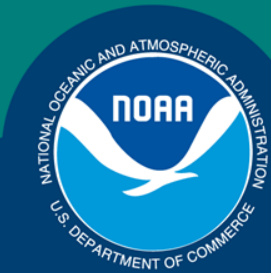


*Science, Service, Stewardship*



# **HMS Fishery Dependent Monitoring for International Management**

**PIFSC External Review  
Data for Stock Assessment**

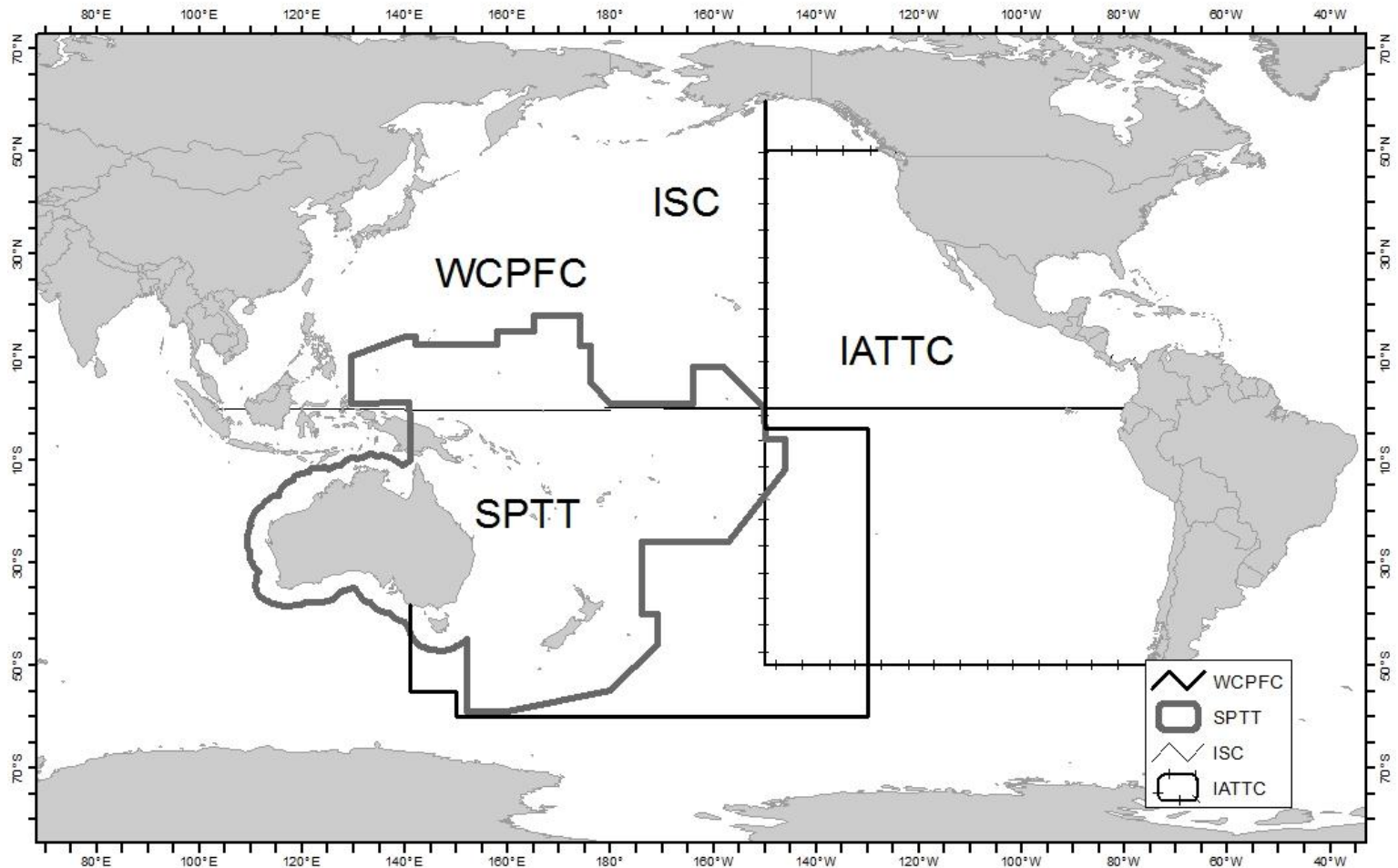
**June 25, 2013**

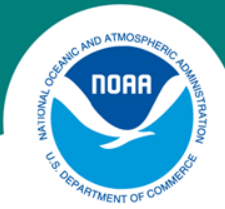
**NOAA  
FISHERIES  
SERVICE**

NOAA



# Tuna-RFMOs, ISC and South Pacific Tuna Treaty (SPTT)





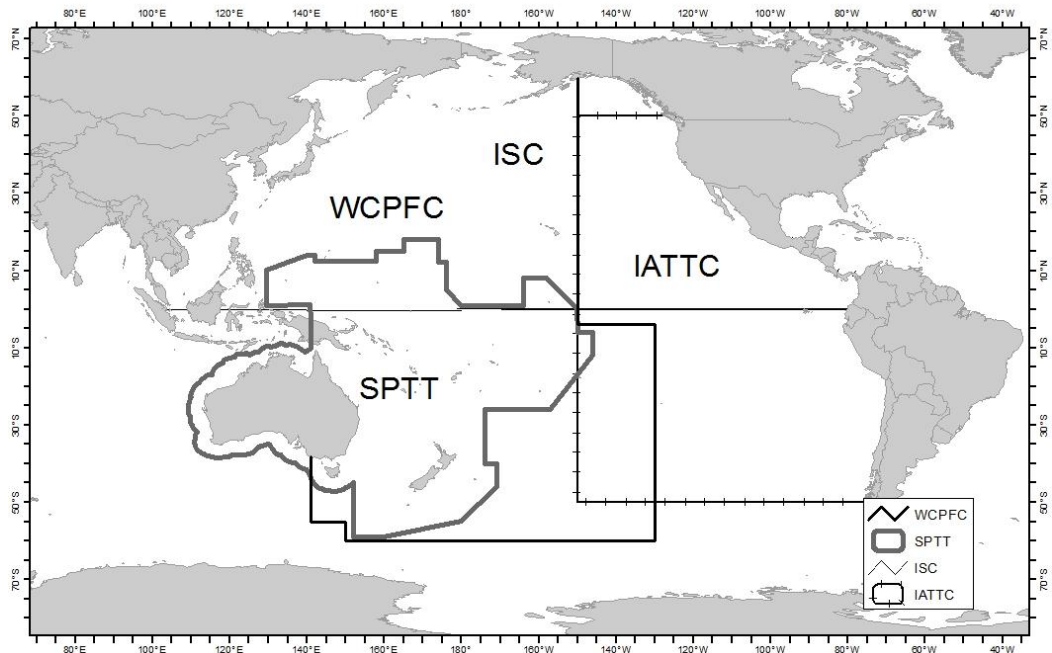
## Participation in Tuna-RFMOs and the ISC

WCPFC – 25 cooperating members, 7 participating territories and 11 cooperating non-members

IATTC – 22 members and 2 cooperating non-members

ISC – 8 members

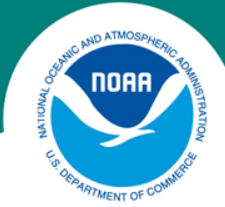
All organizations have ‘observer’ status





## Data and Report Submissions

- **WCPFC – PIFSC is Data Correspondent**
  - Data submission is due April 30
  - National Report is due July 7
  - CAT1 – annual total catch by species and gear, total vessels
  - CAT2 – aggregated (1<sup>o</sup> or 5<sup>o</sup> – monthly) catch and effort
  - CAT3 – aggregated (5<sup>o</sup> – monthly) size frequency by species and gear
- **IATTC – SWFSC is Data Correspondent**
  - Data submission is due July 1
  - National Report is due July 1
- **ISC – SWFSC is Data Correspondent**
  - Data submission is due July 1
  - National Report is due July 1
  - Same format as WCPFC CAT submissions



## **How Data Are Collected**

- Hawaii: PIFSC, HDAR
  - Longline logbook, troll, handline, pole & line
- California: SWFSC, PIRO (American Samoa Office)
  - Longline logbook, purse seine, albacore troll (North and South Pacific), West Coast fisheries (drift gillnet, harpoon, sport, other)
- American Samoa (PIFSC, WPACFIN)
  - Longline logbook, troll
- CNMI (PIFSC, WPACFIN)
  - Longline logbook, troll





## **Tuna-RFMOs and ISC Working Groups**

### WCPFC Scientific Committee Themes

- 1) Data and Statistics - coordinate the collection, compilation and dissemination of tuna fisheries and related data.

Includes periodic reviews of the standards and policies of the Commission in regards to data collection, compilation and dissemination.

- 2) Stock Assessment
- 3) Ecosystem and Bycatch
- 4) Management Issues

IATTC – Scientific Advisory Committee

ISC working groups

Statistics, Albacore, Bluefin, Billfish and Sharks



## **How HMS assessments are conducted, different models among scientific bodies**

### **WCPFC**

Limited (n=2) scientific staff

Data management, shark research program and assessments are contracted to a Scientific Services Provider – Secretariat of the Pacific Community (SPC)

2013 WCPFC Scientific Committee budget – \$US 1,364,000

### **IATTC**

Large (>50) scientific staff

In-house data collection and databases, biology and ecosystem research, stock assessment and bycatch.

2013 IATTC Science budget – \$US 5,242,000

### **ISC**

No scientific staff

Life history and ecological research conducted by individual members. Assessments are conducted at workshops with members supplying indices.

2013 ISC Budget – \$US 0



## **WCPFC assessments conducted by SPC**

<b>Species</b>	<b>Assessment frequency</b>	<b>Assessment platform</b>
<b>Skipjack tuna</b>	Annual or biennial	Multifan CL
<b>Yellowfin tuna</b>	Annual or biennial	Multifan CL
<b>Bigeye tuna</b>	Annual or biennial	Multifan CL
<b>S Pacific albacore</b>	Annual or biennial	Multifan CL
<b>SW Pacific striped marlin</b>	Infrequent (2006, 2012)	Multifan CL
<b>S Pacific swordfish</b>	Infrequent (2006, 2013)	Multifan CL
<b>Oceanic white-tip shark</b>	2012	Stock synthesis 3
<b>Silky shark</b>	2012	Stock synthesis 3
<b>Blue shark</b>	Scheduled 2013	Stock synthesis 3





## **WCPFC stock assessment structure and PIFSC indices**

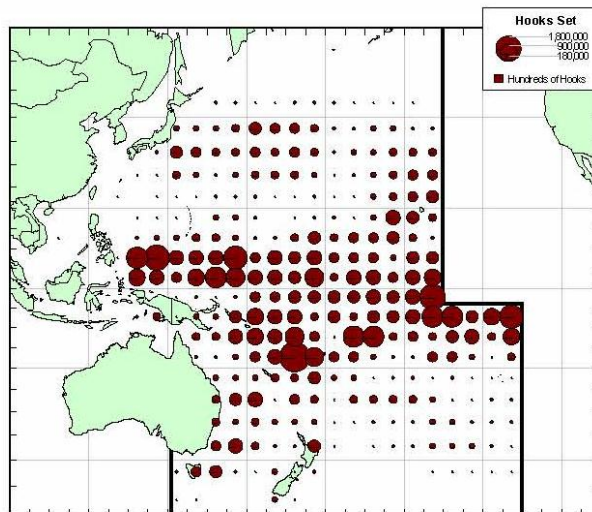
	<b>Tuna and Billfish</b>	<b>Sharks</b>
<b>Time-step</b>	Quarterly	Annual
<b>Spatially disaggregated</b>	Yes	No
<b>CPUE indices</b>	Nominal longline CPUE for bigeye and yellowfin. Nominal purse seine CPUE for skipjack, yellowfin and bigeye. Standardized CPUE for S Pacific albacore.	HI longline (Walsh agenda item 4.0) Purse seine (SPTT observer data)
<b>Size (length or weight data)</b>	Port sampling	Observer data
<b>Tagging data</b>	Skipjack, yellowfin and bigeye. Small amount from Hawaii Tuna Tagging Program (1990s)	None



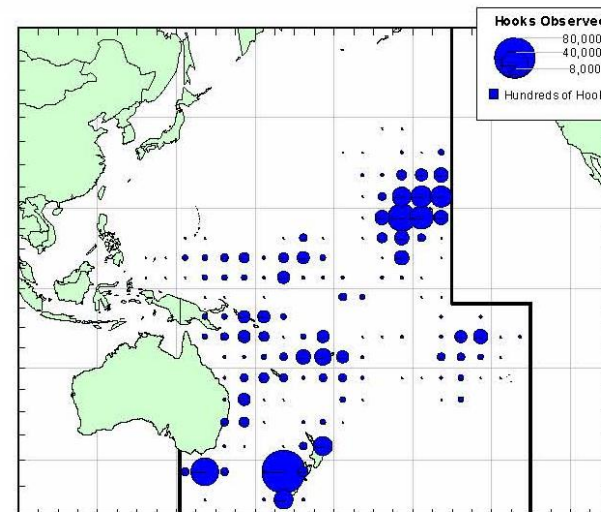
## Where US data excels in WCPFC assessments – longline and observer data

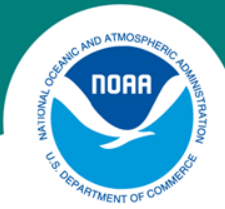
	Countries complying	Non-compliance
<b>Longline logbook data – tunas and billfish</b>	AU, NZ, Pacific Islands and USA (2007-present)	China, Japan, Korea and Taiwan
<b>Observer data – sharks, other species not accurately recorded on logbooks</b>	5% mandatory coverage as of 30 June 2012. AU, NZ and USA	China, Japan, Korea, Taiwan and some Pacific Island countries

5° – month data



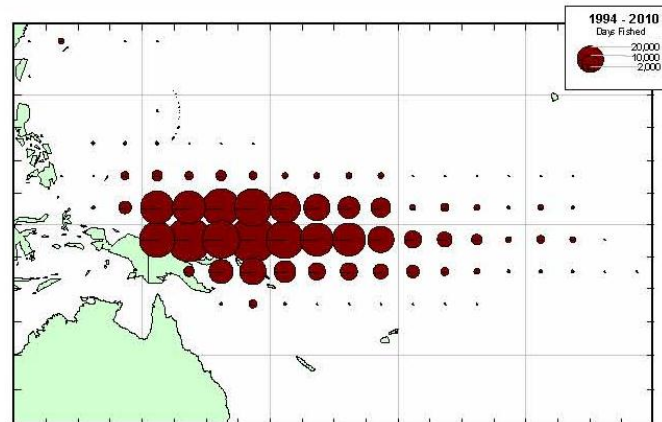
Observer data



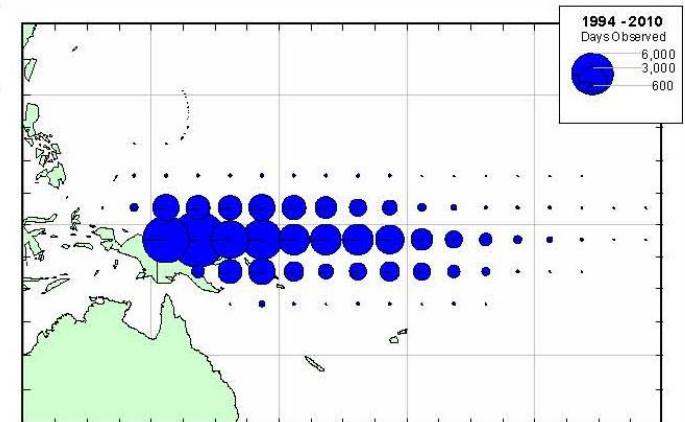


## Where US data is poor in WCPFC assessments – purse seine

5° – month data



Observer data



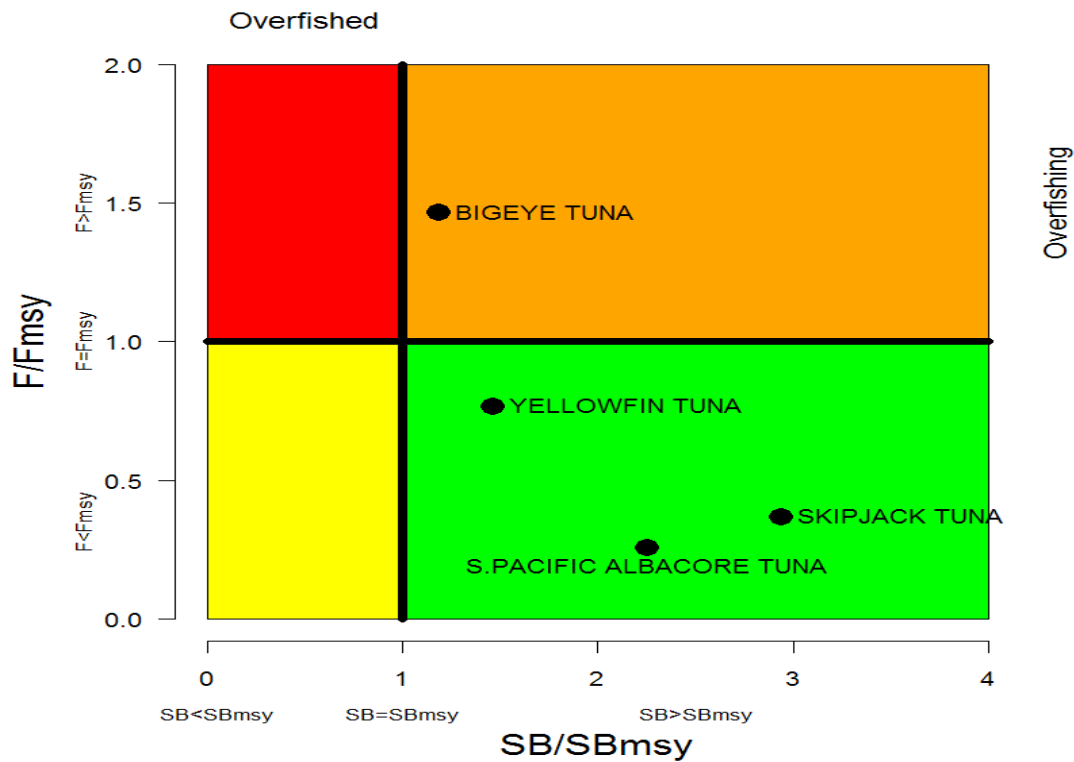
Total US purse seine catch is estimated accurately – ~250,000 mt annually

Species composition is poorly estimated but is important in the skipjack, yellowfin and bigeye tuna assessments.

Requires additional data management and research using logsheet (RPLs), unloadings (ULs, FOTs), observer (100% coverage), spill sampling and port sampling.



**Outputs – 1) time-series of fishing mortality, biomass, recruitment and fishing impact by sector,**  
**2) stock status with regard to various reference points - MSY ( $F/F_{MSY}$ ,  $SB/SB_{MSY}$ ),**  
**3) depletion (biomass compared to initial)**



Species	Skipjack	Yellowfin	Bigeye	SP albacore
Depletion	50%	55%	80%	40%



## PIFSC data used in IATTC and ISC Stock Assessments

- IATTC Stock Assessments
  - Eastern Pacific bigeye, yellowfin, skipjack tuna and striped marlin
  - Hawaii longline logbook total catch data are used in the bigeye, yellowfin and striped marlin assessments. No CPUE indices used.
- ISC Stock Assessments
  - Billfish: Swordfish, Striped marlin (agenda item 4.0), Blue marlin
  - Sharks: Blue shark

Use of corrected longline catch and standardized CPUE indices (Bill Walsh, agenda item 4.4)

Size data from port and observer sampling

- North Pacific albacore

Logbook data standardized CPUE and size data from port and observer sampling

- Pacific Bluefin tuna (no PIFSC indices due to small catches)



## WCPFC Conservation and Managements Measure (CMM) Requirements

- **CMM 2005-03 – Every 6 months** – North Pacific albacore, catch and effort summary tables.
- **CMM 2009-03 – Annually** – South Pacific swordfish, total number of vessels that fished for swordfish south of 20°S and the total catch of swordfish.
- **CMM 2010-05 – Annually** – South Pacific albacore, vessel numbers that fished south of 20°S and the total catch of albacore.
- **CMM 2012-01 – Monthly** – shall report monthly the amount of bigeye catch by its flagged vessels to the Secretariat by the end of the following month.

Extensive reporting on fish, sharks, sea turtles, cetaceans and seabirds as required in Part 1 of the USA country report due in July.



## RFMO Catch Limits

WCPFC – US longline catch limit: 3,763 mt for bigeye tuna.

Complicated data management and reporting – US, Dual permits (HI & AS) assigned to AS if fishing outside US EEZ. Section 113a attribution to AS for participating vessels in agreement with AS.

IATTC – US longline catch limit of 500 mt for bigeye tuna in the IATTC convention area for vessels >24 meters.

WCPFC – 2013 US striped marlin catch limit for all sectors is the 80% of the highest catch from 2000-2003. US longline limit is 457 mt; however, not currently implemented.