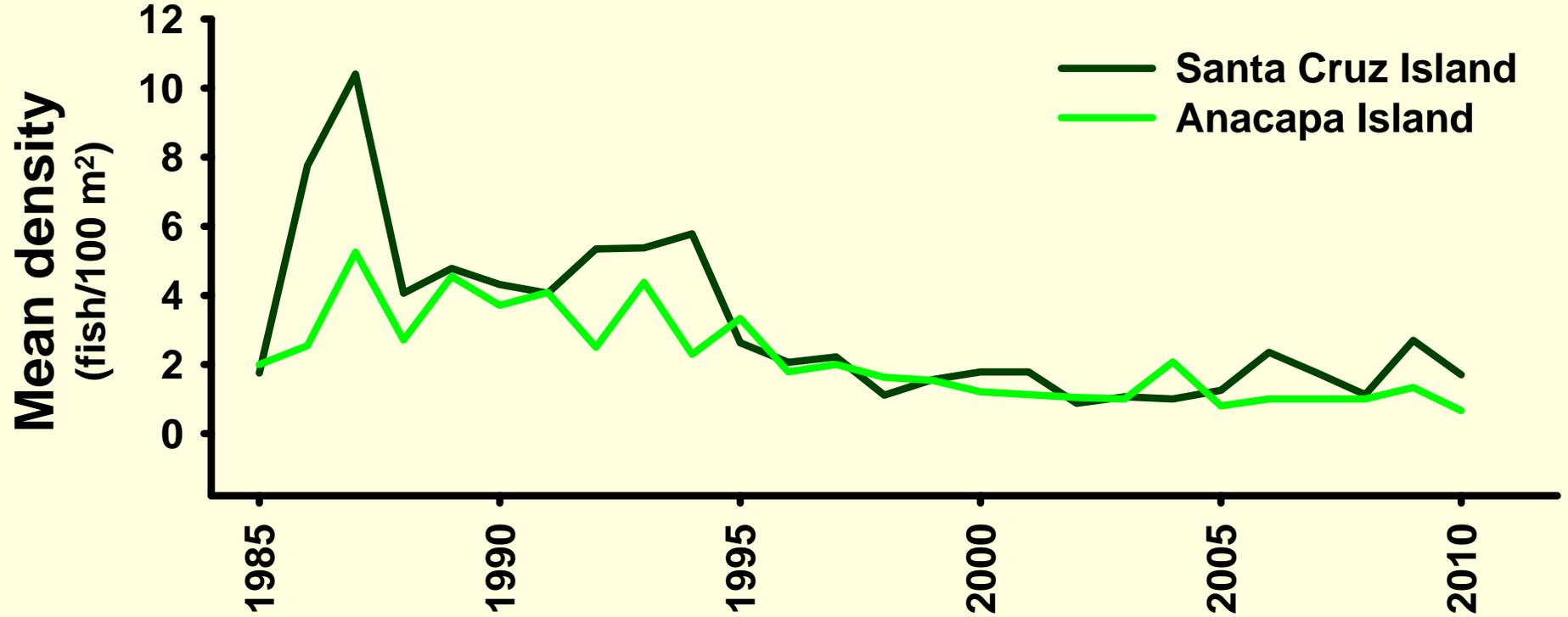




Island SCUBA Transects (1985-2010): Adults

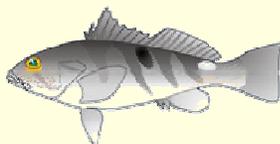


Kelp bass

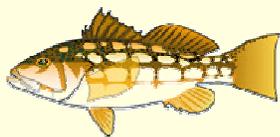
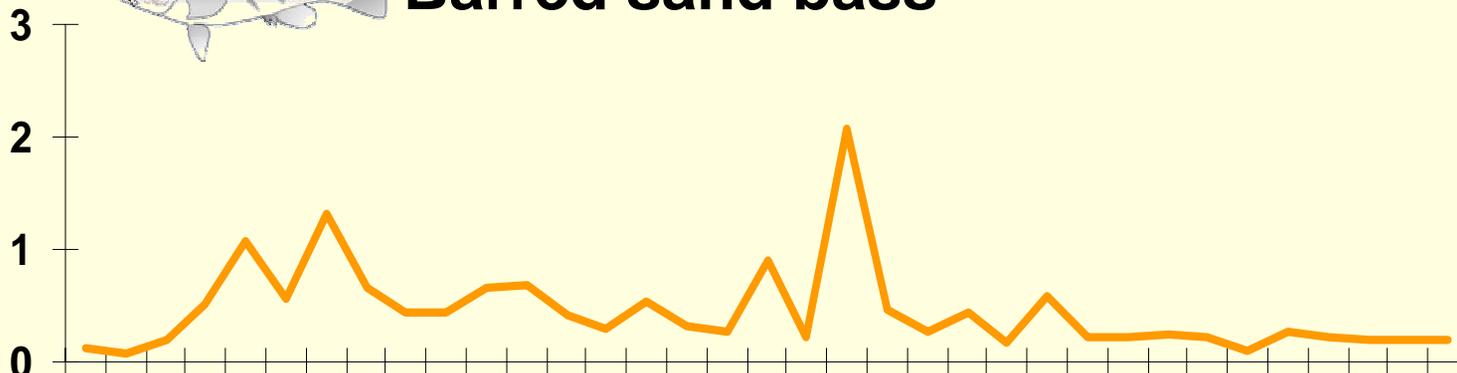




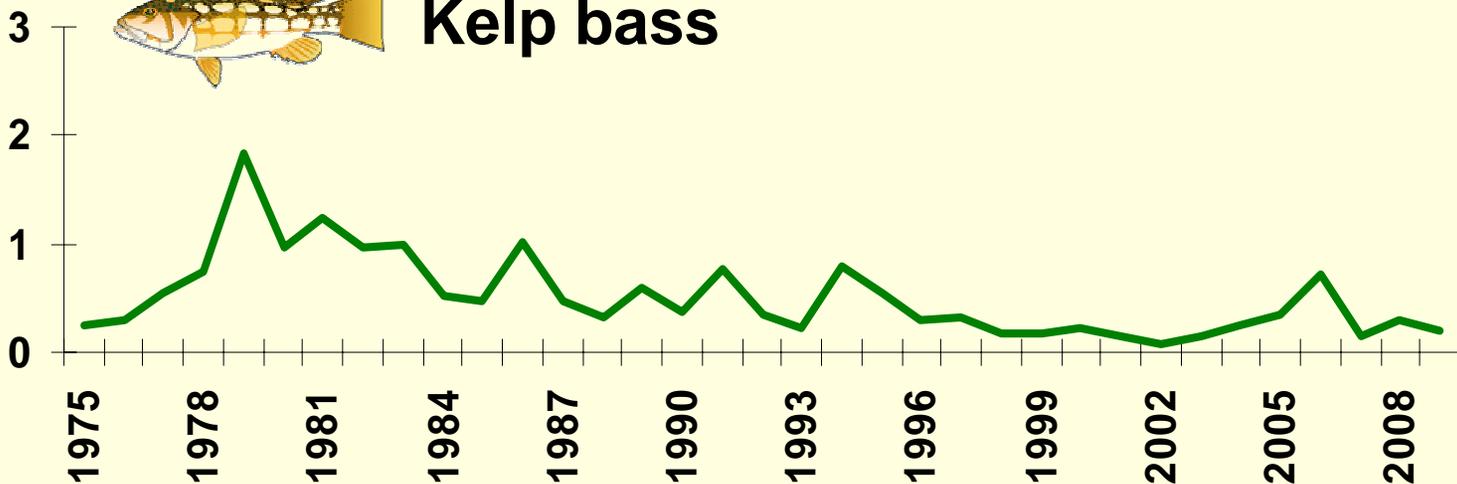
Entrapment Abundance (1975-2009): Subadults



Barred sand bass

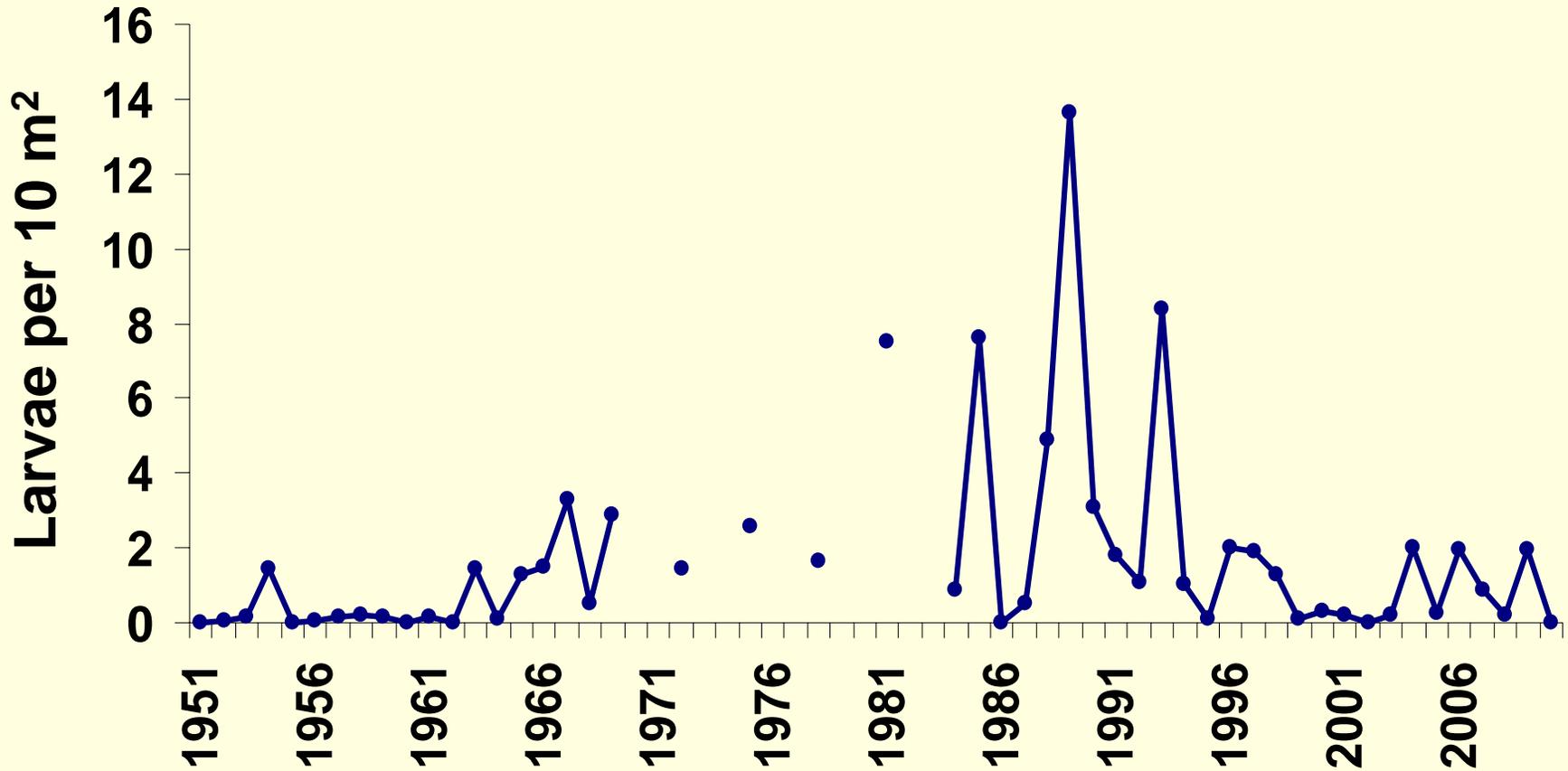


Kelp bass



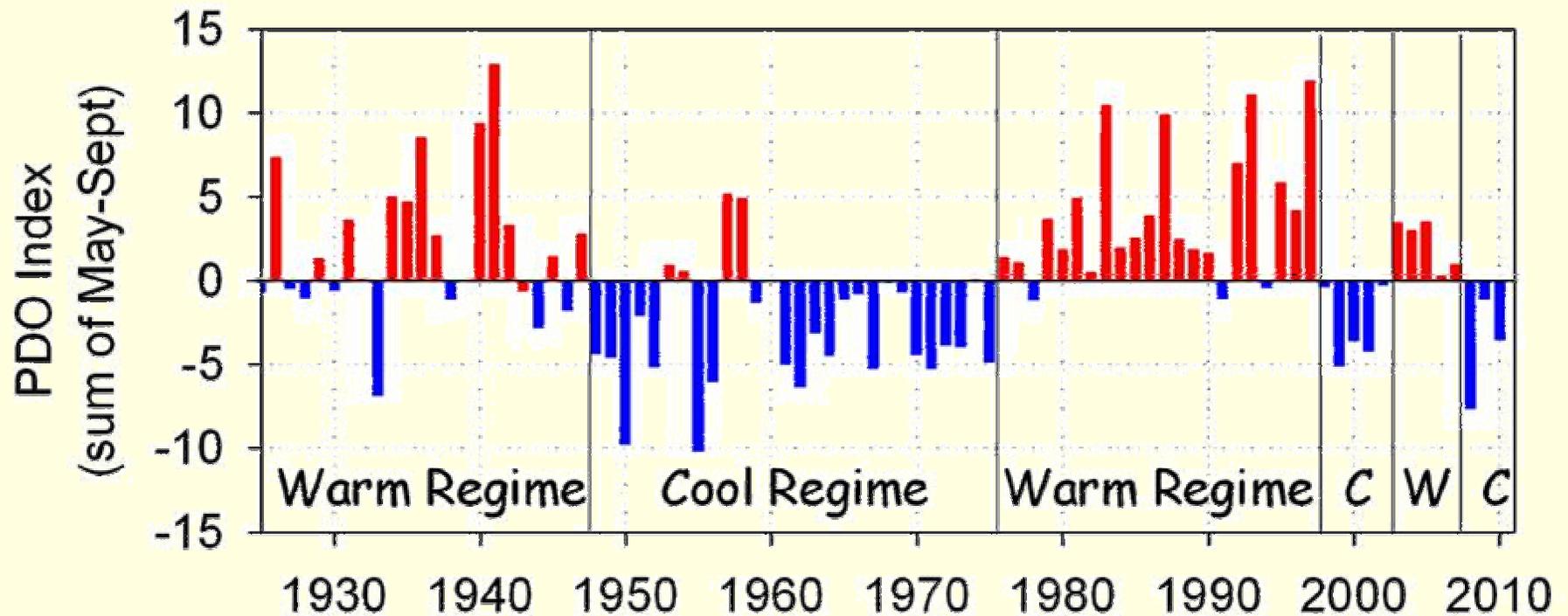


Rockbass Larval Abundance (1951-2010)



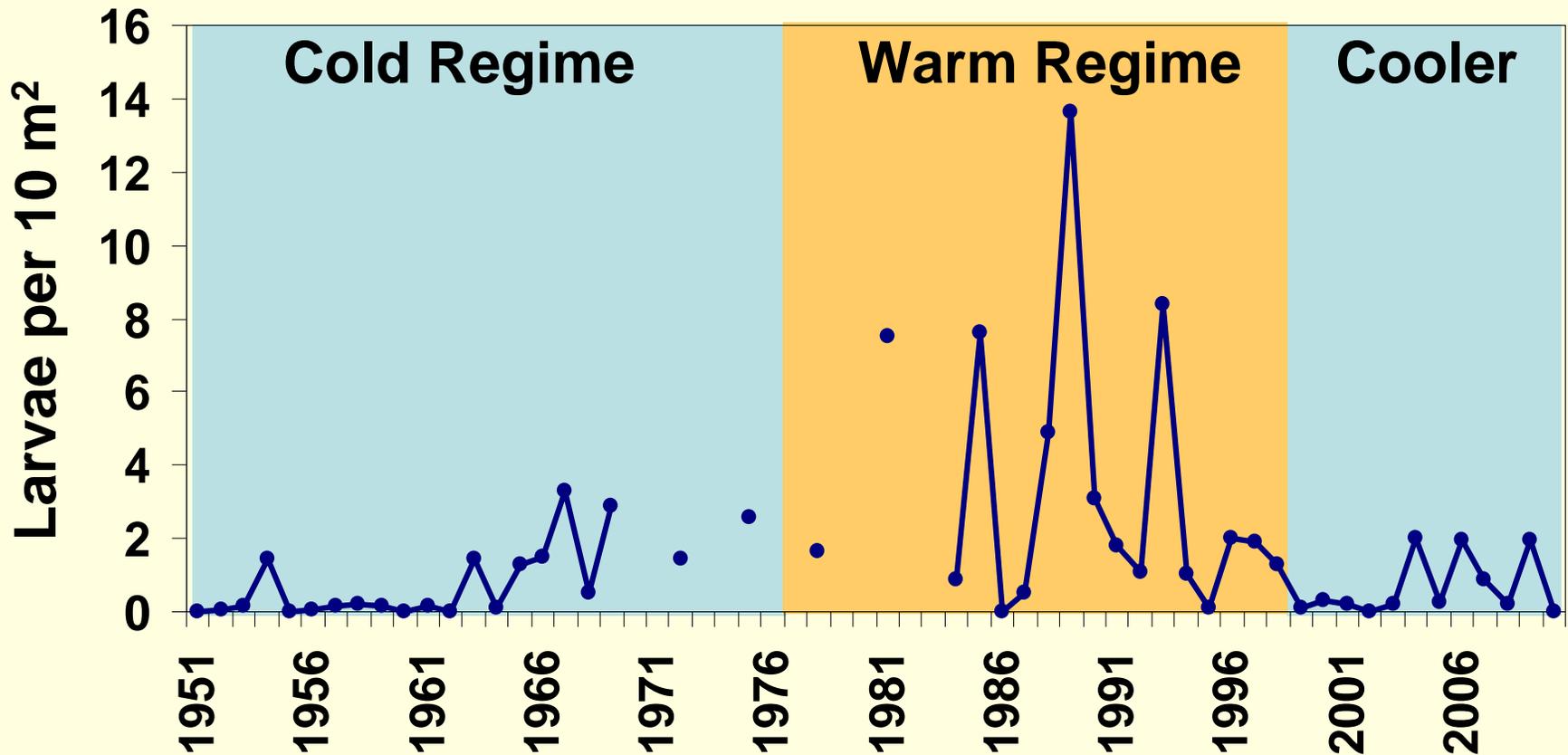
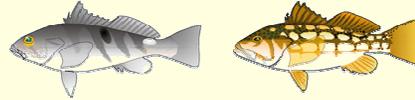


Pacific Decadal Oscillation



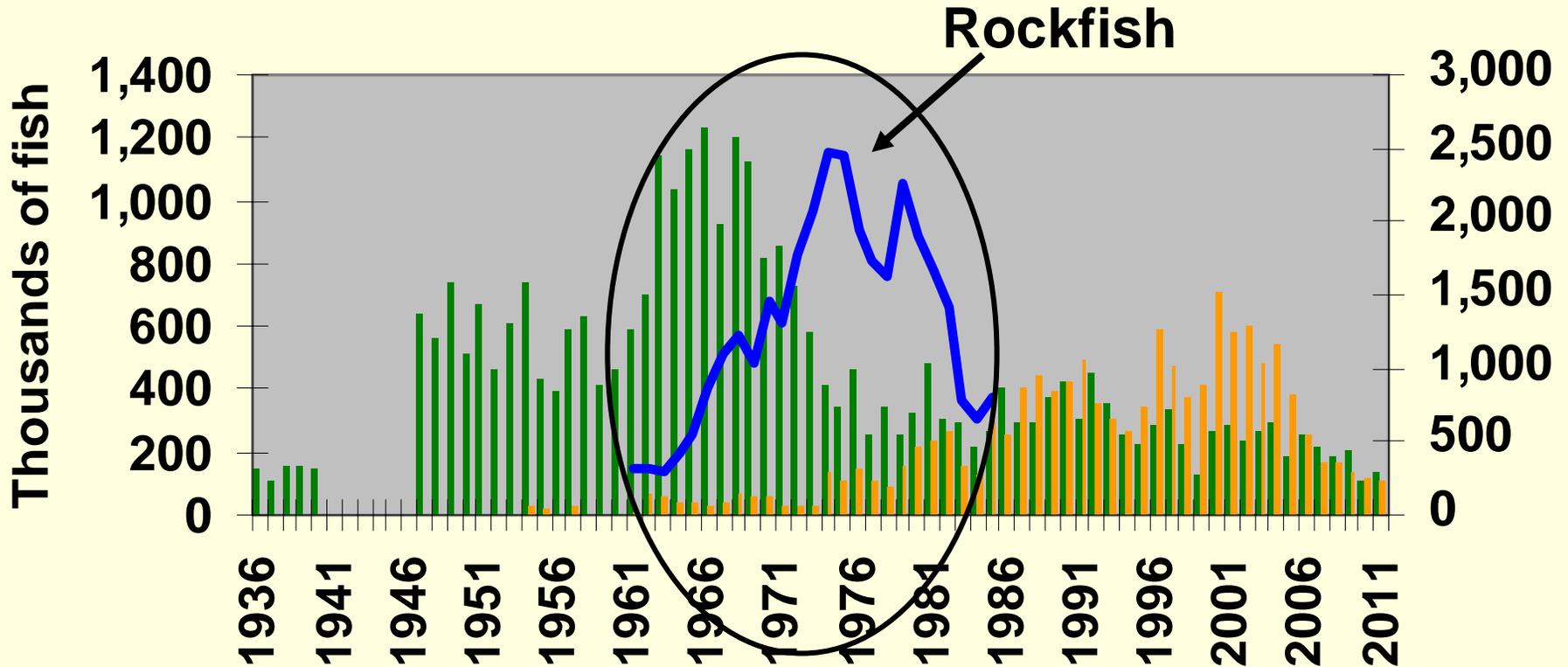


Rockbass Larval Abundance (1951-2010)



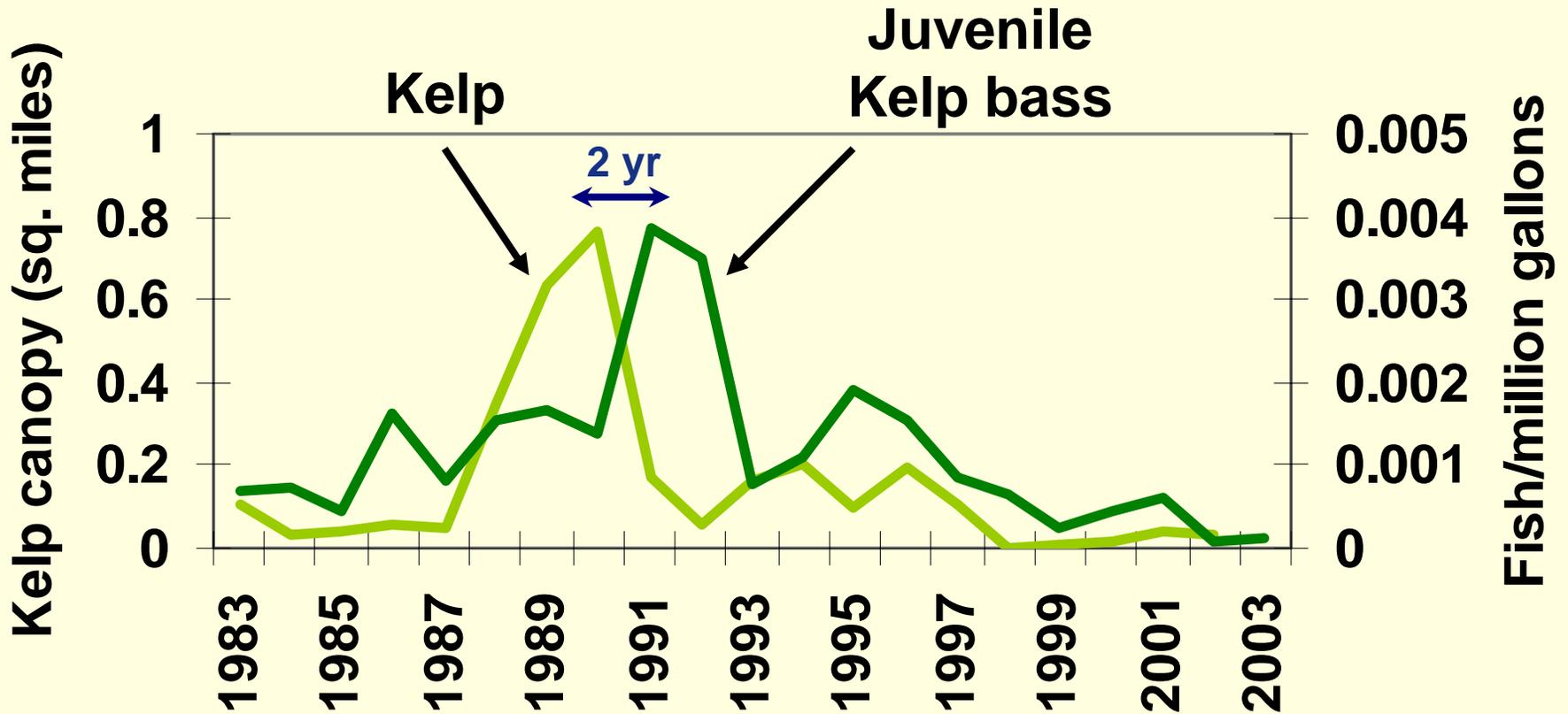


CPFV landings (1936-2011)



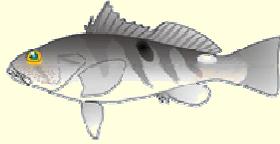


Kelp bass densities and kelp canopy



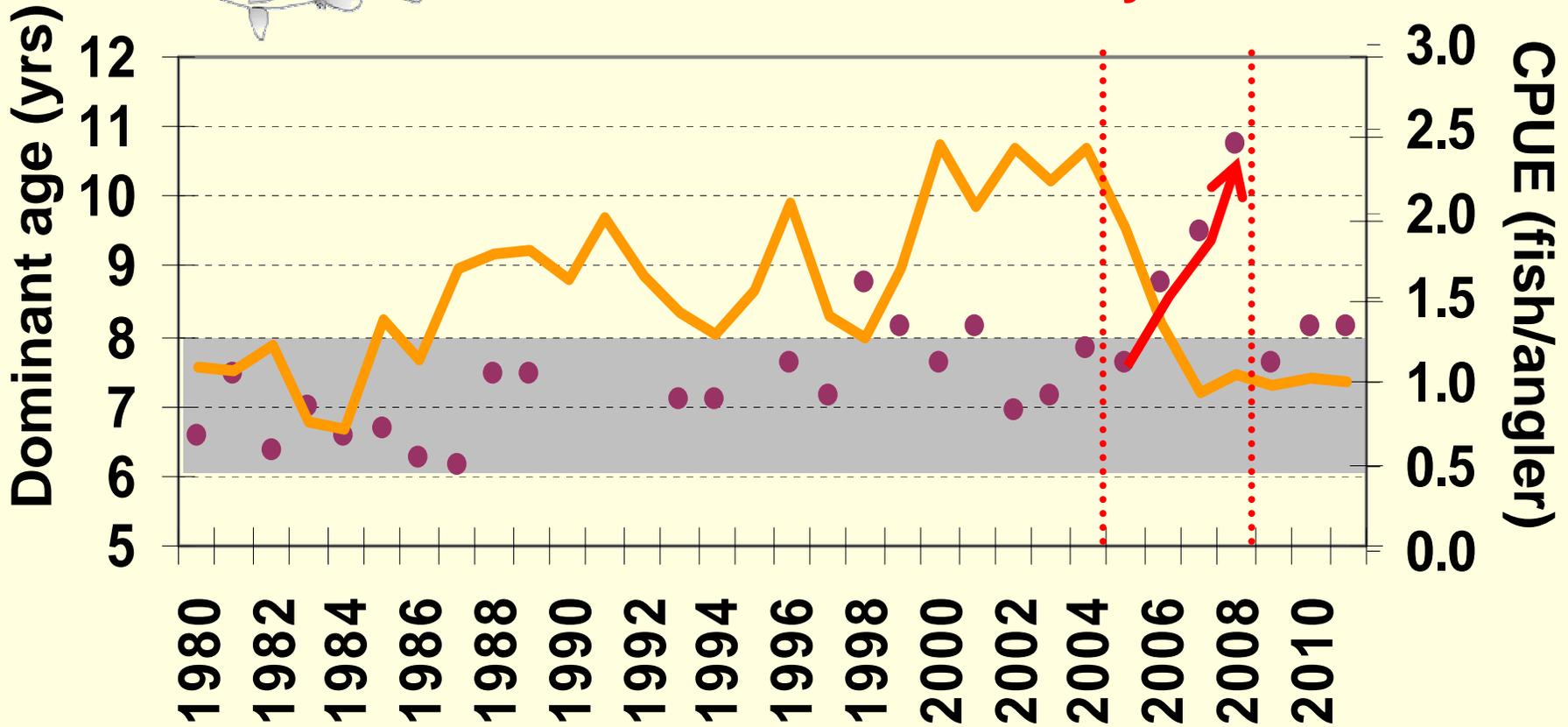


Tracking Dominant Age Classes (Fishery Recruitment Strength)



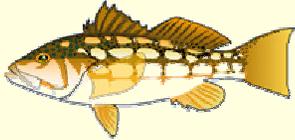
Barred sand bass

1997 year class



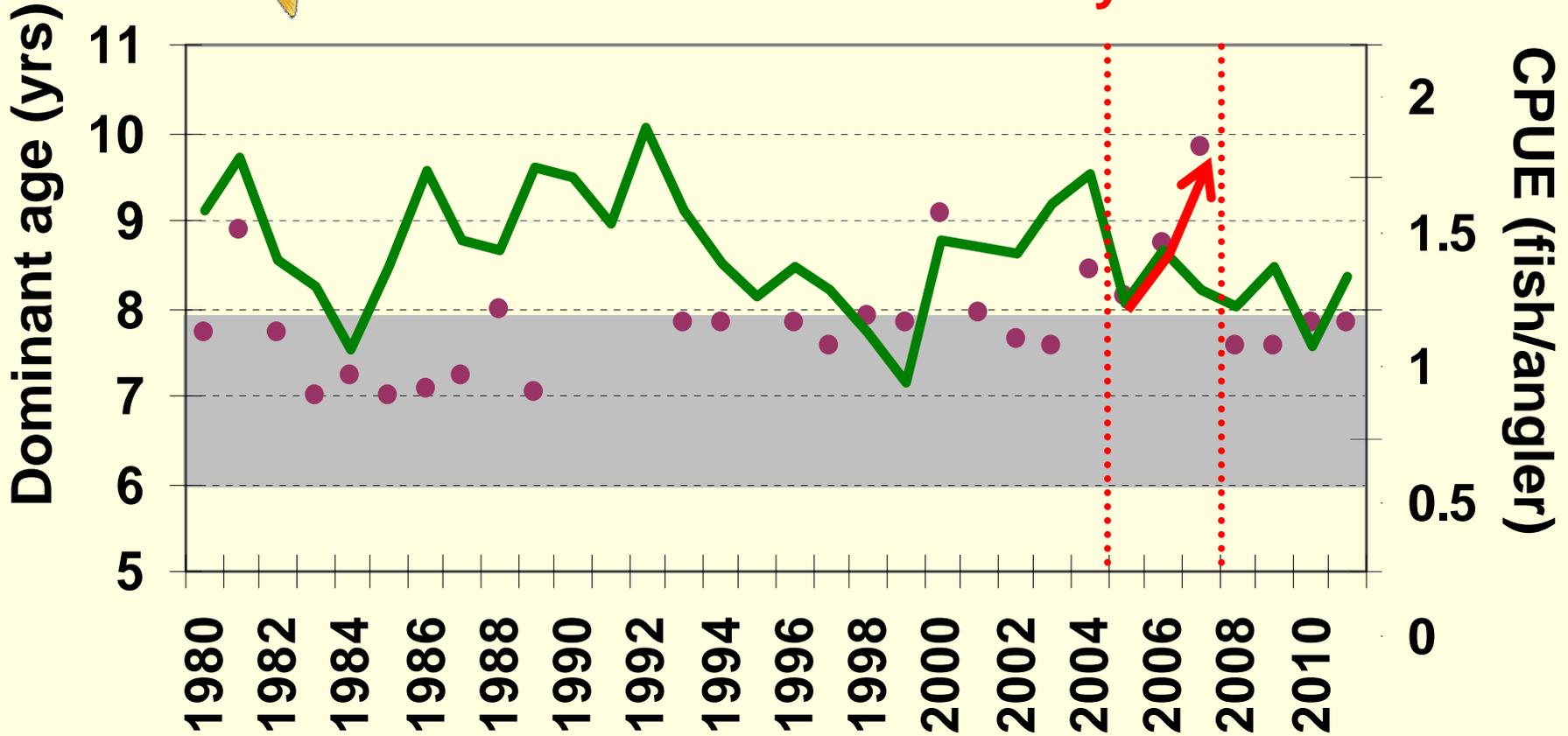


Tracking Dominant Age Classes (Fishery Recruitment Strength)



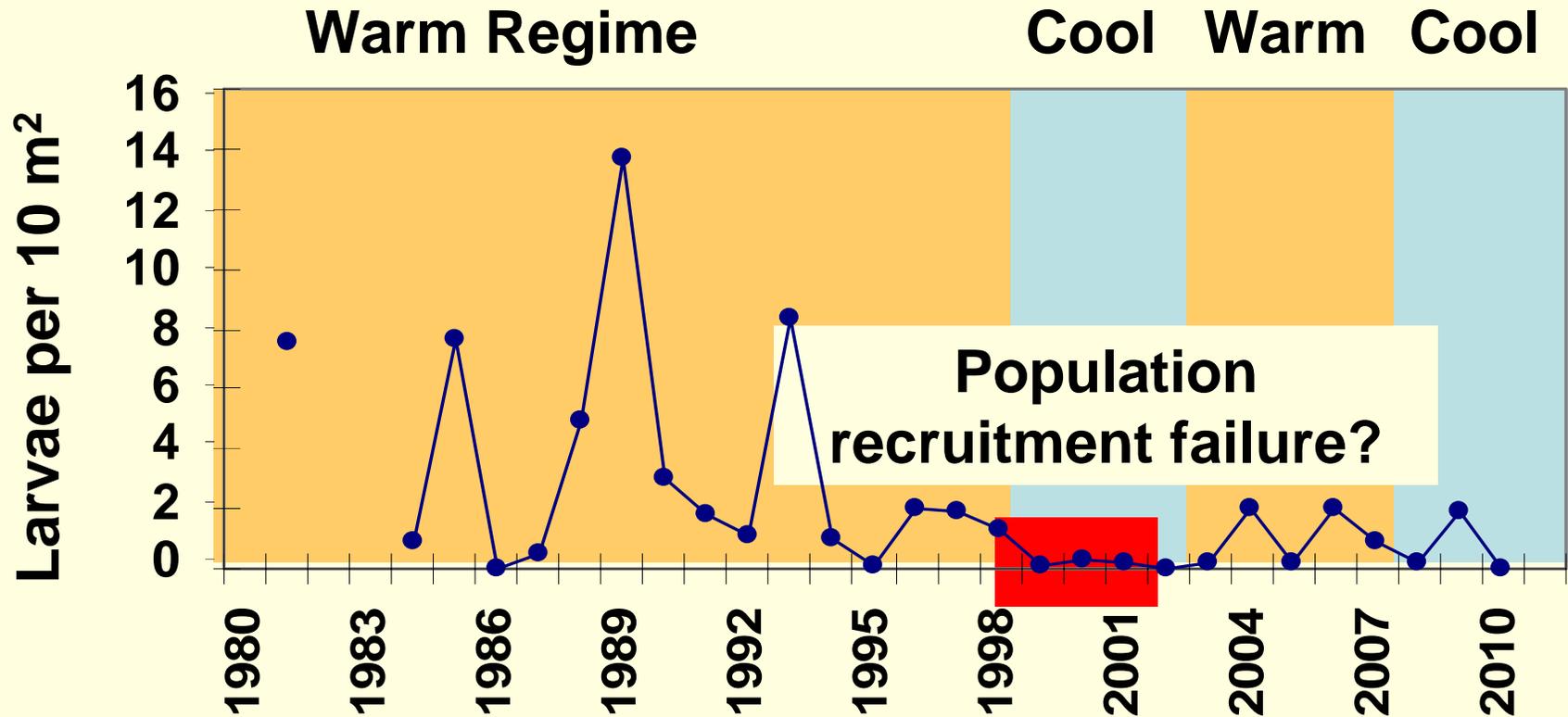
Kelp bass

1997 year class





Recruitment and Larval Abundance

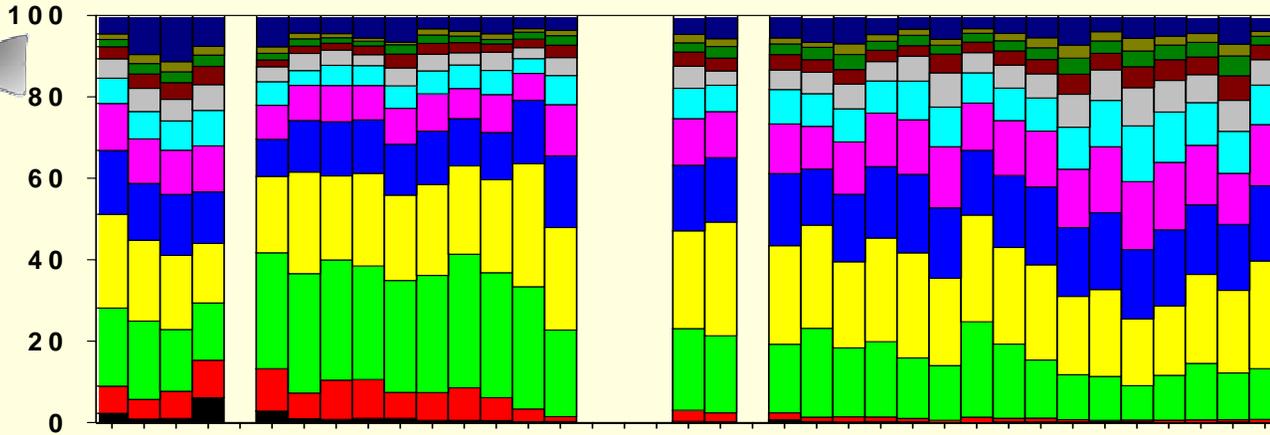


Decrease in larval survival and/or larval supply?

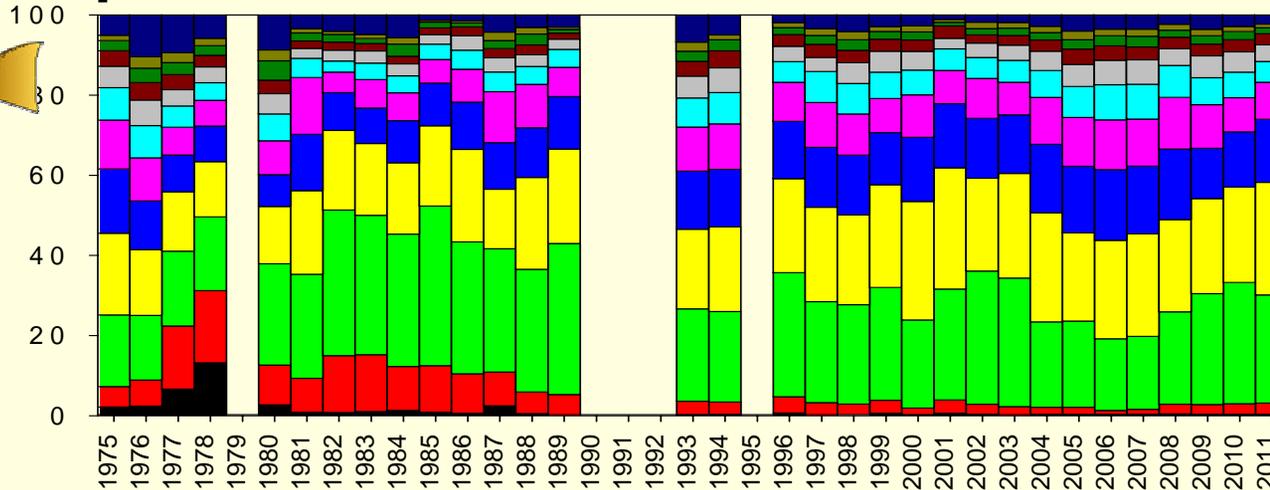


Size structure of harvested catch (1975-2011)

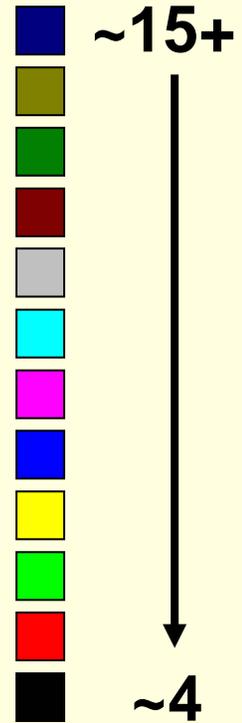
Barred sand bass



Kelp bass

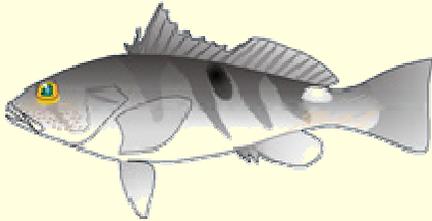


Est. Age
(yrs)

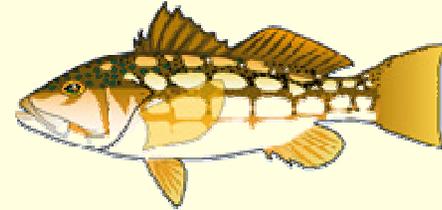




The Basses are Different



- Steep catch declines
- Mainland fishery
- Very large, localized spawning aggregations
- Range less to the north

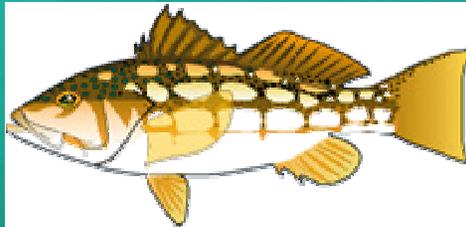
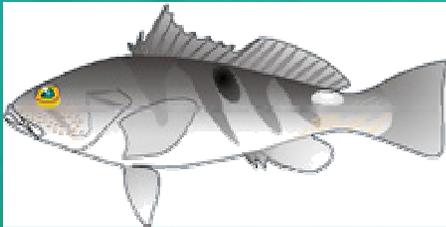


- Smooth catch declines
- Mainland/Island fishery
- Smaller, broadly distributed spawning aggregations
- Range farther north
- Kelp habitat important

= HIGHER LEVEL OF CONCERN



Management Goals and Considerations

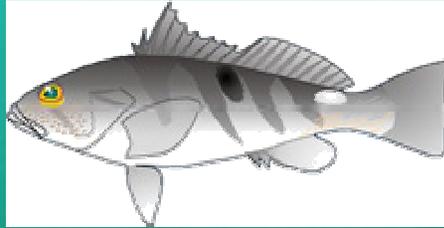


1) Provide measures that will favor a population rebound for the basses.

- Reduction in bag limit?
- Change in size limit?



Management Goals and Considerations



2) Protect barred sand bass spawning population.

- Seasonal closure?
- Seasonal reduction in bag limit?



Constituent Input

Recreational Fishing Groups

Bag limit reduction

Slot limits

No slot limits

Minimum size limit increase

Catch-and-release only for spotted sand bass

Environmental Groups

Concern for kelp bass and barred sand bass

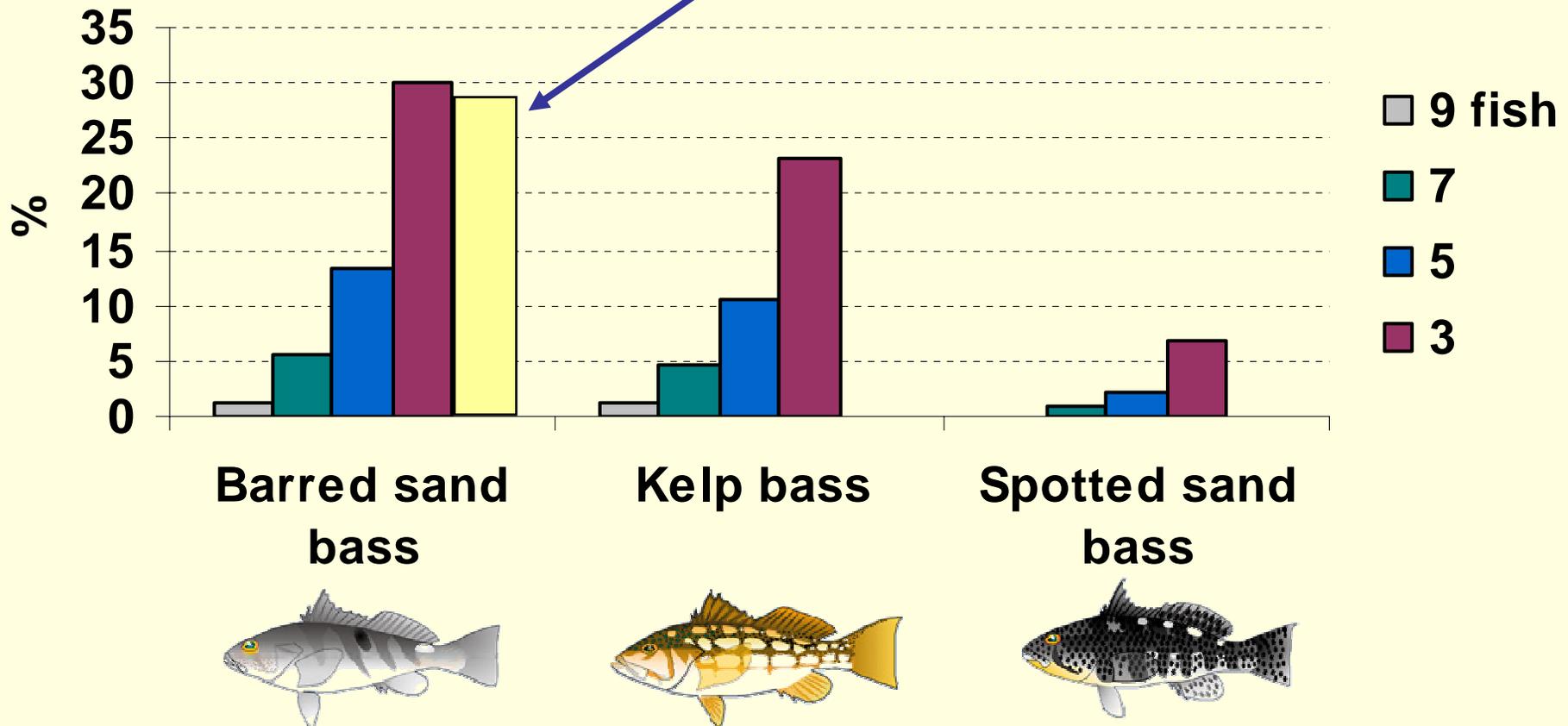
Explore management options

Partial season closure for barred sand bass



Percent Reduction in Catch under Hypothetical Bag Limits

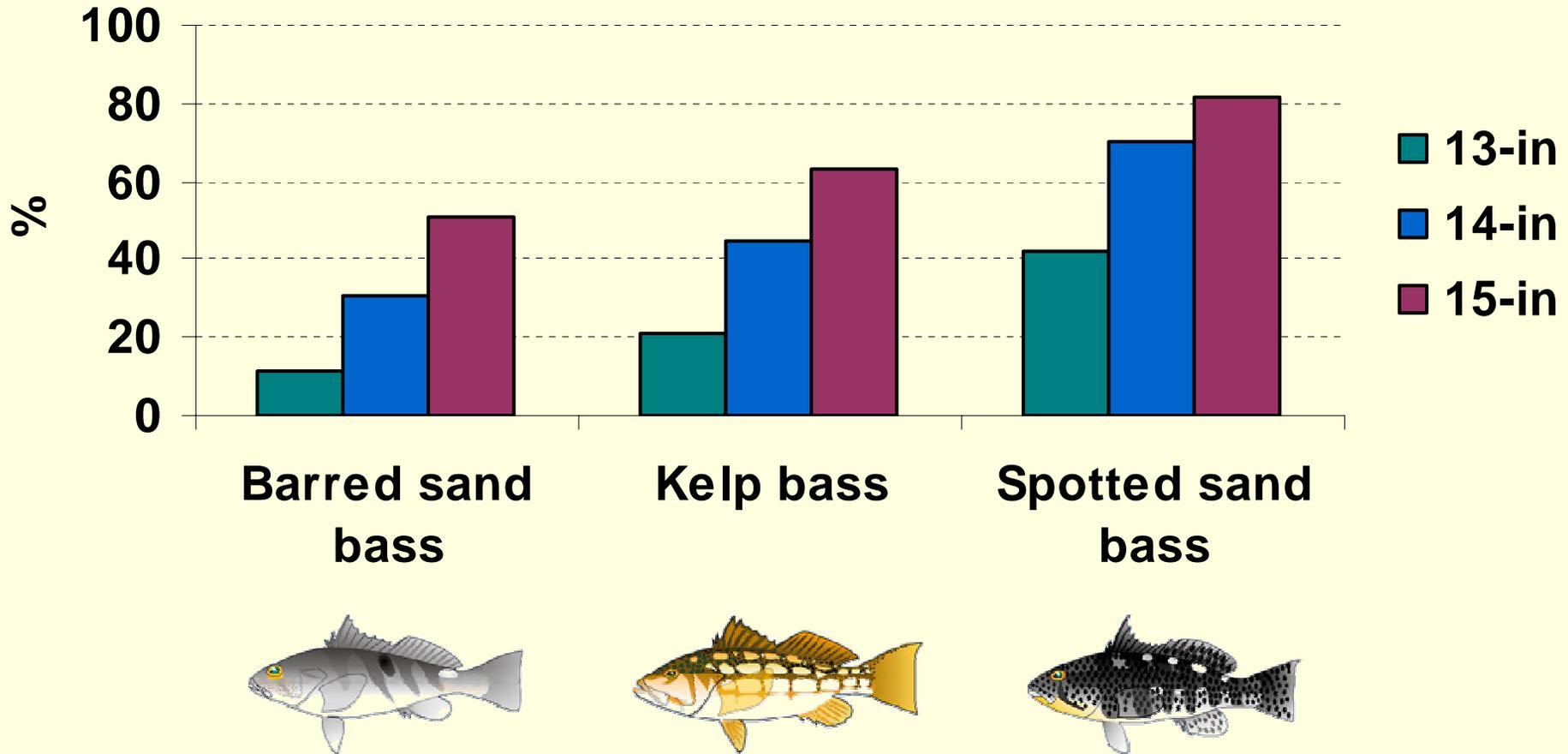
In-season 3 fish bag limit



Data source: California Recreational Fisheries Survey, 2004-2010



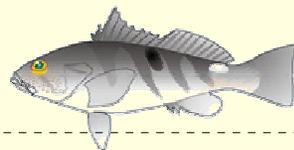
Percent Reduction in Catch under Hypothetical Minimum Size Limits



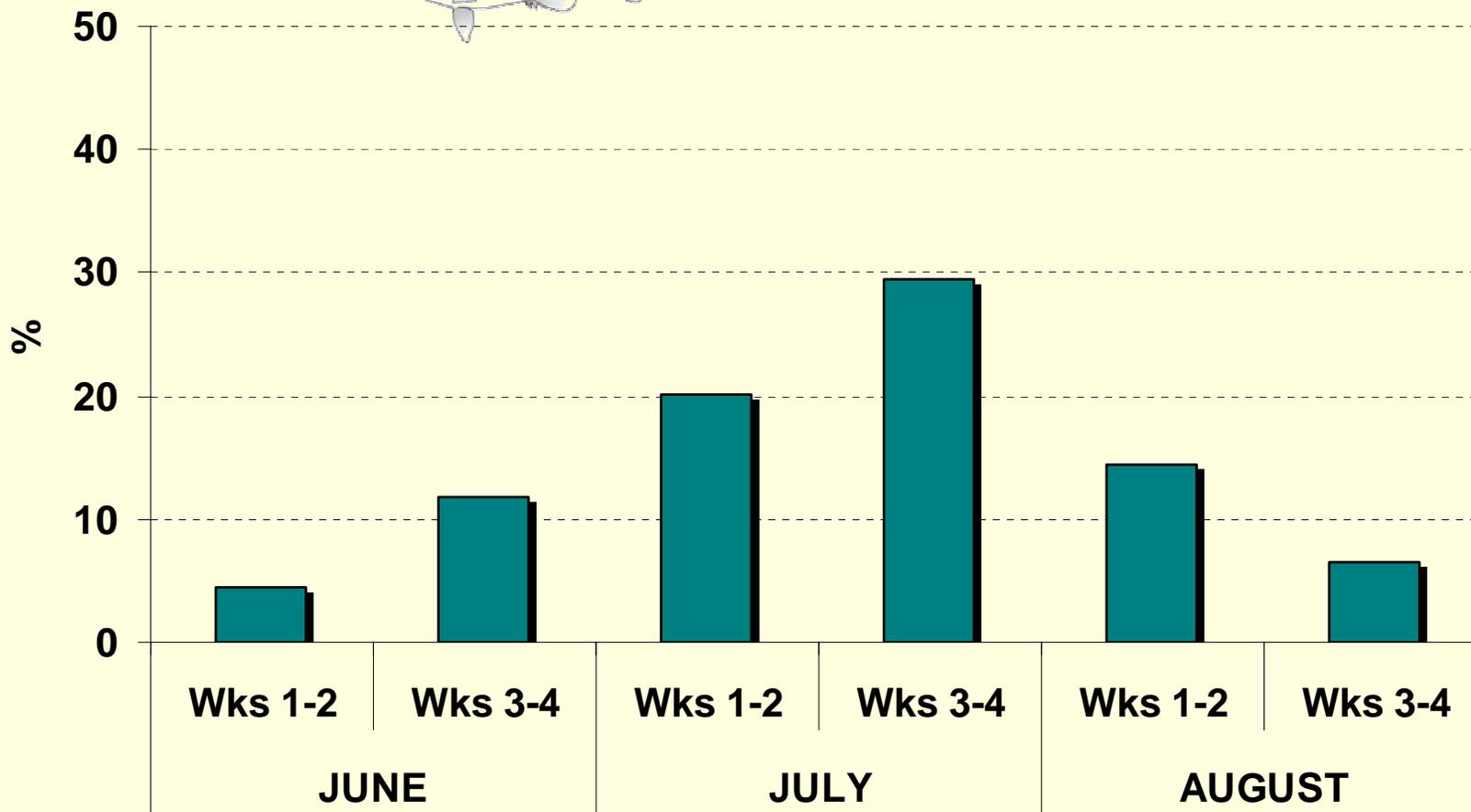
Data source: California Recreational Fisheries Survey, 2004-2010



Avg. Percent Reduction in Catch under Various 2-wk Closures



Barred sand bass



Data source: CPFV logbooks, 2004-2010



Summary

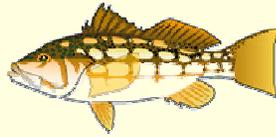
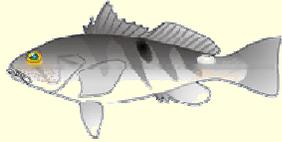
- **Environment and fishing have affected our bass populations**
- **Precautionary management measures appear prudent**



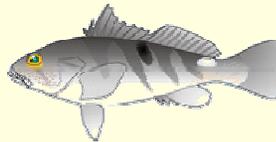
Artist: Kelly Day Spady



Recommendations



- **Increase minimum size limit**
 - Allows for at least 1 additional year of spawning
- **Decrease bag limit**
 - Allows for modest savings



- **Partial spawning season closure**
 - Allows for uninterrupted spawning activity



Recommendations

- **Continue to evaluate regulation effectiveness**
- **Take adaptive management approach to maximize fishing opportunities**



Artist: Kelly Day Spady



Thank you