

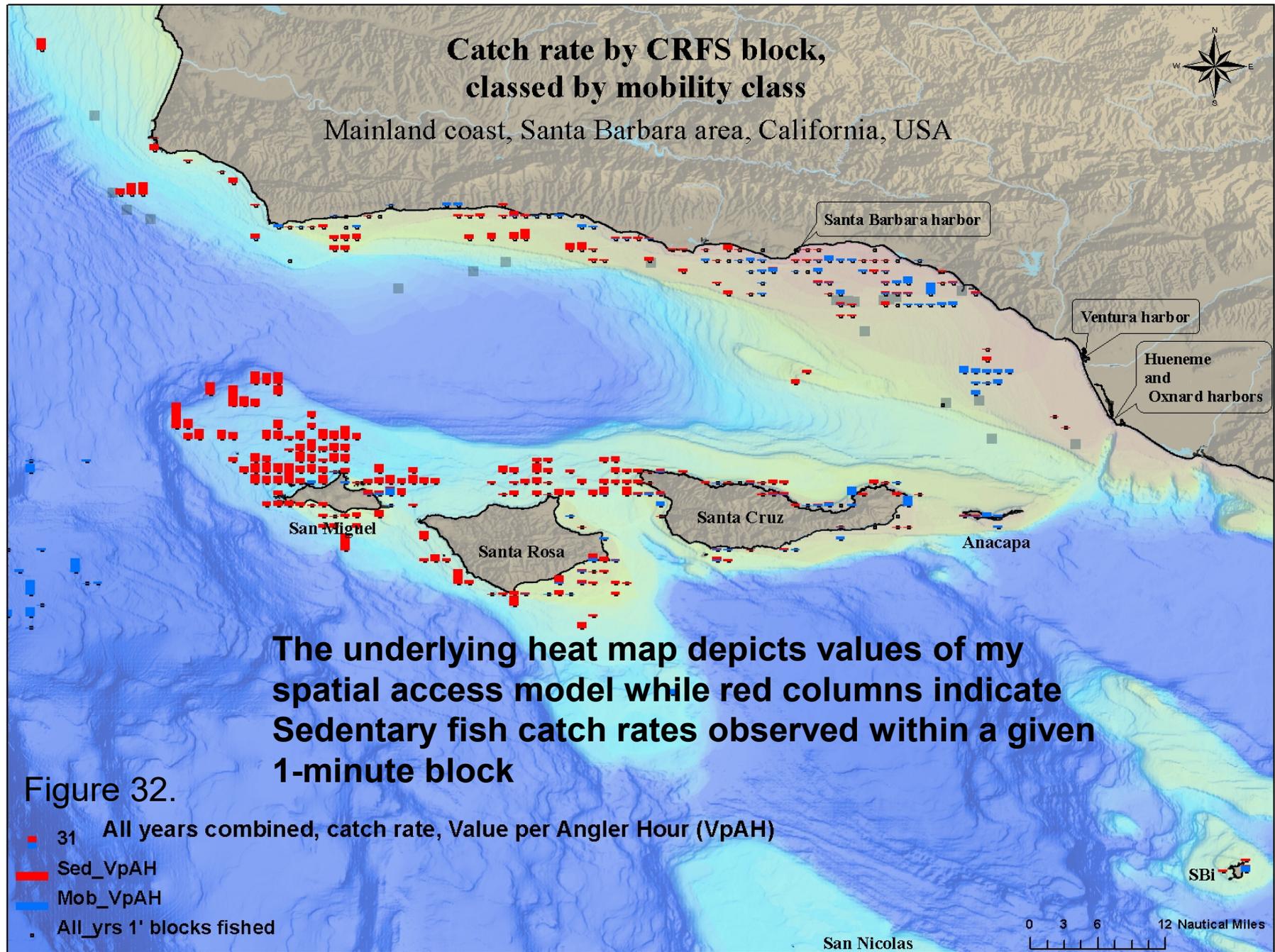
Presentation of Merit McCrea to the Pacific Fisheries Management Council September 2021 meeting

**Agenda Item C.6.b
Supplemental Public
Presentation 1
September 2021**

In 2007 I was funded by California Seagrant to do an analysis of logbook data I had generated aboard my CPFVs between 1979 and 2000 – an era prior to spatial fishing closures.

Using a GIS platform I analyzed catch-rate data in the context of site accessibility – a weighted sum of weather exposure, depth and distance from port – resulting in a spatial access model.

Of the several outcomes, one was evidence for a strong gradient of fisheries impacts on non-migratory species, primarily rockfishes, across spatial scales of just 5 to 50 miles.



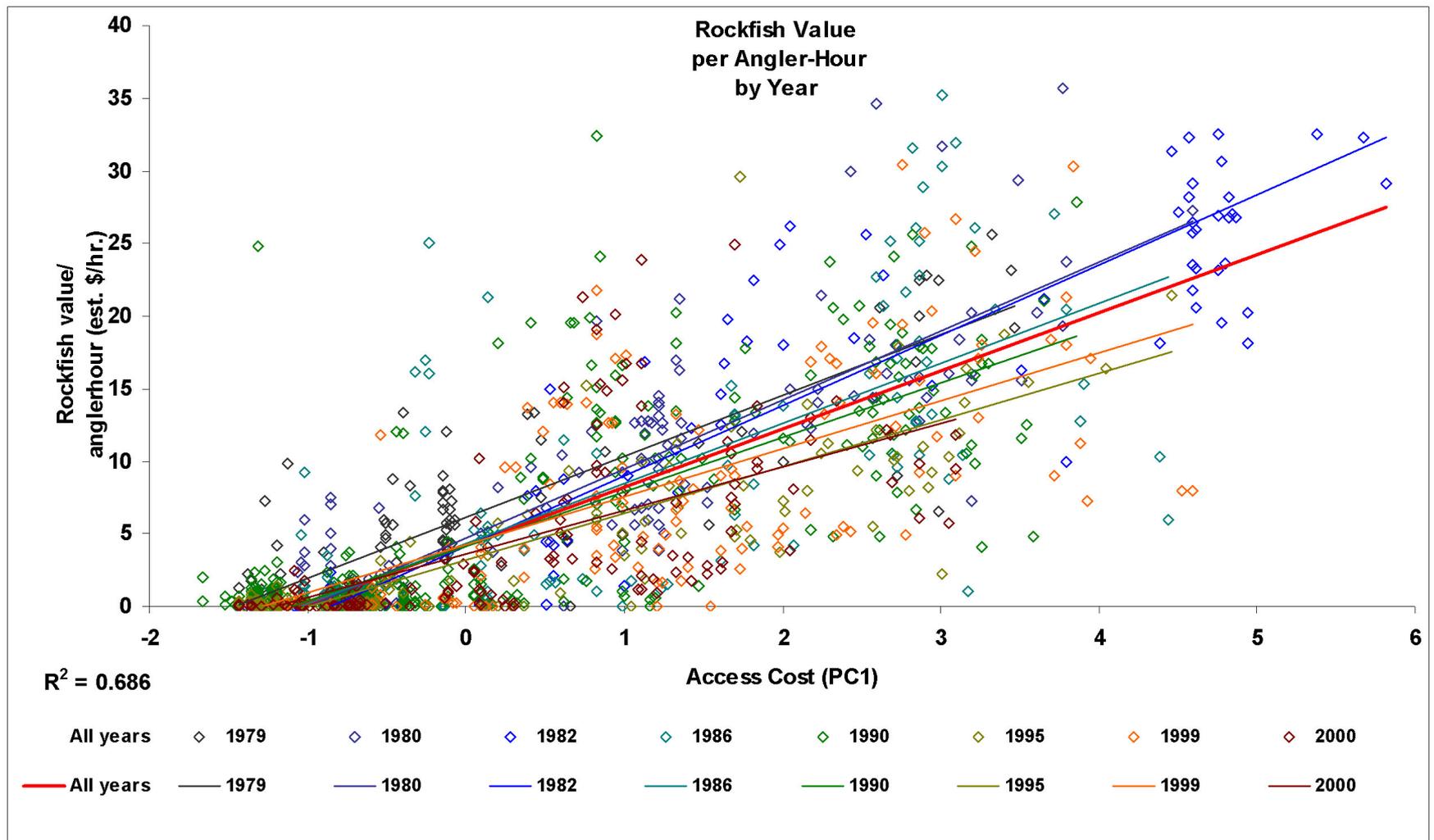
**Catch rate by CRFS block,
 classed by mobility class**
 Mainland coast, Santa Barbara area, California, USA

The underlying heat map depicts values of my spatial access model while red columns indicate Sedentary fish catch rates observed within a given 1-minute block

Figure 32.

- 31 All years combined, catch rate, Value per Angler Hour (VpAH)
- Sed_VpAH
- Mob_VpAH
- All_yrs 1' blocks fished

0 3 6 12 Nautical Miles



- Principal components analysis reveals a strong relationship between accessibility (weighted sum of distance, weather exposure and depth) and catch rates observed.
- Careful inspection of the various regression lines reveals a much more subtle reduction in catch rates with time – between 1982 and 2000 – the “Rockfish Disaster.”

CRFS Sampling in Southern California

CRFS data are very likely biased toward near port waters and for rockfishes, some of the most impacted rocky reefs in the management region. I interviewed 3 past CRFS samplers asking how often they were selected to go on longer trips capable of fishing beyond 30 miles from port – SoCal’s classic Overnight open party and charter trips.

- Interviewee 1: worked for a total of 9 months over a 1 year period, selected once, trip canceled, didn’t go.
- Interviewee 2: worked for a total of 2.5 years, selected 1 or 2 times, never worked out.
- Interviewee 3: worked for 2-plus years, selected about 6 times, never worked out.

Common threads: Each reported sampling short-range CPFV trips 1 to 2 times per week. While they may have occasionally been selected for an early morning departure Full-Day trip, commonly boats were fully subscribed. They would stand by for a later departure on a shorter range $\frac{3}{4}$ -day trip, and perhaps ultimately end up aboard an even shorter $\frac{1}{2}$ -day trip. Sometimes never getting aboard at all, they’d return in the afternoon and attempt a few dockside interviews.

Net result: 5+ sampler years, ZERO outer island trips sampled, inshore bias in data.

It appears when these fisheries data comprise a primary fraction of the data used in determining stock status, it results in a good assessment of the easily accessed NEAR TO PORT AREAS.

It says much less, if anything, about areas:

- Mostly beyond the reach of the data collection effort
- Locked away from fisheries within closed areas at the time (see D. Ovando et al. in Conbio March 2021)

This appears to be what is happening within the draft SoCal copper rockfish data-moderate length-based assessment effort. That it affects the draft vermilion assessment to a much lesser degree is testament to more full data resources there.

In time a policy decision may have to be made with respect to how to manage these inshore impacted reefs – whether the fishery there continues to be sustained primarily by recruitment from outside areas or instead rebuilt to self sustainability.

Casting the region-wide copper fishery into “rebuilding status” instead would likely result in painful, undue access restrictions to other healthy stocks.

A minimum size limit might help the inshore copper resource rebuild while creating less hardship for those willing to travel and fish where these stocks are healthy.

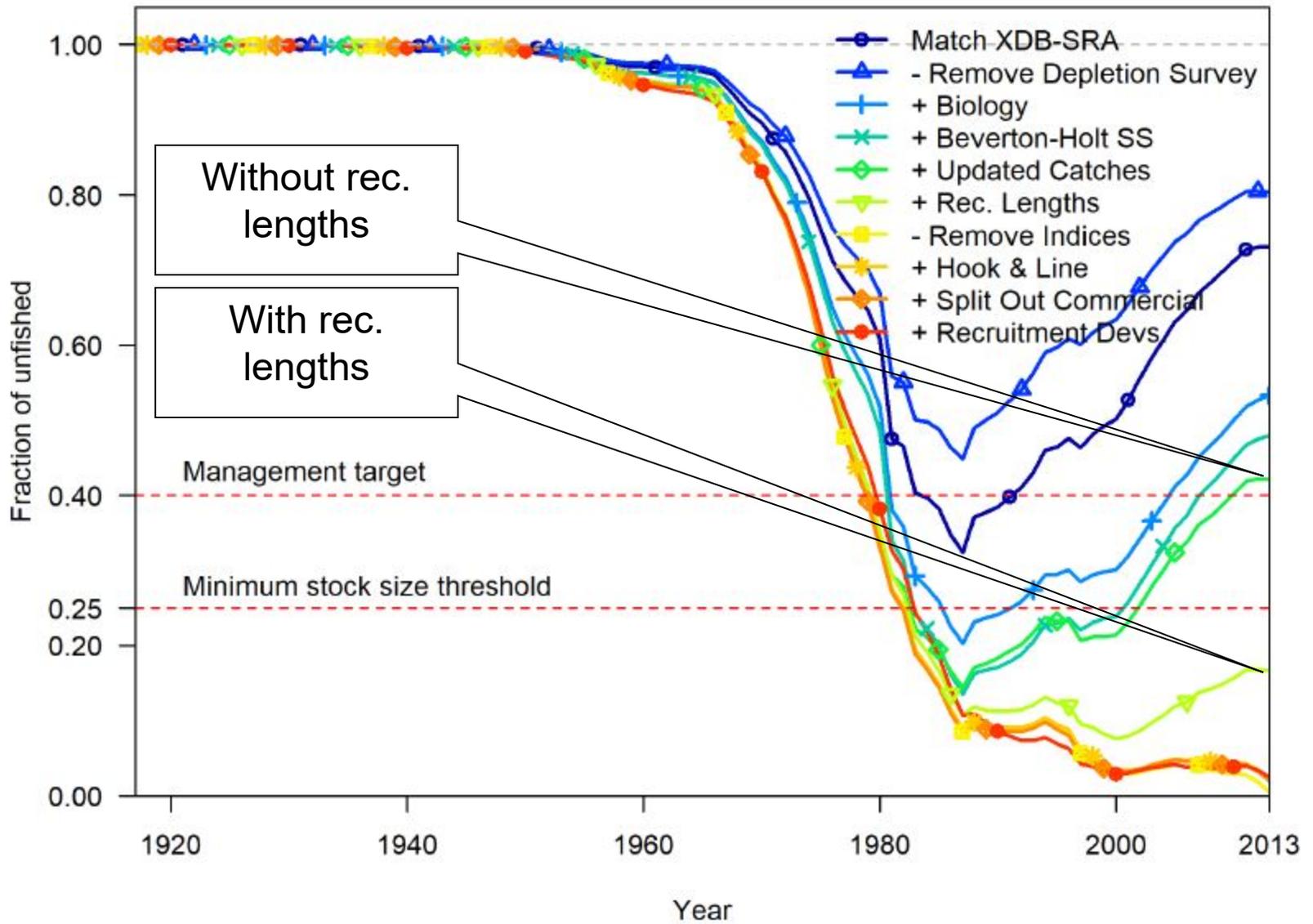
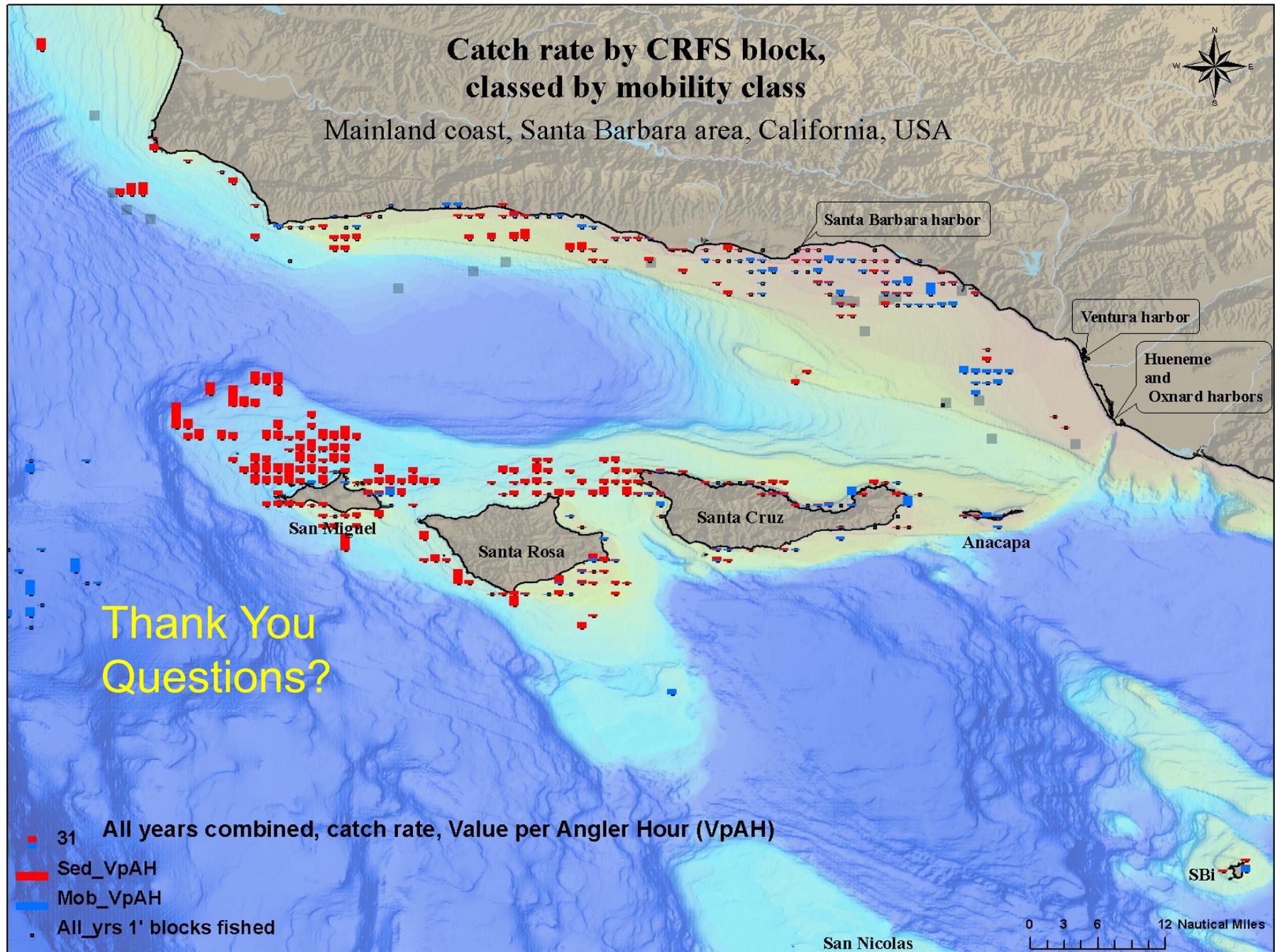


Figure 32: The time series of fraction unfished for updates to the 2013 model.



Thank You
Questions?