

South Pacific Albacore

Stock structure

Assume separate north and south Pacific stocks. Also assume separate east and west south Pacific stocks.

Spawning

Spawning occurs in tropical regions between ~10-25°S, with SSTs > 24°C

YOY

???

Juveniles/Sub-Adults

Recruit to temperate waters, 25-45°S

Adults

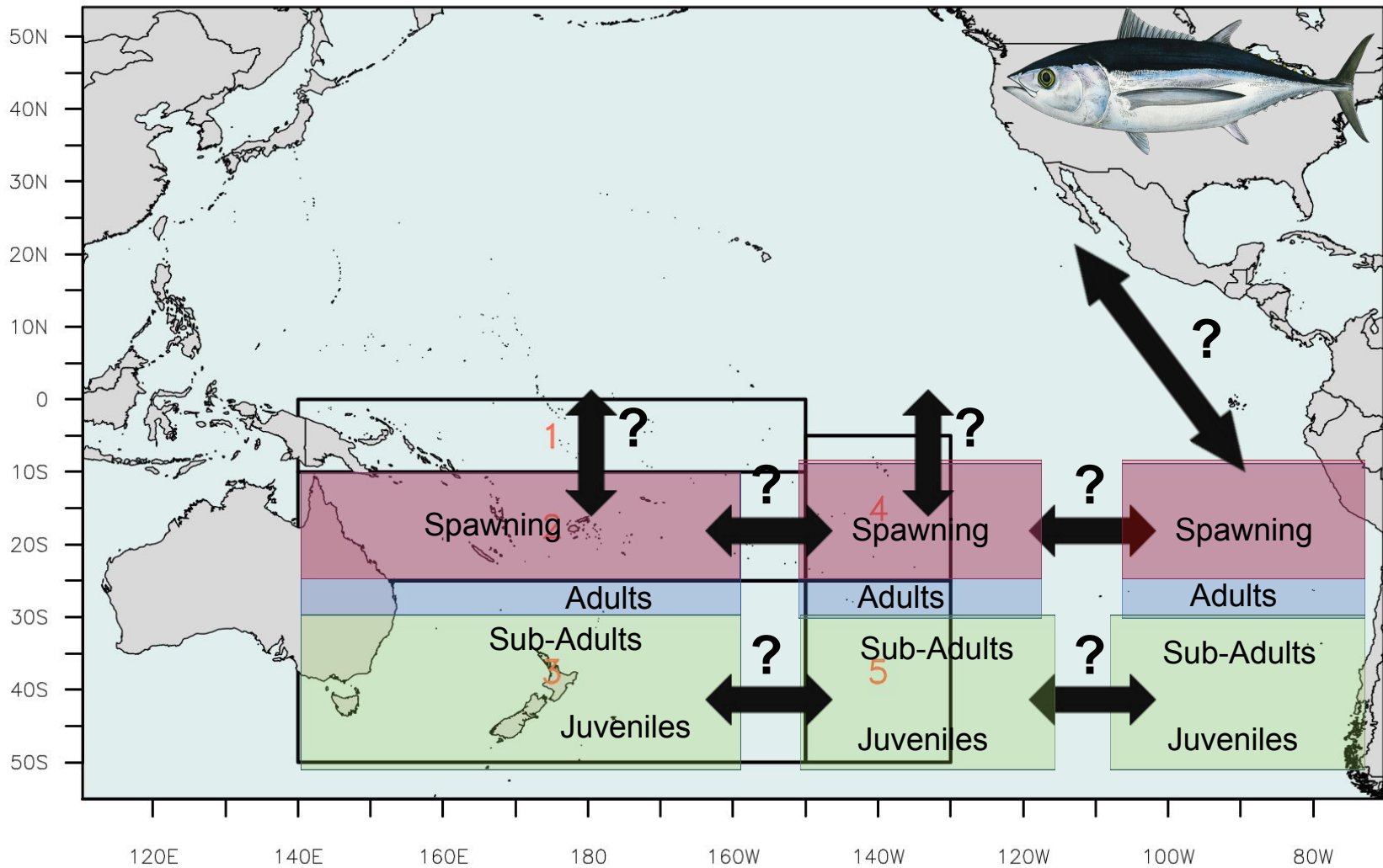
Distributed between approximately 5 and 30°S

Movements/population structure

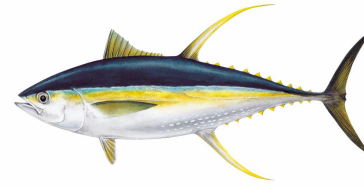
Seasonal north-south migrations of adults for spawning

Evidence from genetic, otolith chemistry and life history for separate east/west stocks

Parasites indicate some east-west movement of juveniles in the subtropical convergence zone



Yellowfin



Stock structure

WCPO and EPO stocks assumed in assessments

Spawning

Spawn in surface water temperatures generally above 24°C = Year-round spawning in tropical waters, seasonal spawning (summer) in higher latitudes

Some specific spawning areas identified - Banda Sea in Indonesia, the eastern and southern Philippines, northeast Solomon Islands, the northern Coral Sea and Fiji

YOY

Throughout equatorial waters, extending to higher latitudes

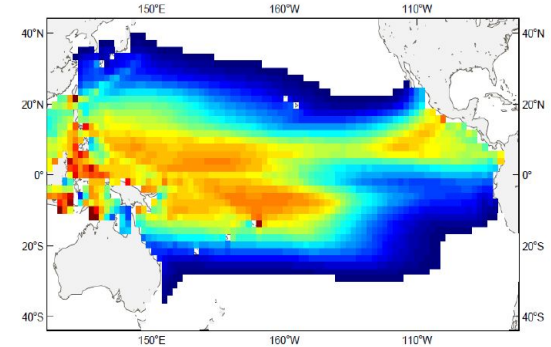
Sub-adults and adults

Distributed from 30°N to 30°S, extending to 40° in both hemispheres

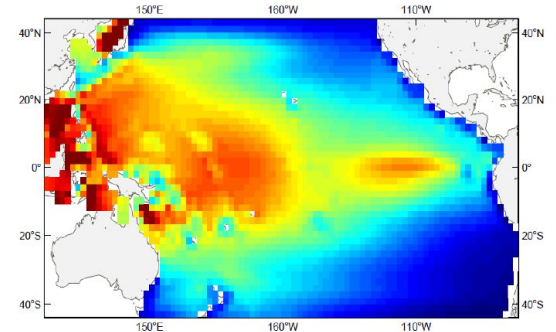
Movement/Connectivity

Tagging suggests median lifetime displacement of 330-380 nm
Three SNP stocks identified in Pacific

Mean distribution of juvnl yft (nb/sq.km)
in 1/1980-12/2003



Mean distribution of adult yft (mt/sq.km)
in 1/1980-12/2003



Bigeye



Stock structure

WCPO and EPO stocks assumed in assessments

Spawning

Spawn in surface water temperatures generally above 24°C = Year-round spawning in tropical waters, seasonal spawning (summer) in higher latitudes

Some specific spawning areas identified - e.g. off Philippines, Coral Sea

YOY

Throughout equatorial waters, extending to higher latitudes

Sub-adults and adults

Distributed from approximately 45°N to 40°S in the western Pacific, and from approximately 40°N to 30°S in the eastern Pacific but bulk of biomass between 10° from the equator

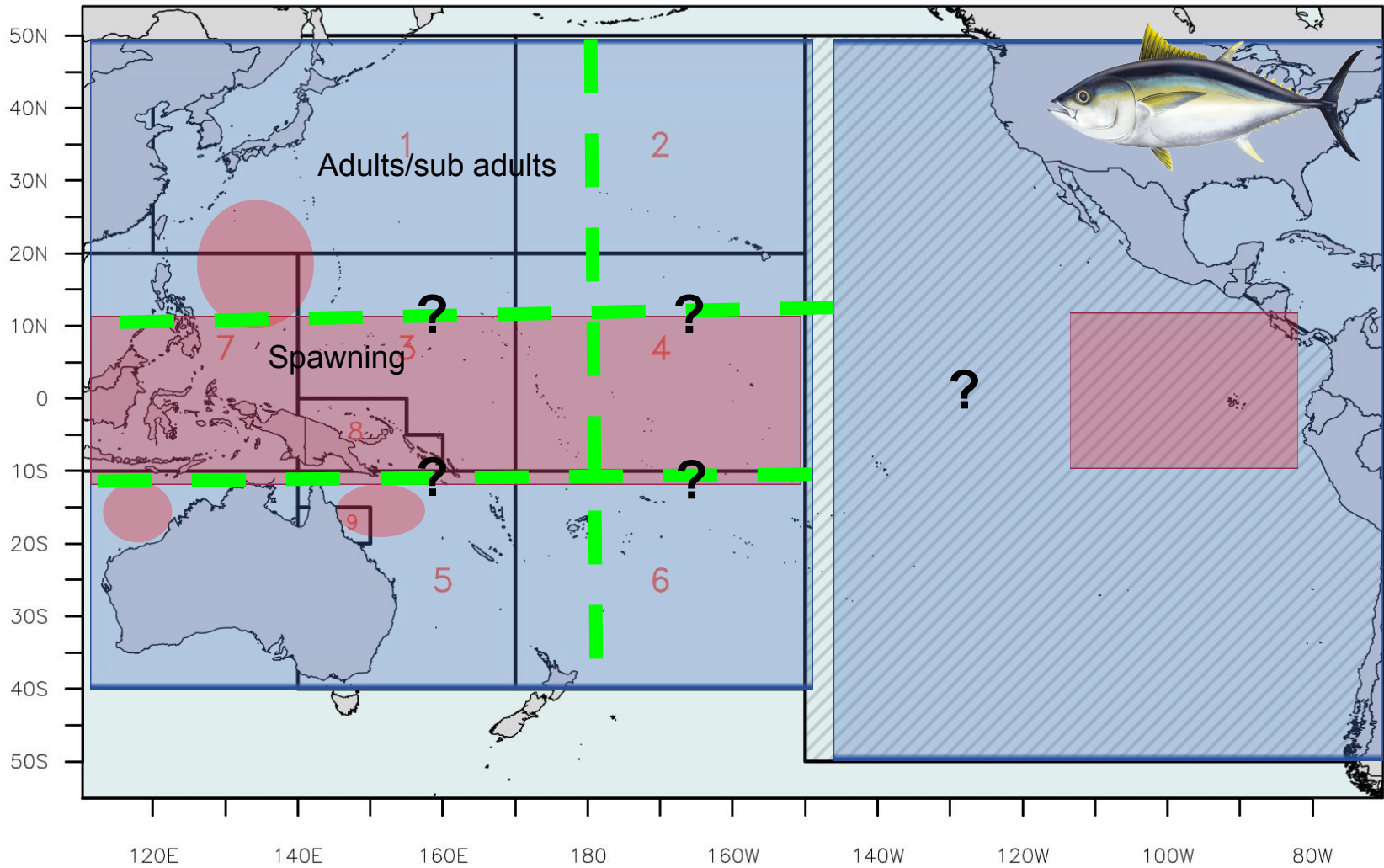
Movement/Connectivity

Little evidence of structuring from microsats or mtDNA

No (published) genetic studies using modern markers (SNPs)

Limited movement from EPO to CPO from tagging data

Constrained latitudinal movement of fish within 10°N and 10°S



Skipjack

Stock structure

WCPO and EPO stocks assumed in assessments

Spawning

Spawn in surface water temperatures generally above 24°C = Year-round spawning in tropical waters, some seasonal spawning (summer) in higher latitudes

Larval densities higher in WCPO than EPO, suggesting main spawning areas in WCPO

YOY

Throughout equatorial waters, extending to higher latitudes

Sub-adults and adults

West of ~145°W, distributed from 35°N to 35°S, extending to 40° in both hemispheres

East of ~145°W, distributed from 15°N to 15°S, extending to 20° in both hemispheres

Movement/Connectivity

Tagging suggests median lifetime displacement of 420-470 nm

Some evidence for spatial structuring of populations from older genetic techniques.

