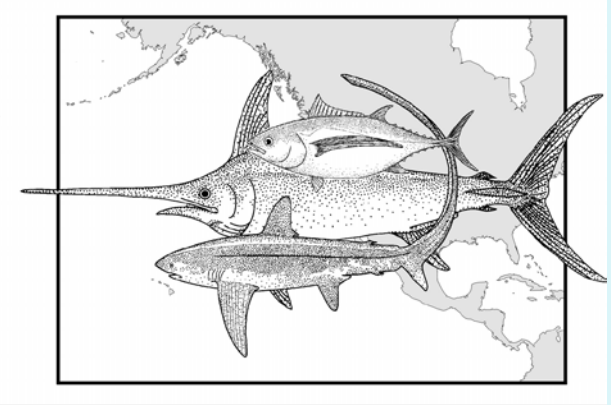
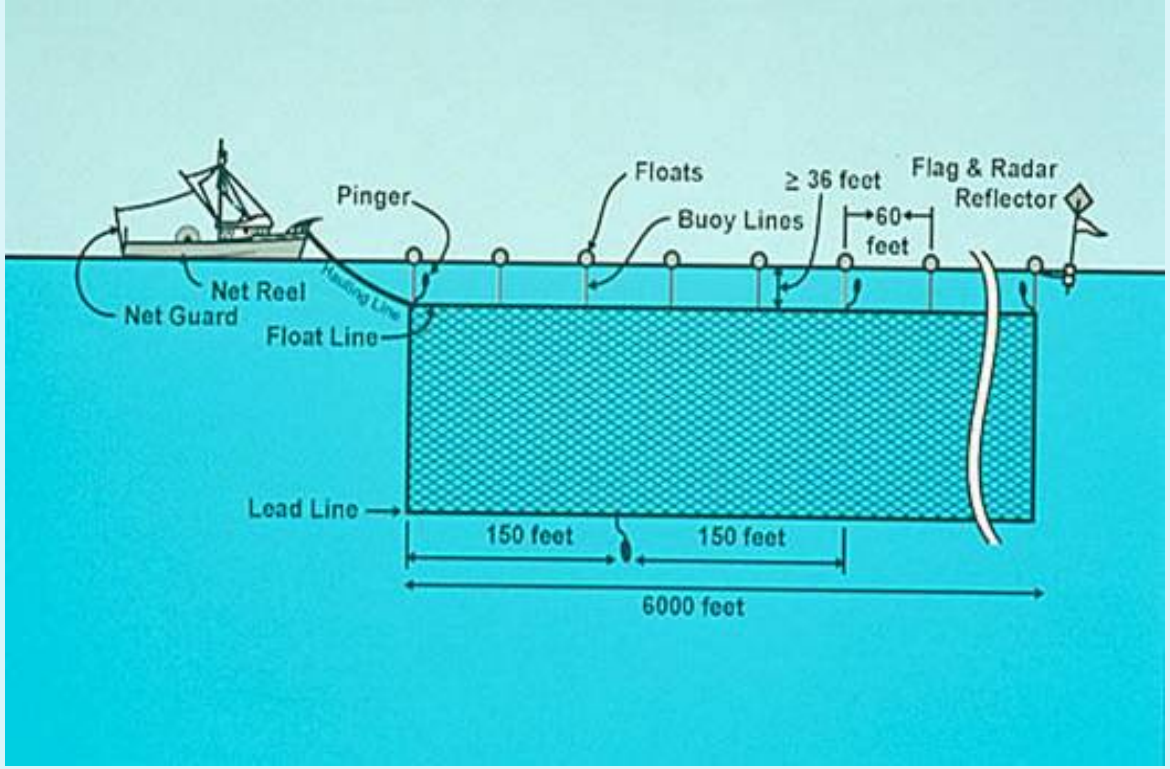


California drift gillnet fishery

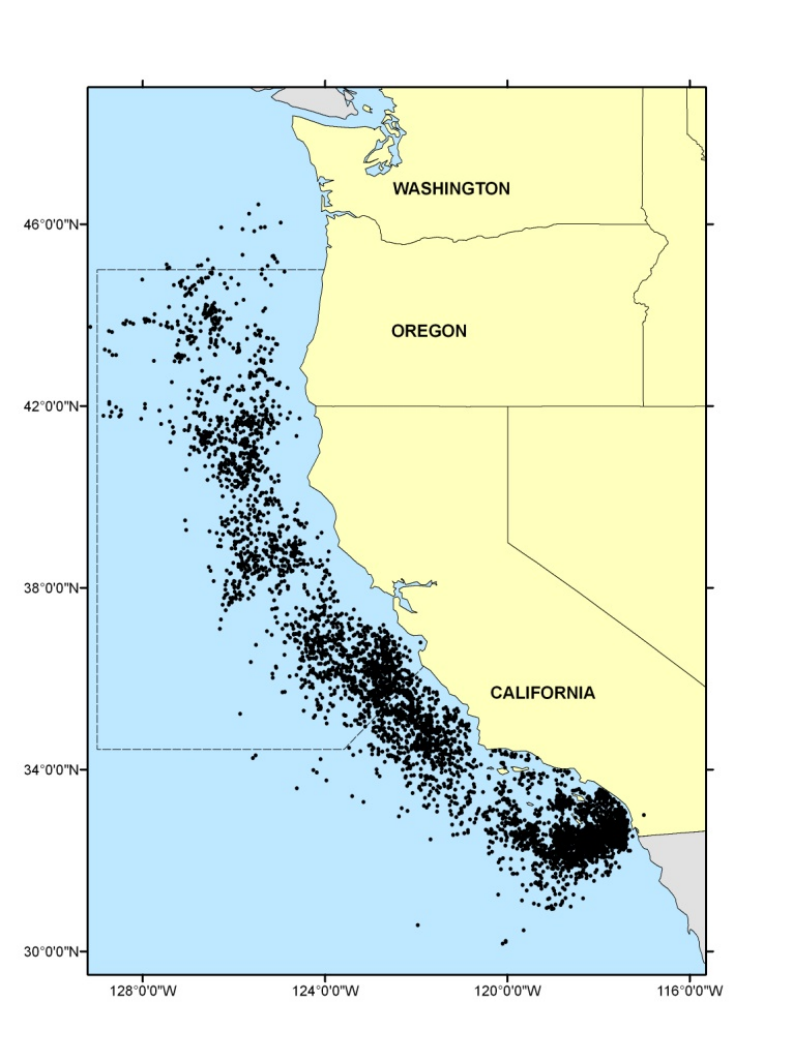
management success, with implications for seafood imports



Broadbill swordfish

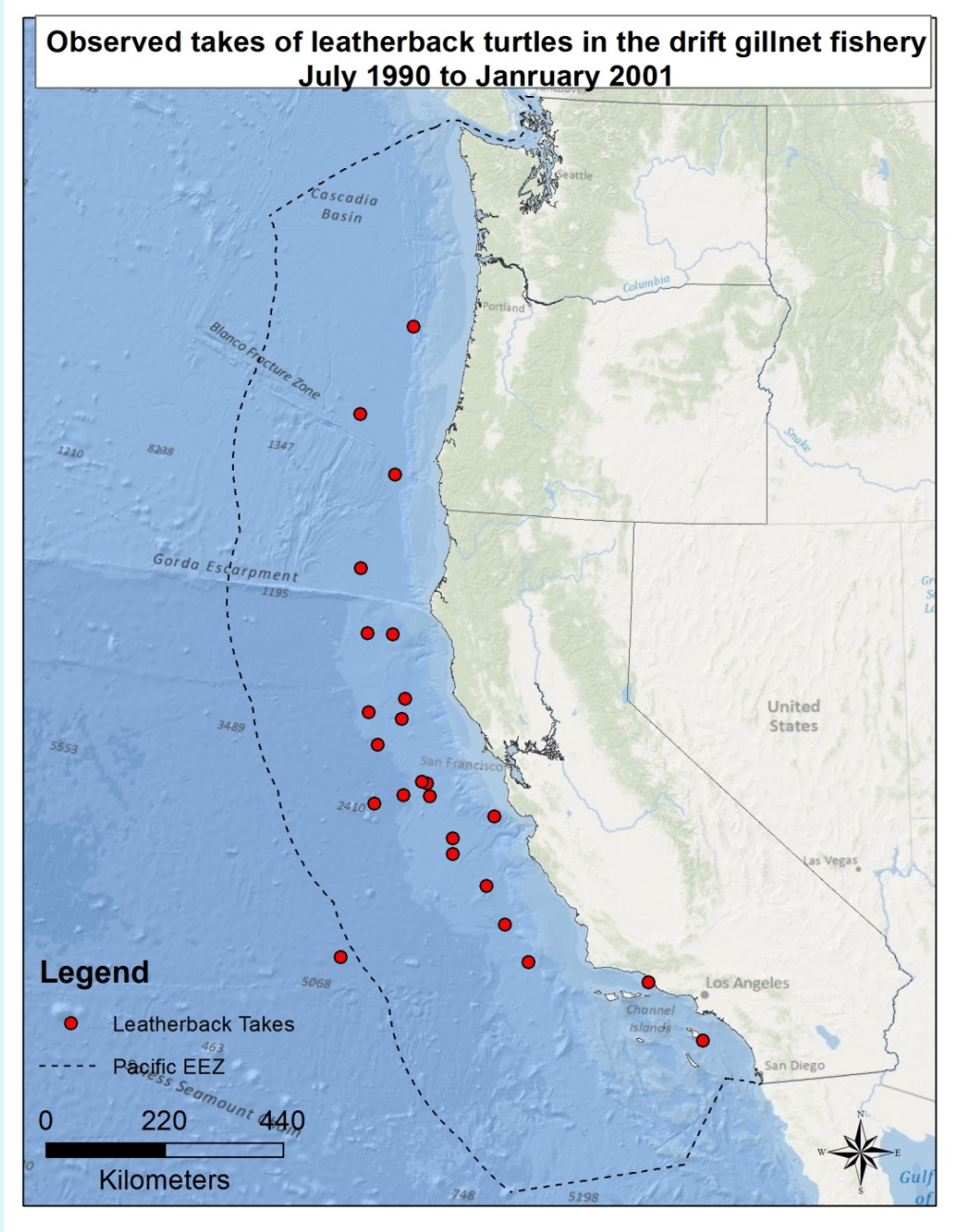
2000 Endangered Species Act (ESA) Consultation on the DGN Fishery

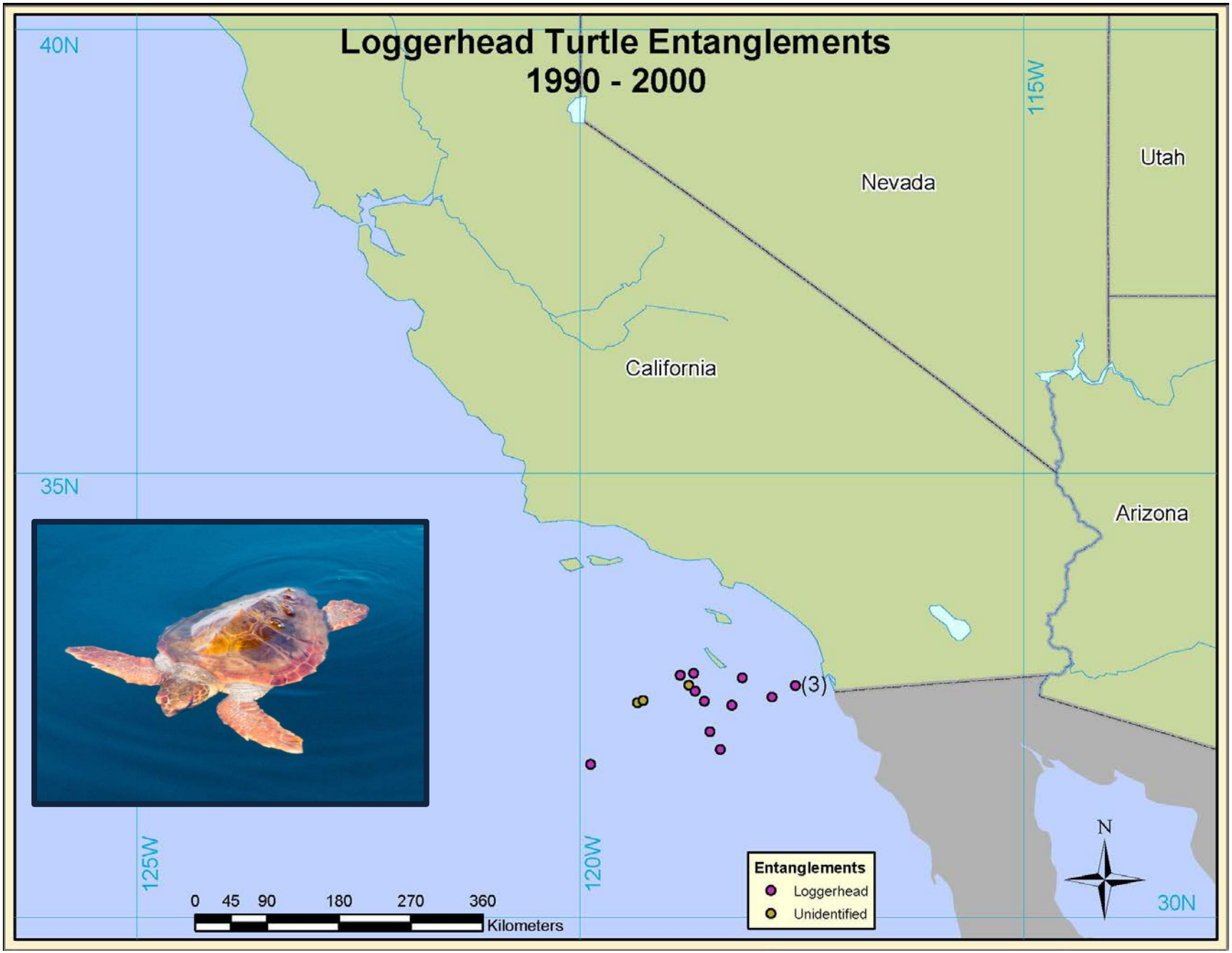
1. Used observer data from 1990-2000
2. Fishery observed on average, ~16% a year, which we used to derive estimated takes
3. Analyzed impacts to 4 species of sea turtles, 3 whales, and 1 pinniped
4. Reached a "jeopardy" conclusion for leatherback sea turtles (E) and loggerhead sea turtles (T*)
5. Result: NMFS had to craft a "reasonable and prudent alternative" to reduce impacts to these 2 species



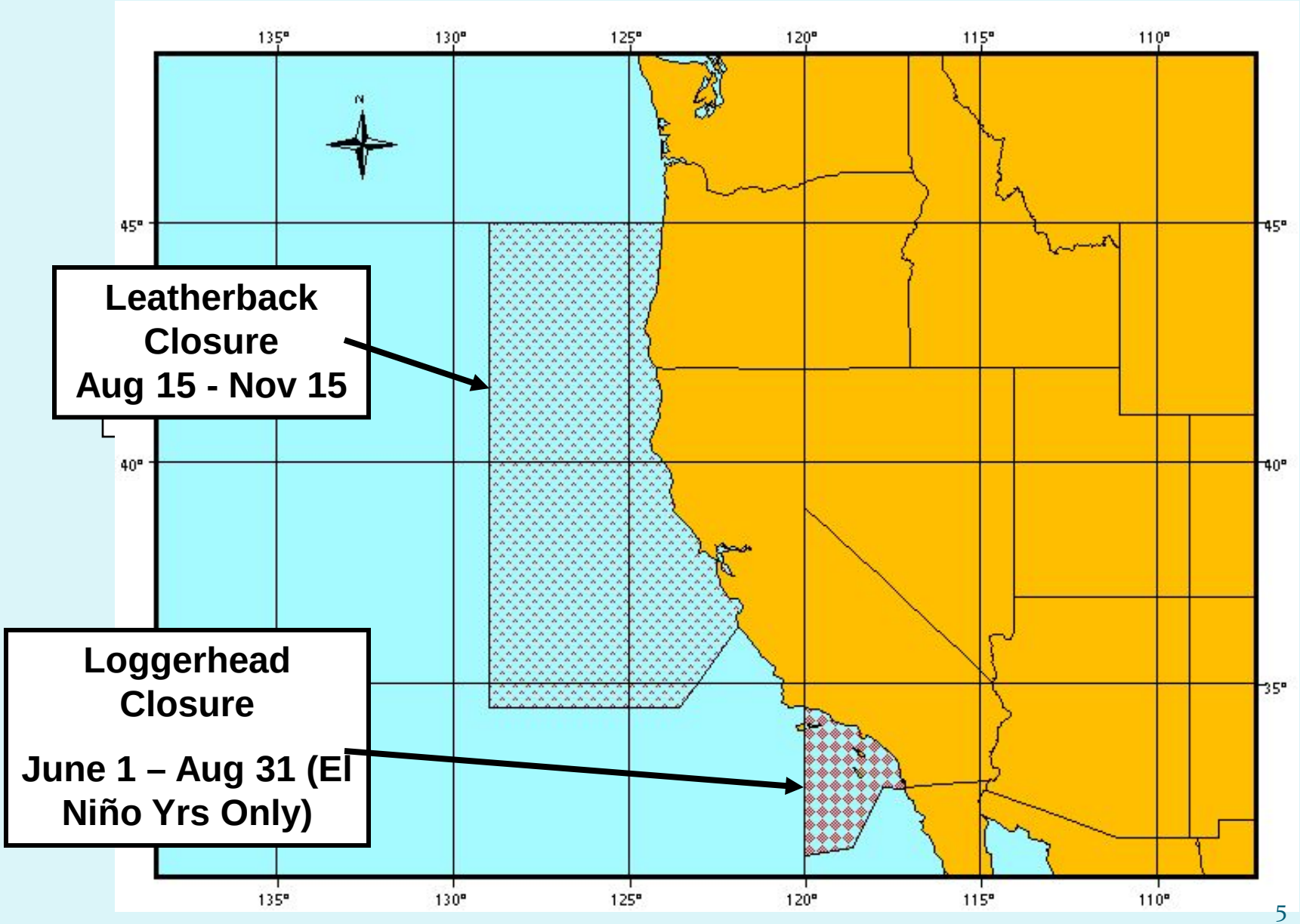
DGN sets 1990-2000

Leatherback interactions observed in the CA/OR drift gillnet fishery: 1990-2001




Loggerhead Turtle Entanglements
1990 - 2000
40N
35N
30N
125W
120W
115W
Nevada
Utah
California
Arizona
(3)
Entanglements
Loggerhead
Unidentified
0 45 90 180 270 360
Kilometers
N

Sea Turtle Conservation Areas



Since 2000 ESA consultation and associated sea turtle closures…

DGN impact on ESA-listed species:
*<u>90 % reduction</u> in leatherback interactions (2 alive)
*<u>85 % reduction</u> in loggerhead interactions (2 alive)
*<u>No interactions</u> with green or olive ridley turtles

*No observed interactions with fin or humpback whales
*Sperm whales…

Amount and extent of take of ESA-listed species in the DGN Fishery (Incidental Take Statement in 2013 Biological Opinion)

Species	Annual Take	5-year take total	Expected mortalities during 5-year period
Fin Whale	Up to 1	Up to 2	Up to 1
Humpback whale	Up to 2	Up to 4	Up to 2
Sperm whale	Up to 2	Up to 8	Up to 6
Leatherback turtle	Up to 3	Up to 10	Up to 7
Loggerhead turtle	Up to 3	Up to 7	Up to 4
Olive ridley turtle	Up to 1	Up to 2	Up to 1
Green turtle	Up to 1	Up to 2	Up to 1

Marine Mammal Protection Act (MMPA)

Amended in 1994 to include new program for managing marine mammal bycatch:

*1. Stock Assessment Reports ("PBR")

*2. Categorization of Fisheries

3. Registration/Monitoring Program

4. Reporting (Observer) Program

*5. Take Reduction Plans

Stock Assessment Reports

- Developed for all U.S. marine mammal stocks

- Provide estimates of stock abundance and human caused mortalities and serious injuries (including fishery takes)

- Provide Potential Biological Removal (PBR) level and status relative to PBR

Potential Biological Removal (PBR)

- **maximum number of animals, not including natural mortalities, that may be removed while allowing the stock to maintain healthy levels**

- PBR calculated based on:
  1. Estimate of minimum population size
  2. Estimate of productivity rate (trend)
  3. Recovery factor

- PBRs change based on new information, such as new estimates of population size

MMPA List of Fisheries

- List of ALL U.S. commercial fisheries
- Each fishery placed into 1 of 3 categories based on level of marine mammal take
- Categorization determines requirements

Category I - frequent takes
Category II – occasional takes
Category III - rare or no known takes

Category I

Frequent incidental mortality and serious injury

- annual take in a given fishery is ≥ 50% of PBR

Category II

Occasional incidental mortality and serious injury

- annual take in a given fishery >1 to < 50% of PBR

Category III

Remote likelihood of incidental mortality and serious injury

- annual removal across all fisheries is ≤ 10% of PBR
- annual removal by itself ≤ 1% of PBR

Take Reduction Plans

- NMFS can convene Take Reduction Teams for Category I and II fisheries
- Team develops consensus plan to reduce bycatch below PBR
- Team members include representatives from:
  - fishing industry
  - environmental groups
  - academic/scientific organizations
  - regional fishery management councils
  - Federal and State Government

Take Reduction Plan Goals

- Short term goal – within 6 months of Plan implementation, reduce marine mammal serious injury/mortality to below the Potential Biological Removal (PBR) level for a strategic stock

- Long term goal – within 5 years of Plan implementation, reduce levels to approaching zero (10% of PBR)

Pacific Offshore Cetacean Take Reduction Team

- NMFS convened Team in 1996 to develop consensus plan to reduce marine mammal takes in the CA/OR drift gillnet fishery
- Fishery had historical take of :
  - sperm whales
  - humpback whales
  - pygmy sperm whales
  - short-finned pilot whales
  - beaked whales

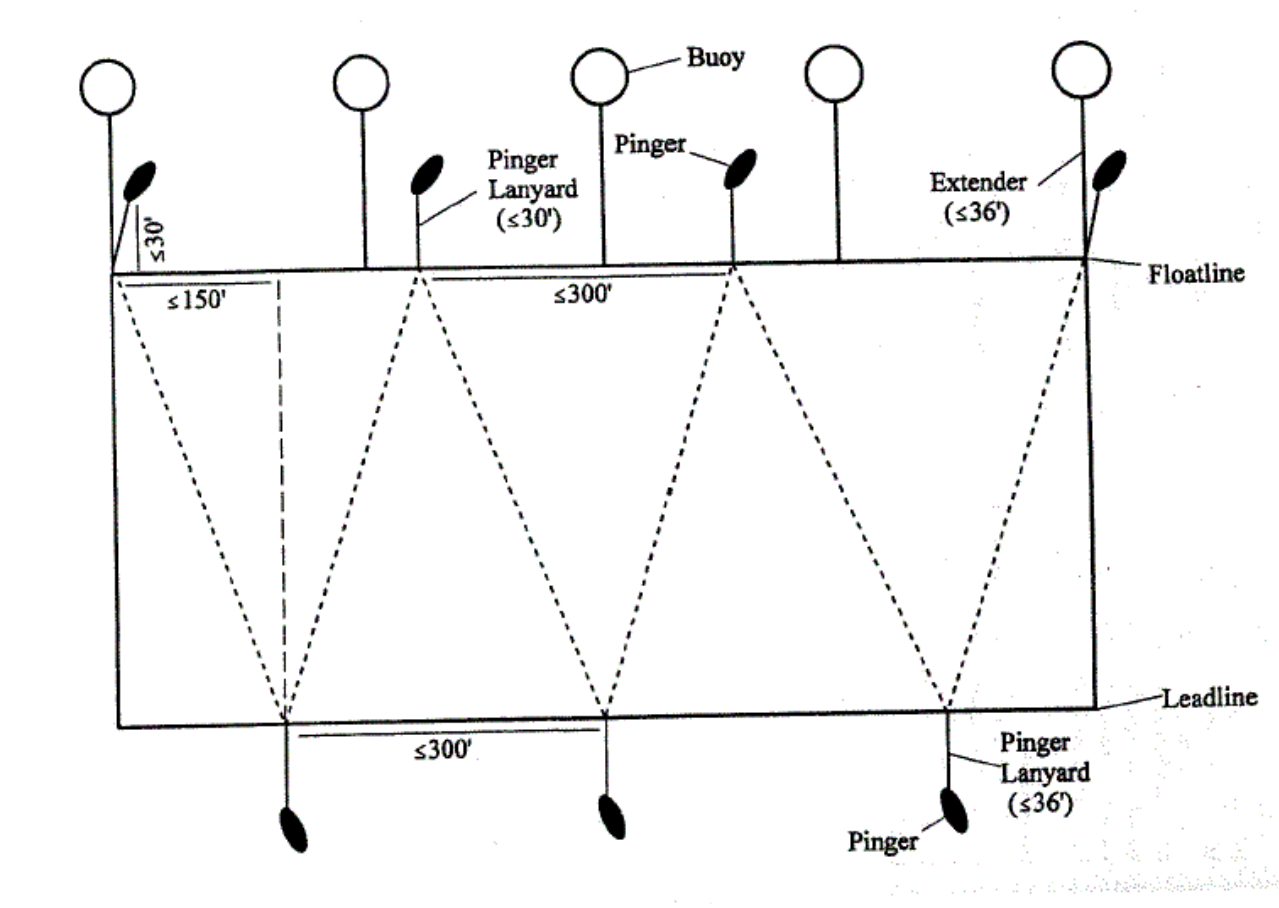
Pacific Offshore Cetacean Take Reduction Plan Requirements

- All extenders must be ≥ 36 foot
- Pingers must be used on all sets and meet required specifications
- Skippers must attend workshops (when notified)

Pinger Requirements

- Must be used during all sets
- Spaced ≤ 300 feet apart on leadline, floatline (staggered configuration)
- At sea, full complement must be onboard
- All pingers must be operational & functioning within sound specifications

Pinger and Extender Configuration



Effectiveness of Pingers

- Cetacean bycatch nearly 50% lower in sets with ≥30 pingers compared to non-pingered sets

- 3.7% of observed sets had ≥ 1 failed pinger
  - In those sets, ~18% of deployed pingers had failed
  - Cetacean bycatch rate 10x higher in sets where ≥ 1 pinger failed v. sets without pinger failure

Beaked whale entanglements 1990-1995

35 observed entangled in 3,303 sets (12% coverage.)

21- Cuvier's beaked whale
3 - unidentified beaked whales
2 - unidentified Mesoplodon
1- Stejneger's beaked whale
5 – Hubbs' beaked whale
1 – Baird's beaked whale
2 – Pygmy sperm whale (not really a beaked whale but demonstrated sensitivity to anthropogenic noise)

1996-2014:

zero observed in >4,400 sets

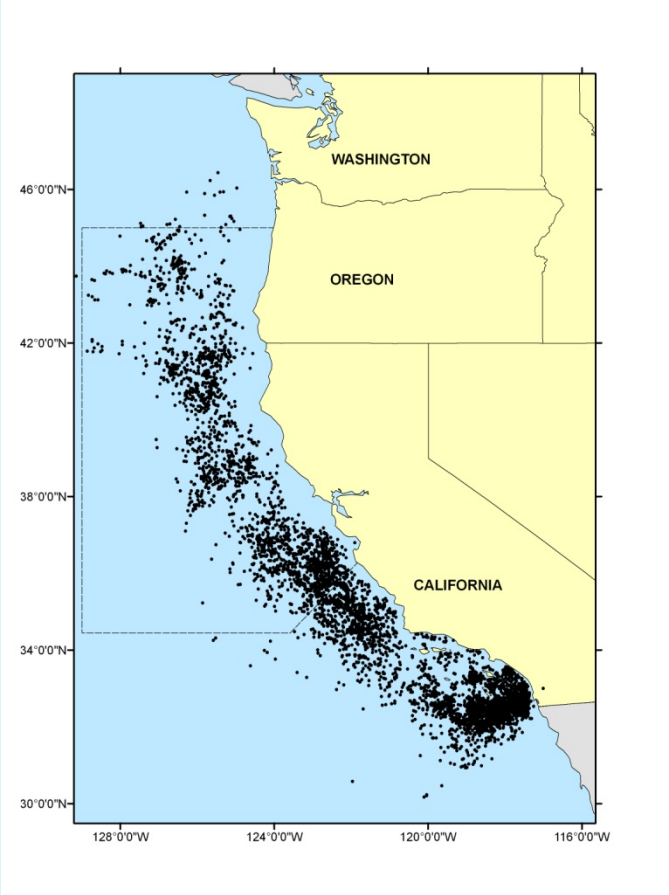
Summary of species covered under the Take Reduction Plan (TRP). (S) denotes 'strategic' stocks. SI = serious injury.

Species	PBR	Annual Human-related Mortality + SI (2007-2011)	Annual DGN Mortality + SI (2007-2011)
Sperm Whale (S)*	2.7*	1.7*	1.3*
Pygmy sperm whale	2.7	0	0
Mesoplodon beaked whales	3.9	0	0
Short-finned pilot whale	4.6	0	0
Baird's beaked whale	4.7	0	0
Humpback whale (S)	11	5.5	0.2
Cuvier's beaked whale	45	0	0

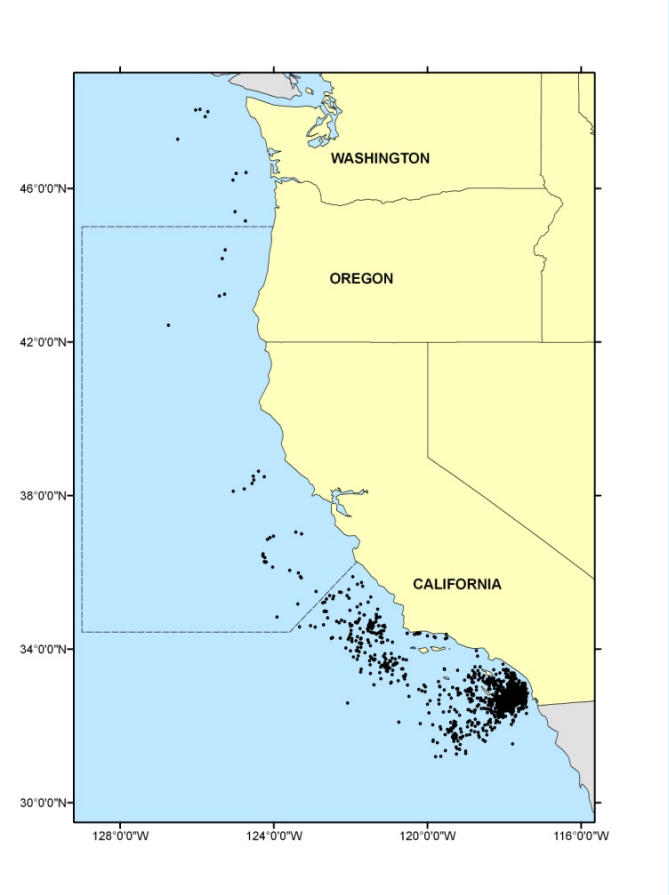
*Draft 2014 Stock Assessment: sperm whale PBR is 2.7, up from 1.5;
Annual SI/M attributed to the CA DGN fishery (2001-2012) is 1.3, down from 3.2

DGN Management – Success?

Impact of Leatherback Time/Area Closure…

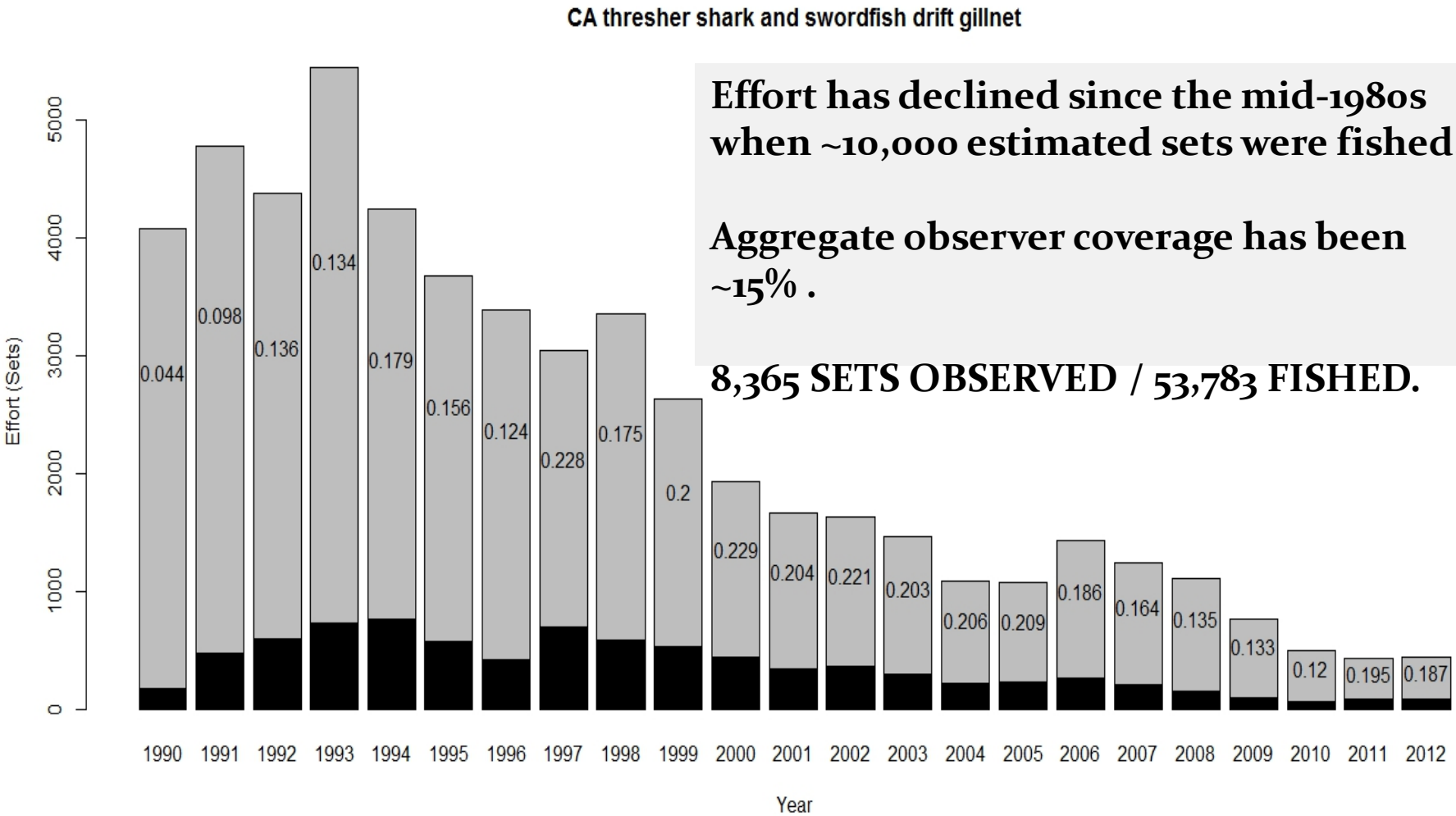


DGN sets 1990-2000



DGN sets after 2001

Observer Coverage & Estimated Fishing Effort



Effort has declined since the mid-1980s when ~10,000 estimated sets were fished.

Aggregate observer coverage has been ~15% .

8,365 SETS OBSERVED / 53,783 FISHED.

MMPA Import Provisions (Sec. 101(a)(2)) and 102(c)(3)

- "the Secretary of the Treasury shall ban the importation of commercial fish … which have been caught with commercial fishing technology which results in the incidental kill or incidental serious injury of ocean mammals in excess of U.S. standards. For purposes of applying the preceding sentence, the Secretary –
- *(A) shall insist on reasonable proof* from the government of any nation from which fish … will be exported to the United States of the effects on ocean mammals of the commercial fishing technology in use for such fish … exported from such nation to the United States."*
- "Comparability Standards" … how do we define?

“Comparability Standards”…?

- Marine mammal stock assessment program?
  - PBR?
  - List of Fisheries?
    - Cat I and II focus?
- Monitoring program to assess marine mammal serious injury/mortality?
- Comparable regulatory program to reduce serious injury/mortality of marine mammals in export fisheries?
  - *Pingers*? *Time/area closures*?
- Harvesting nations not receiving a “comparability finding” may be subject to measures under 101(2)(2) – import prohibitions…?

Moratorium Protection Act:

Addressing Bycatch in Mexico (and other countries)

- January 2013 – NMFS formally "identified" Mexico for its lack of an effective regulatory program to address bycatch in their bottom-set gillnet fishery under the bycatch provision of the Magnuson-Stevens Act (Sec. 610)
- First time a country has been identified for bycatch issues
- By January 2015, NMFS must report to Congress whether Mexico has a regulatory program for NP loggerheads **comparable to the U.S.** (e.g. turtle "cap," time/area closure, enforcement, monitoring)
- Allowance for a 180-day delay (could still mean trade sanctions, denial of port privileges, etc.)

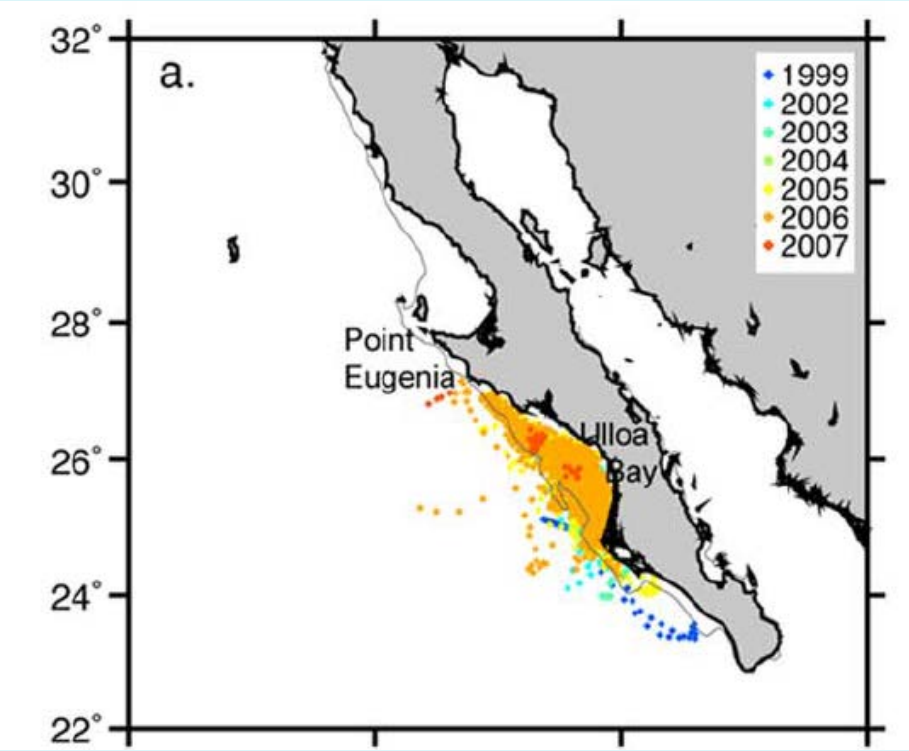
Identification of Mexico under the Moratorium Protection Act

In July, 2012, 438 loggerheads dead-stranded along a 43-km beach near Playa San Lazaro, Baja CA

Represented a 600% increase over a monthly July average of 78 loggerheads since 2003

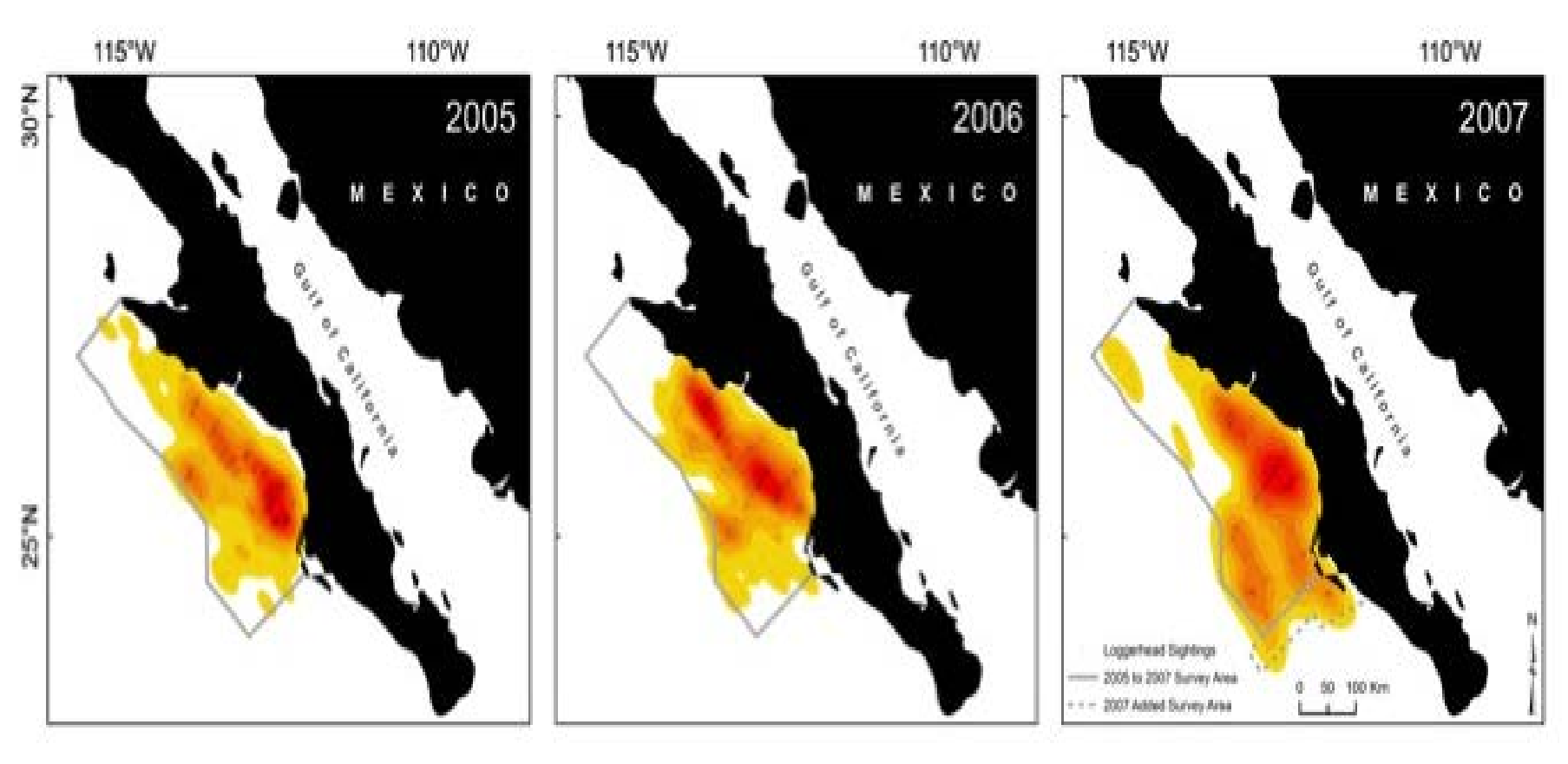
Based on past documentation and research, the U.S. believed bycatch in the gillnet fishery to be the cause of the strandings

Past research has estimated 1,000+ loggerheads die/year in this area in gillnets/longlines

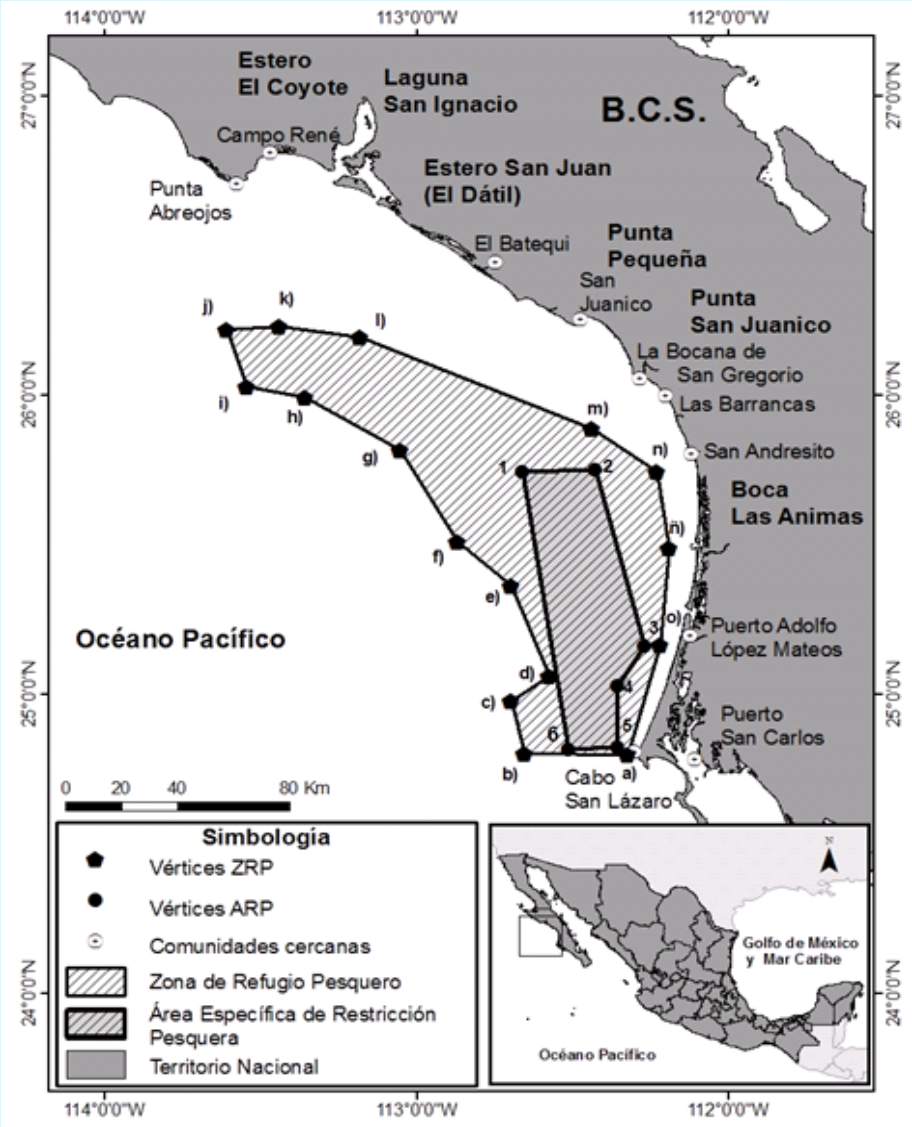


Juvenile Loggerhead tracks 1999-2007 (n=30)
Wingfield et al (2011)

Loggerhead distribution (aerial surveys 2005-2007); Seminoff et al. 2014 ---



Mexico's proposed Temporary Fishery Reserve, 2015

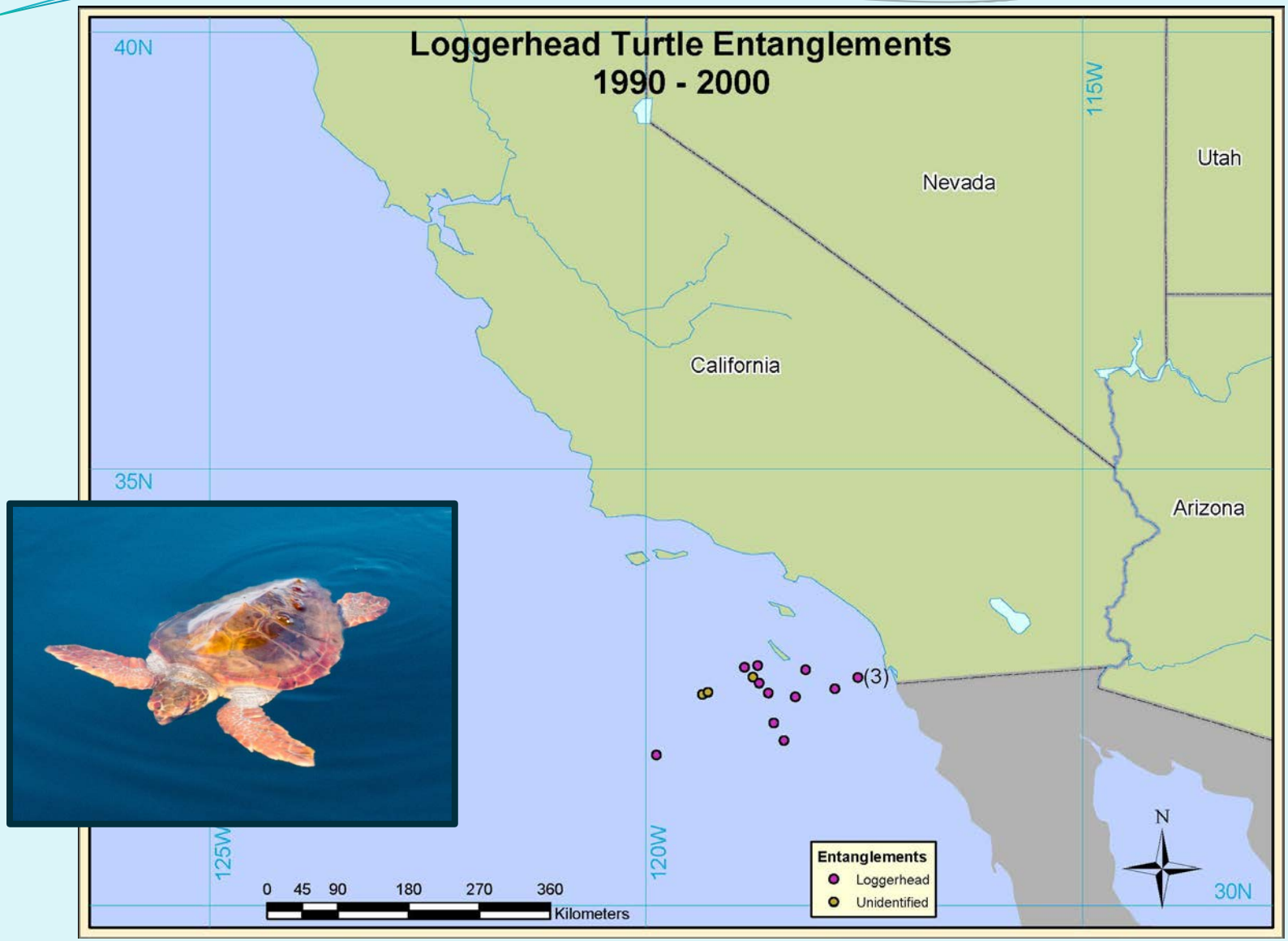


Cap on loggerheads = 90 mortalities

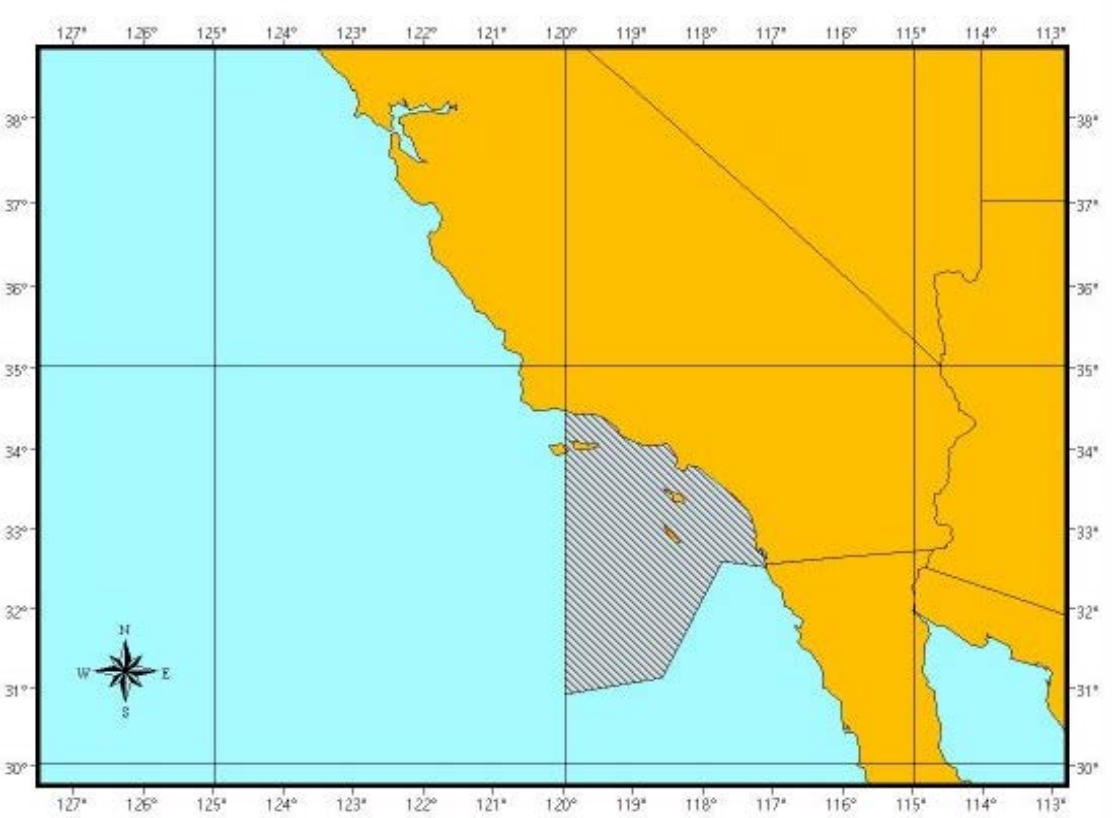
When cap is reached, fishing suspended in the reserve from May-August

Observer coverage, cameras, satellites

Gear restrictions: maximum mesh size within the Reserve, mandatory circle hooks within the Reserve


Loggerhead Turtle Entanglements
1990 - 2000
40N
35N
30N
125W
120W
115W
Nevada
Utah
California
Arizona
(3)
N
0 45 90 180 270 360
Kilometers
Entanglements
Loggerhead
Unidentified

U.S. Regulations: Southern California time-area closure when El Niño is predicted or occurring between June 1 and August 31



ESA Incidental Take Statement:

Up to 3 loggerheads taken/year

Up to 4 loggerhead mortalities/5 years

“Comparability”: Mexico v. U.S.

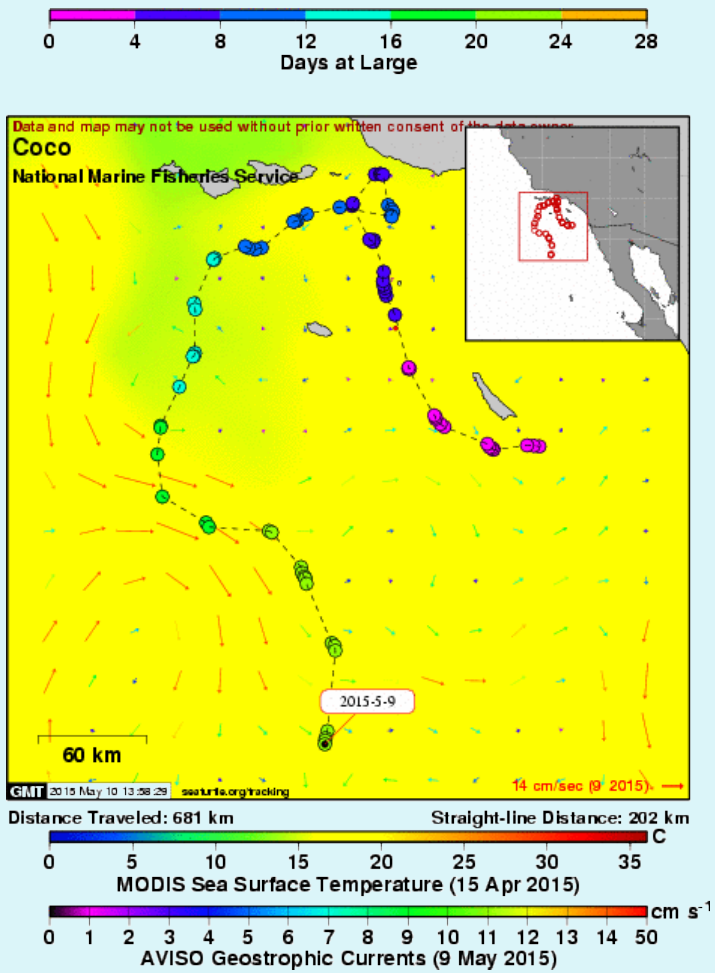
- Time/area closures
  - U.S.
- Loggerhead “caps”
  - U.S. (ITS)
- Gear requirements
  - U.S. (HLL)
- Observer coverage
- Enforcement

- STATUS: decision to be made in June, 2015

<u>Positive Certification</u>:
A nation has provided documentary evidence of adoption of regulatory program comparable to U.S.

<u>Negative Certification</u>:
-Trade Sanctions
-Port Access Limitations
…Etc.

DGN Management – Success?



Loggerhead released off San Clemente Is. 4/15/2015

http://www.seaturtle.org/tracking/index.shtml?tag_id=126070&full=1&lang=