Comisión Interamericana del Atún Tropical
Inter-American Tropical Tuna Commission

CIAT
IATTC

S EPO swordfish assessment: progress report

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SAC-12-07

5ª Reunión del Grupo de Trabajo *Ad hoc* sobre plantados - 06-07 de mayo de 2021 (por videoconferencia)
5th Meeting of the *Ad Hoc* Working Group on FADs - 06-07 May 2021 (by videoconference)

Outline

- 1st Technical Workshop on South EPO swordfish
- Other meetings
- Stock structure assumptions
- Data (availability and needs)
- Revised workplan

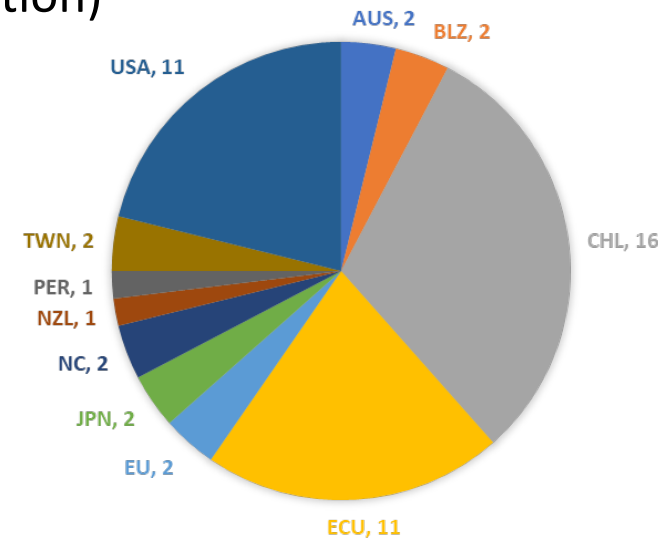
1th technical workshop on S EPO swordfish

- Organized in collaboration with CPCs
- December 15 to 17, 2021

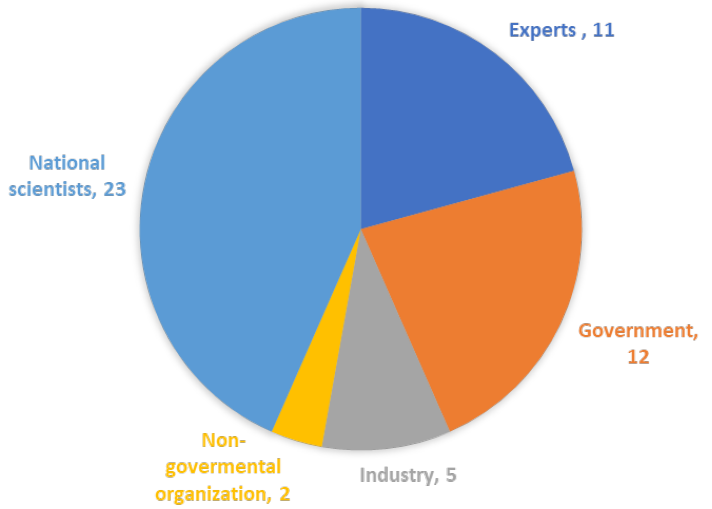
  (By videoconference with simultaneous interpretation)
- Participants:
- 52 external
- 22 IATTC staff

Objectives

- promote a regional investigation
- review the current knowledge
- construct a conceptual model
- identify and understand data sets
- plan the next steps



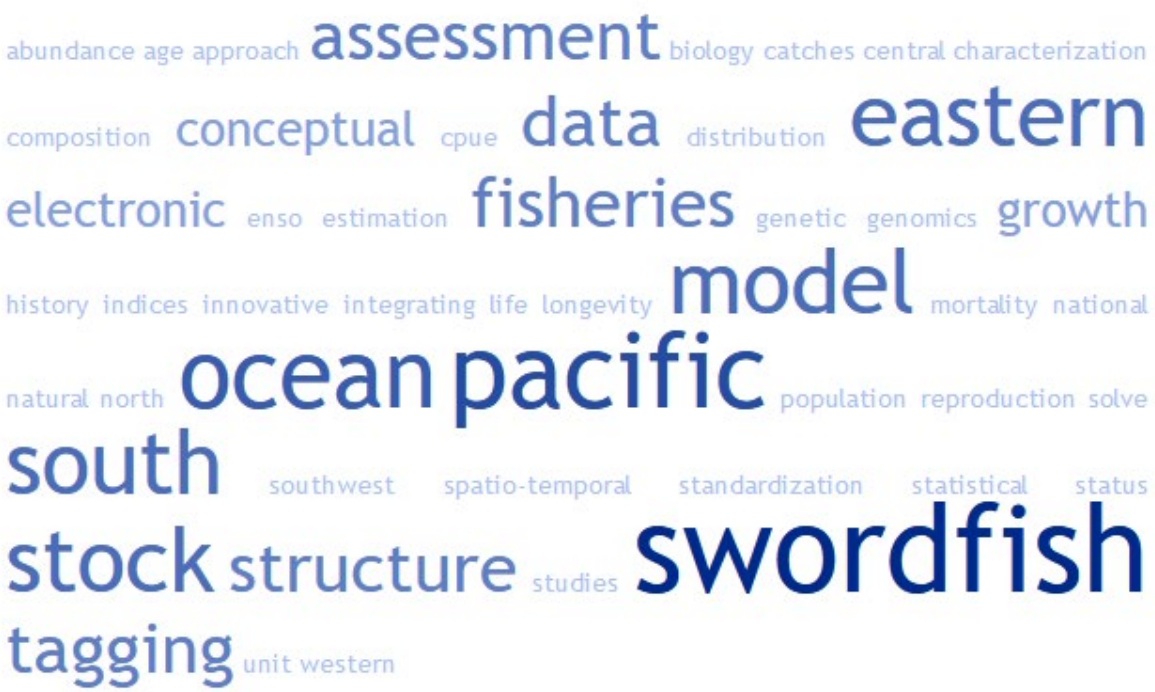
connecting location



type of affiliation

1th technical workshop on S EPO swordfish

- 17 recorded presentations from external participants



Report available here

Main results

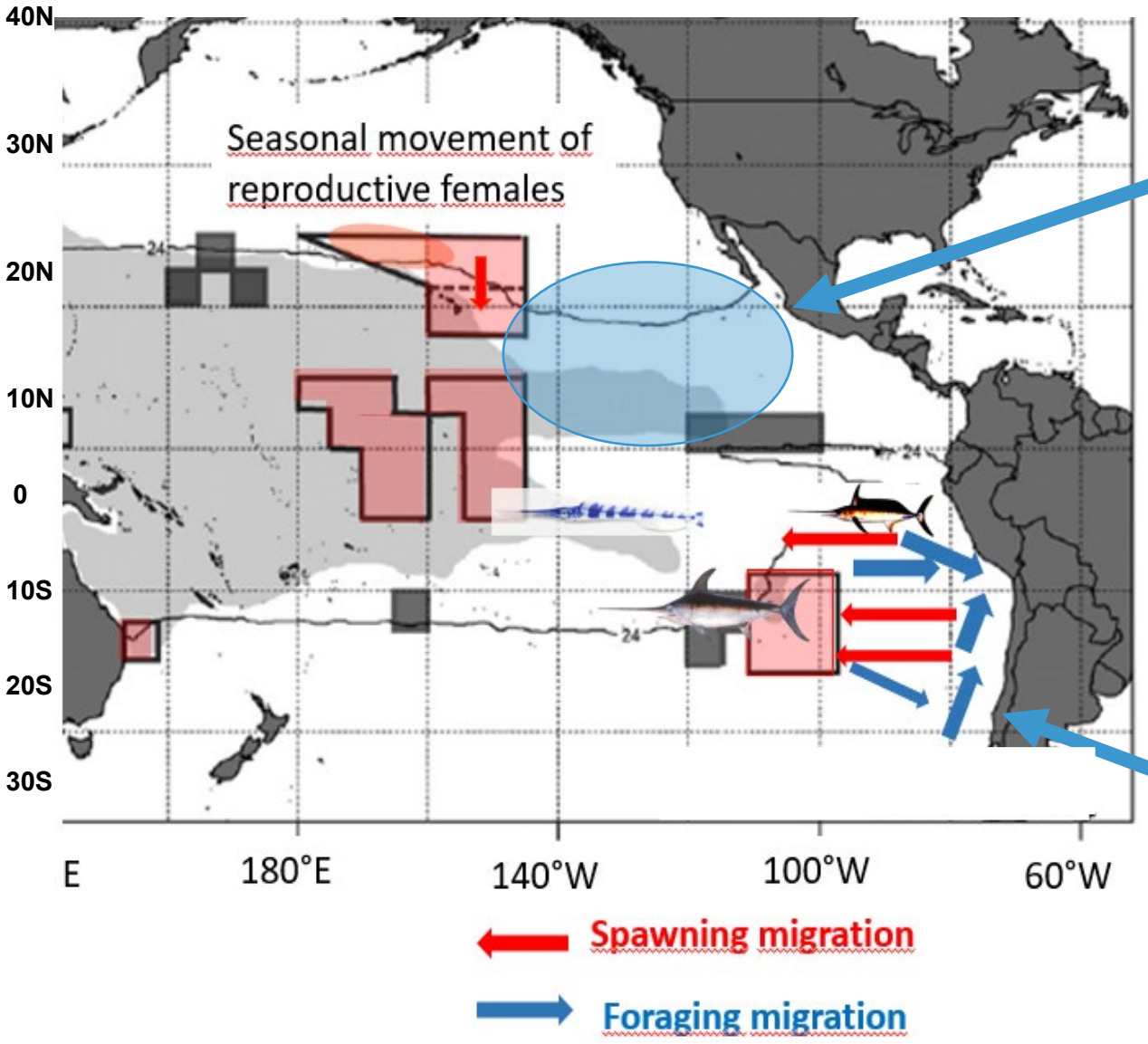
- List of recommendations and suggestions
  - ✓ For the 2021 assessment
  - ✓ For future research (stock structure uncertainty – tagging, genomics)
- Proposed collaborations
  - ✓ Between CPCs and staff
  - ✓ Among scientists
- Workplan

Other meetings

- **North PO swordfish:** participation on ISC Billfish Working group meeting regarding stock structure assumptions

- **Southwest Pacific swordfish assessment:** participation on Preparatory Workshop for 2021

Stock structure: Conceptual model for Swordfish in the EPO

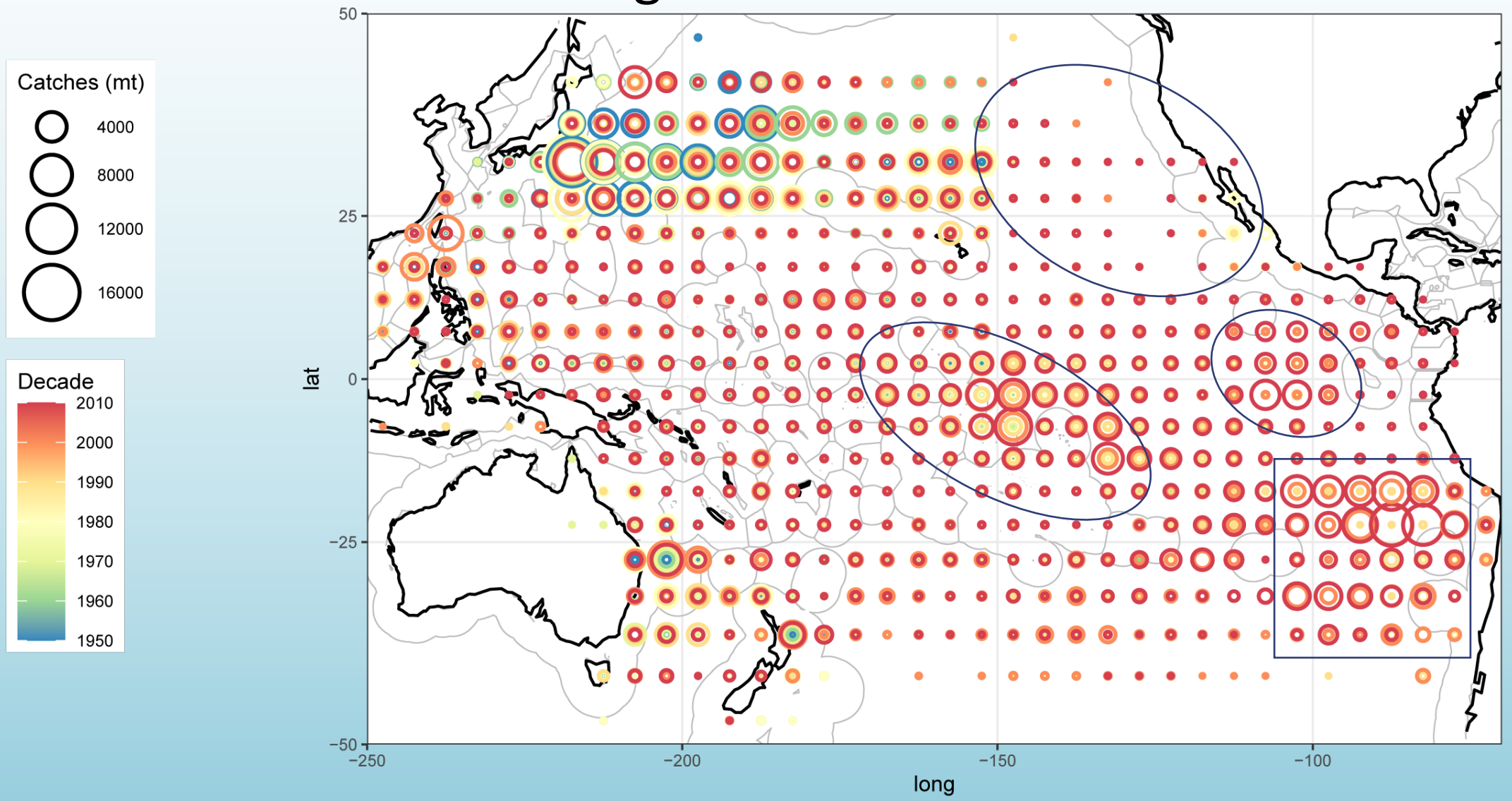


Similar seasonal movement from foraging to putative spawning areas in the N EPO (Sepulveda and Aalbers)

Seasonal movement from foraging to putative spawning areas (Barría et al)

Stock structure:

Longline catches – trends over time



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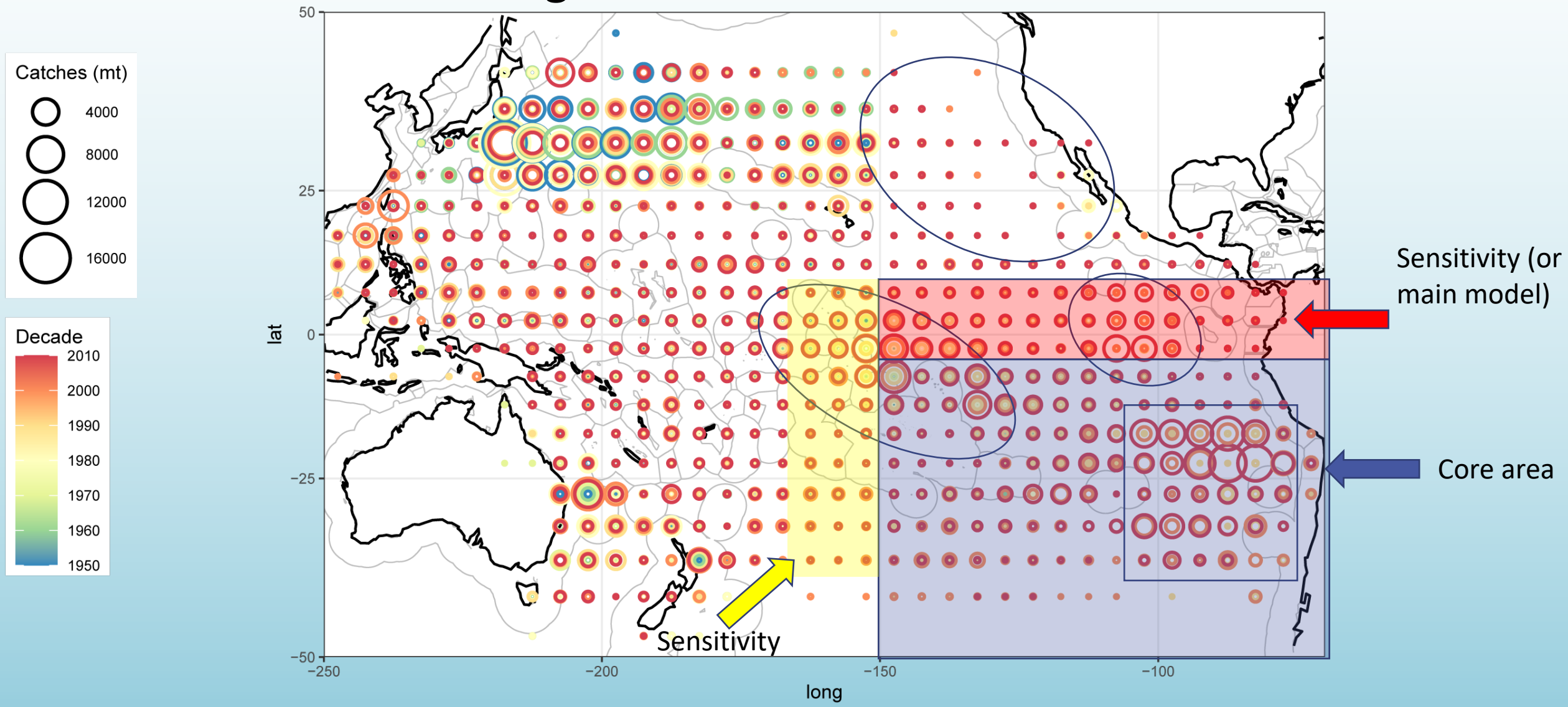
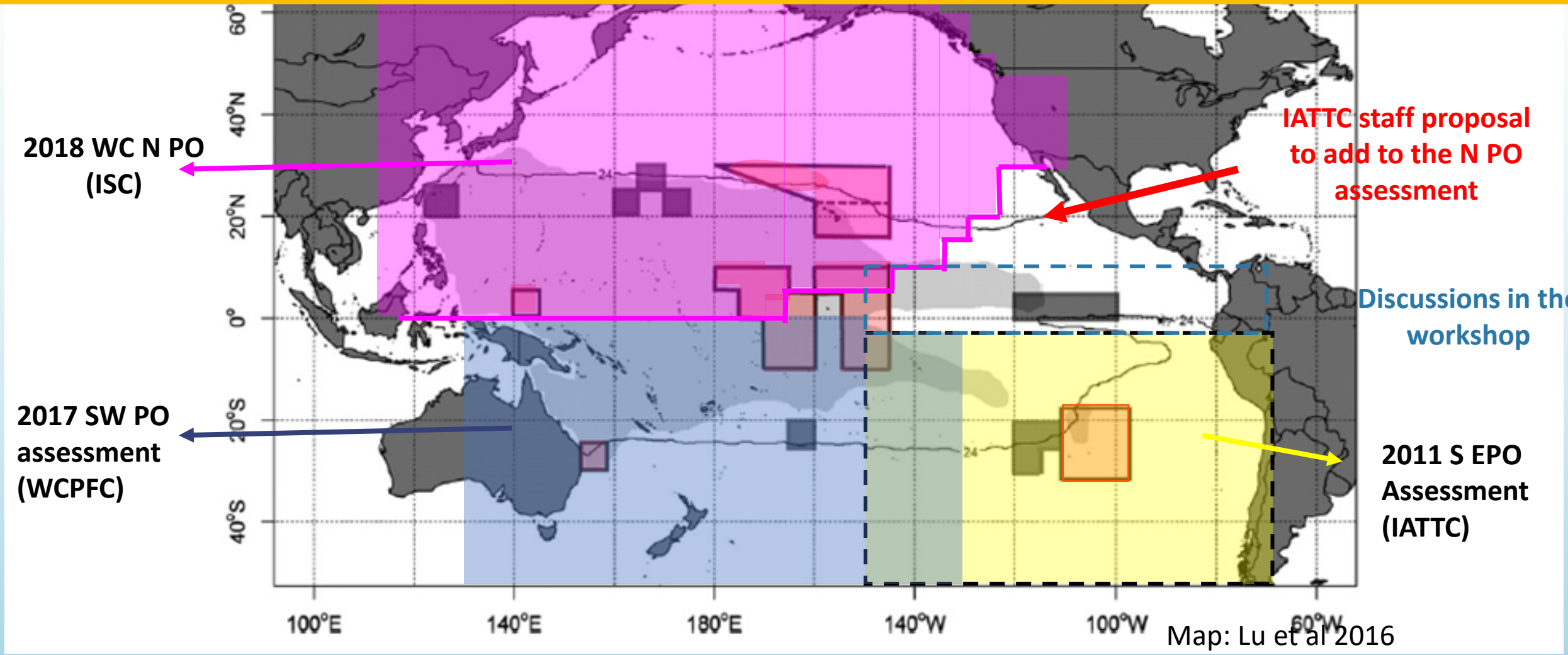
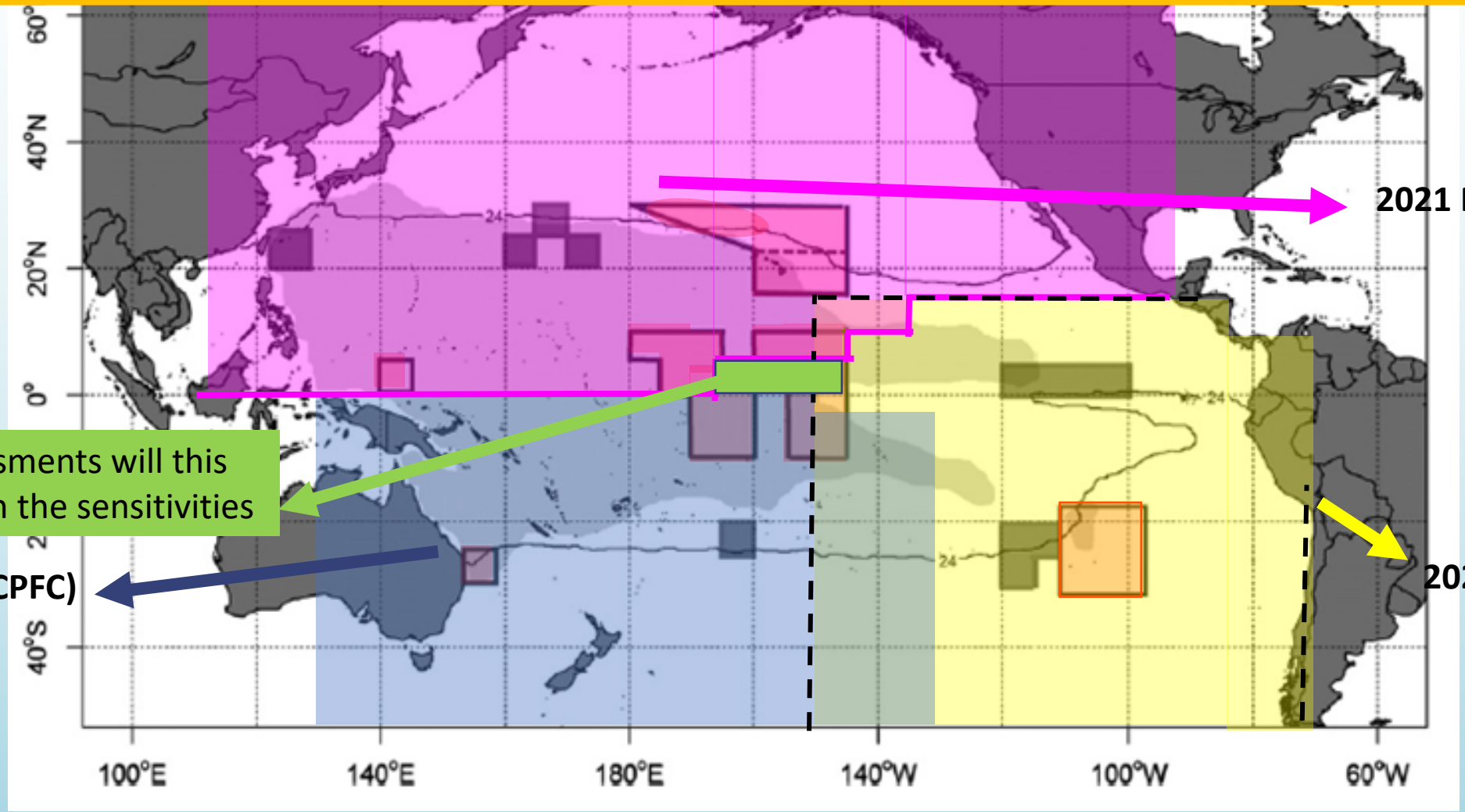


Stock structure: Past assessments



Map: Lu et al 2016

Stock structure: Planned assessments



2021 N PO (ISC)

All assessments will this area add in the sensitivities

2021 SW PO (WCPFC)

2021 S EPO (IATTC)

2021 S EPO swordfish assessment: progress

Modelling:

- New SS3 version with improved natural mortality model (USA)

Colaborative work and voluntary data submissions:

- Operational-level data for indices of abundance (KOR, ESP, CHL)
- Age-frequency data by sex (CHL)
- Biometrical realtionships (W-L, Round W – processed W) (CHL)
- Indices of abundance (JPN)
- VMS data (ESP)
- Catch data – planned submission (CHL, ECU)

Other data: submissions per Resolution C-03-05

- Catch in 5 by 5 by month for large longline vessels (most fleets)
- Length frequencies
- Catch by year for some coastal countries

Data needs:

- **Catch data for coastal countries by quarter and gear**
- **Operational level data to estimate indices of abundance**
- **Size frequency data with fine scale resolution**

2021 EPO swordfish catch data: actions needed

5 by 5 by month data available

Please complete missing data

Only aggregated data

Please indicate gear
Please complete missing data
Please submit 5 by 5 data

All: Please submit length frequency by **sex** data

Flag / Bandera	Gear / Arte	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
BLZ	LL	274	556	914	1279	393	221	110	100		52
CHL	LL										
CHL	NK	4363	4949	6239	4852	5799	5737	6656	5889	4739	8806
CHN	LL	748	926	1226	1537	1546	1964	1456	1970	2674	1476
COL	NK										
CRI	LL	673	929	2205	830	1119	1366	1330	1250	1356	1041
ECU	LL+LLX+NK	595	1072	1656	1401		1083	1462			
ESP	LL	9115	9675	8959	8467	8035	9990	10602	8903	11405	10539
GTM	LL+LLX+NK	1	3			20	16	20		6	5
HND	LL										
JPN	LL	3100	3702	3866	3637	3797	4022	3689	2930	2083	1249
KOR	LL	1129	1089	1029	1692	1237	1466	1376	1290	837	701
MEX	GN	13	2	3							
MEX	LL	467	343	374	384	630	320	114	61		
NIC	LL+NK	7	4	17	10	23	19	29	8	28	
PAN	LL			711	483	767	986	845	512	252	1315
PER	NK	5	7	766	590	343	190	219	152	193	194
PRT	LL+LLD	300	82	156	0	2	509	0	532	815	777
PYF	LL	58	65	82	85	88	86	78	105	171	134
SLV	LL+NK	1								4	0
TWN	LL	1077	1065	1778	1677	2146	2366	2080	2530	2387	1703
USA	GN	62	119	118	95	127	101	183	179	148	52
USA	HAR	37	24	5	6	6	5	25	28	10	12
USA	LL+LLD	644	764	495	687	786	825	453	651	422	178
USA	LP					0	0	1	1	1	2
USA	NK+OTR			1	7	4	12	42	44	67	185
VUT	LL	207	118	127	184	786	600	278	493	453	900

Deadline no later than 30 June

Missing data

Workplan

ORIGINAL

JAN 2021:

- work with Chilean, Spanish, Ecuadorian and SPC colleagues in data preparation
- perform analysis on stock s
- consolidate catch esti
- consolidate len

Delayed: data submissions

FEB 2021: C geting for the Japanese

- Estimate indic dance
- Zoom meeting a t stock structure / indices
- Estimate growth cessation curve
- Compute M at age and sex
- Include data and new assumptions on newest SS3 model

MAR 2021: Fit base case model

- Explore sensitivities
- Zoom meeting about model results

APR 2021: Prepare report

MAY 2021: **Presentation of assessment at SAC12**

REVISED

JAN – MAY 2021:

- Exploratory analyses with IATTC data
- Communication with CPCs
- 2011 model in SS3 version
- Changes in SS3 platform to include natural mortality option
- JPN produced Indices of abundance using their operational level data
- Participation on participatory meetings for other SWO assessments

JUN-DEC 2021 (Pending on data submission):

- Data preparation
- Estimation of indices of abundance from their operational level data from main fleets (ESP, CHL, KOR, others?)
- Zoom meeting about data and inputs (Summer)
- Modelling (Explore several hypothesis)
- Zoom meeting about model results (Fall)
- Publish report in the IATTC website

MAY 2022: Presentation at SAC-13

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Thank you!