

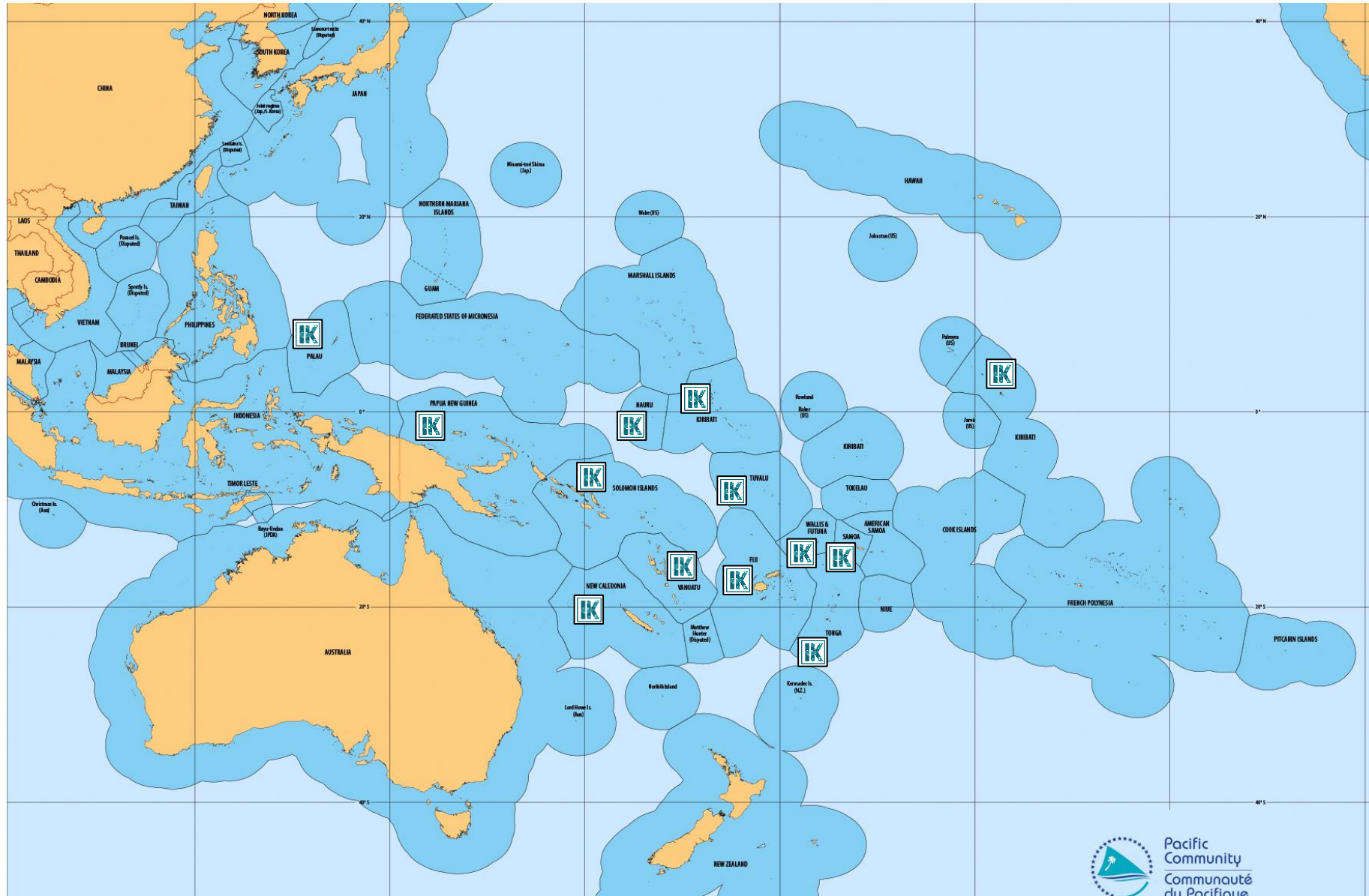


Pacific
Community
Communauté
du Pacifique

Is technology enabling better data for coastal fisheries?

SPC Coastal Fisheries Science & Data
Teams

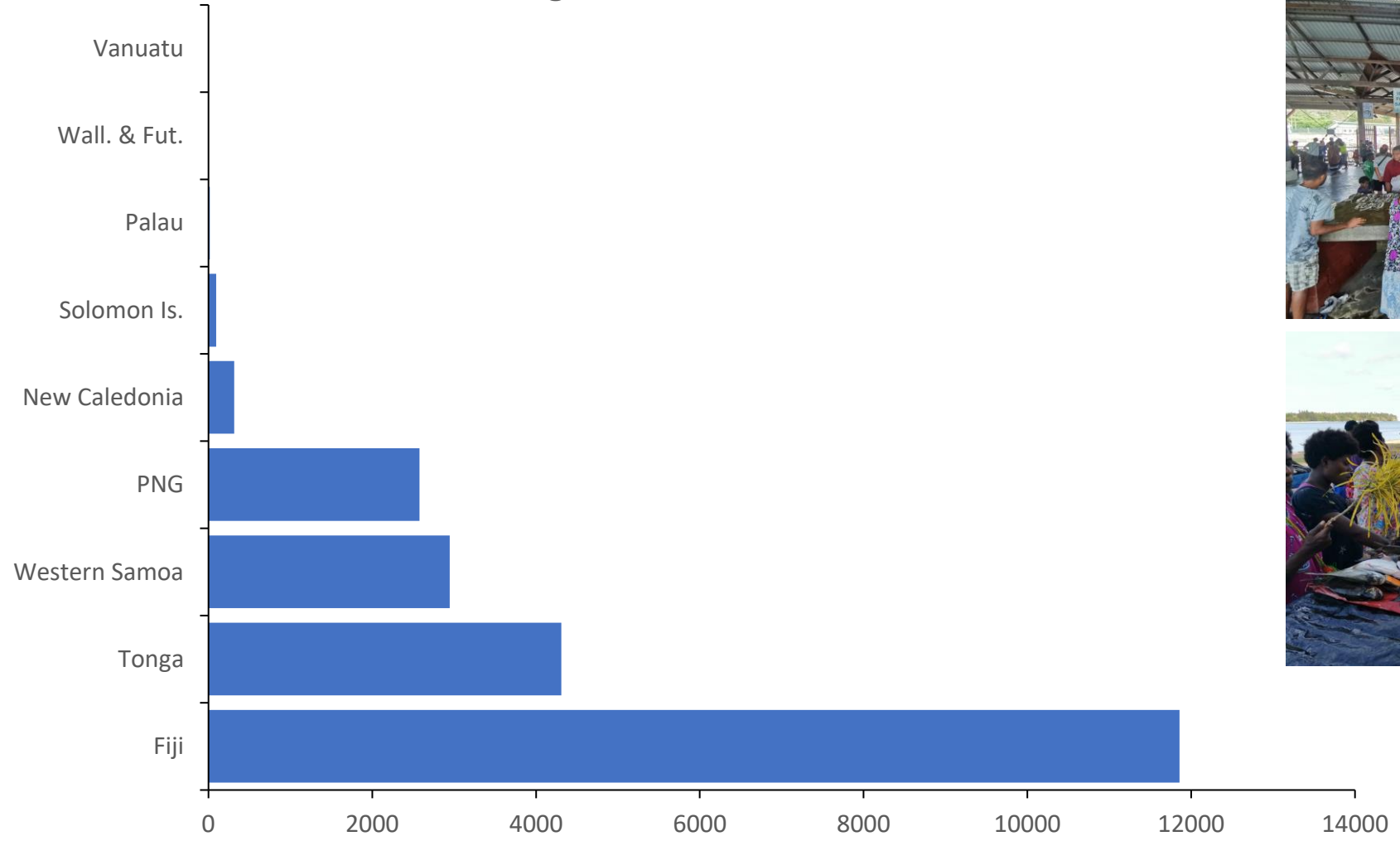
- E-data system in operation for multiple years
 - What is the uptake looking like?
 - Are countries embracing a switch to electronic management of data for coastal fisheries?
 - Is the data being collected reflective of an improved system?
- Moving from collection to analysis and interpretation - OUTCOMES
 - What does this look like?
 - Are there tools available?
 - Suggested pathways



Summary of Market Collections



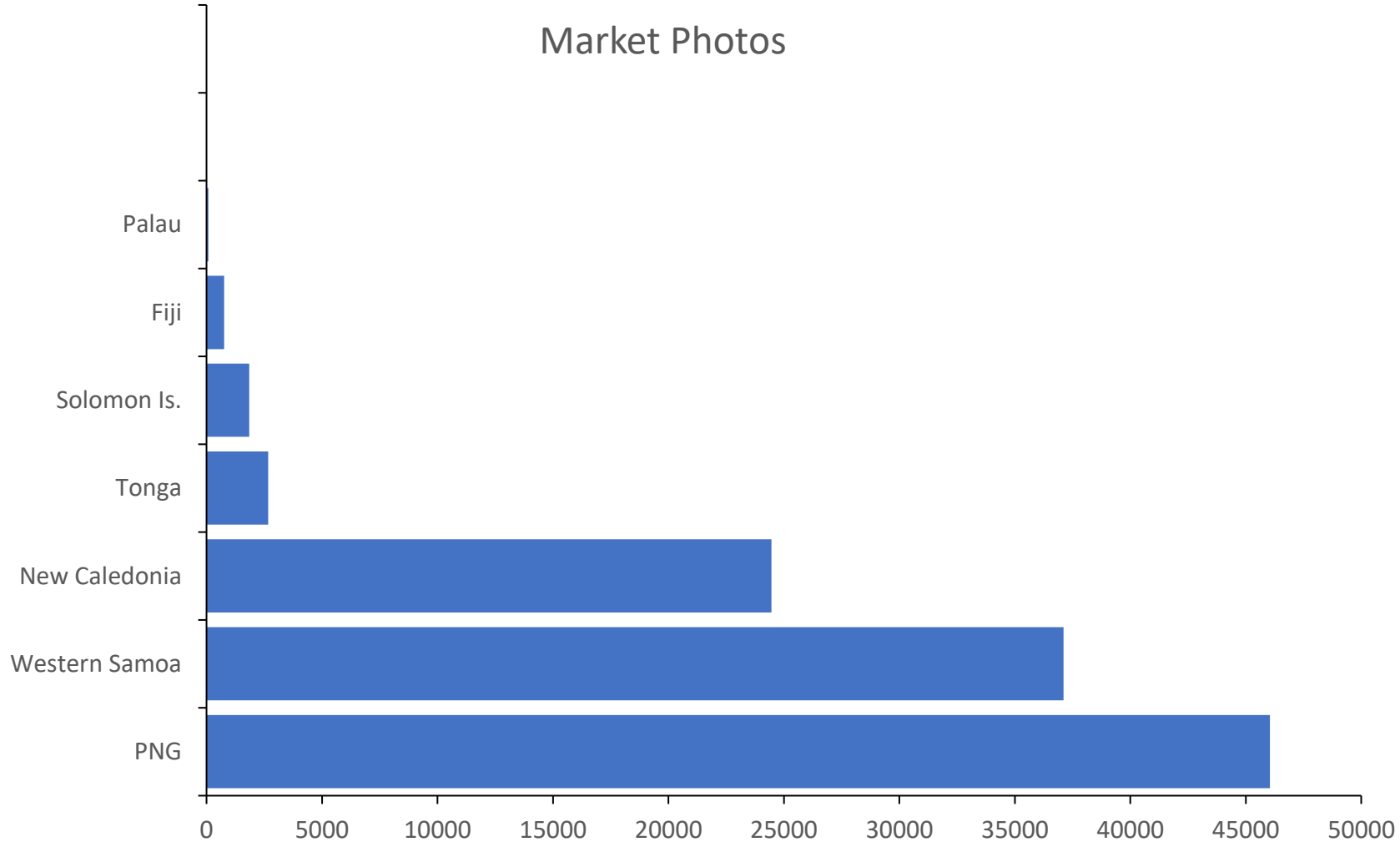
Registered Market Stalls



Summary of Market Collections



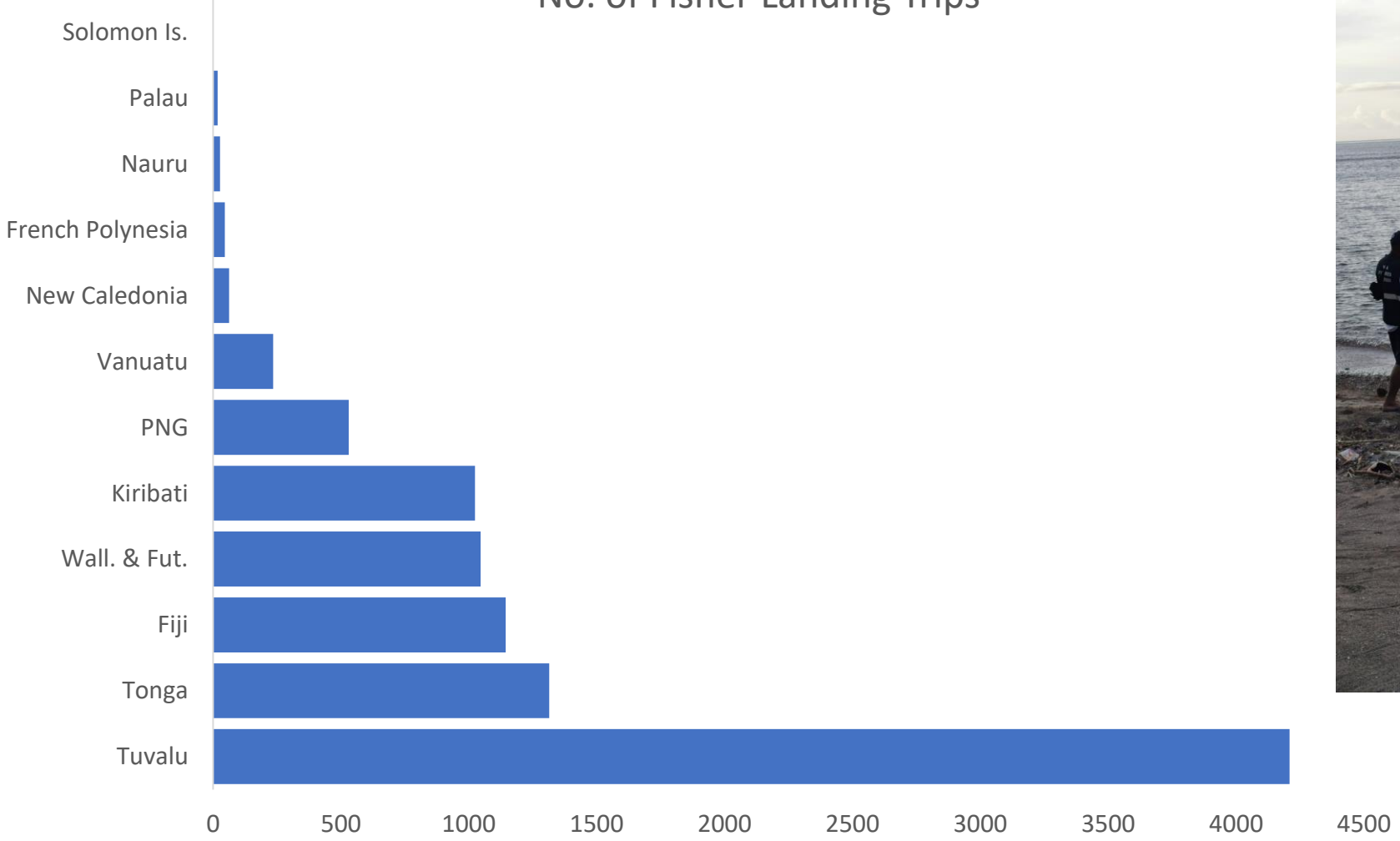
Market Photos



Summary of Landing Collections



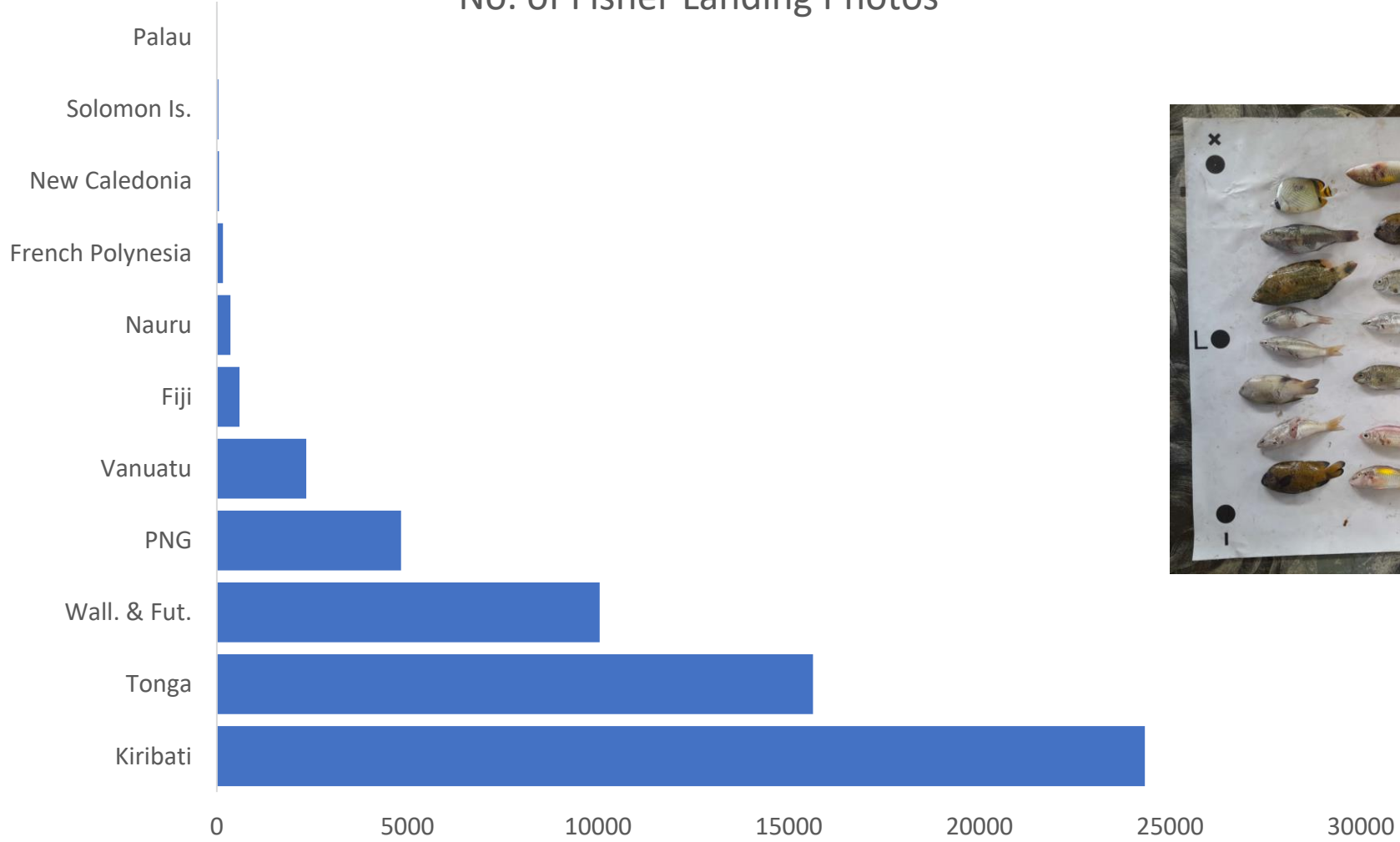
No. of Fisher Landing Trips



Summary of Landing Collections



No. of Fisher Landing Photos



From collections to analysis



LearnFishID
Learning species



Field surveys
Data entry & analysis



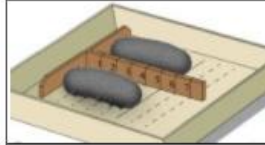
Market surveys
Data entry & analysis



Landing surveys
Data entry & analysis



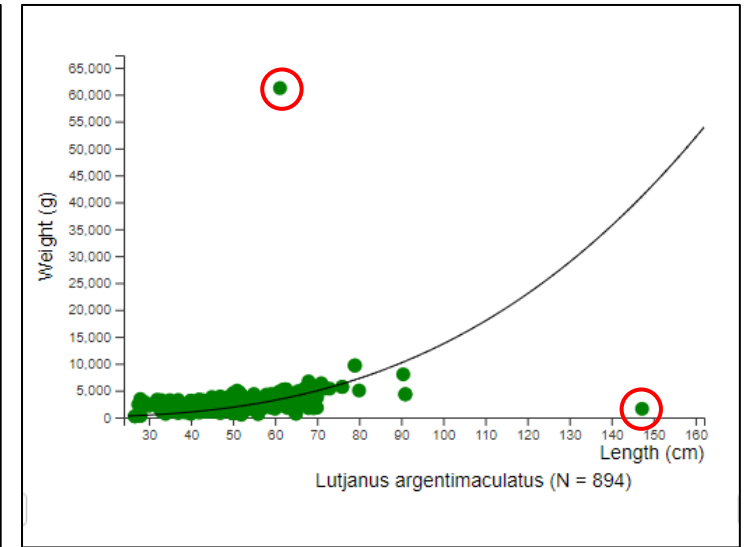
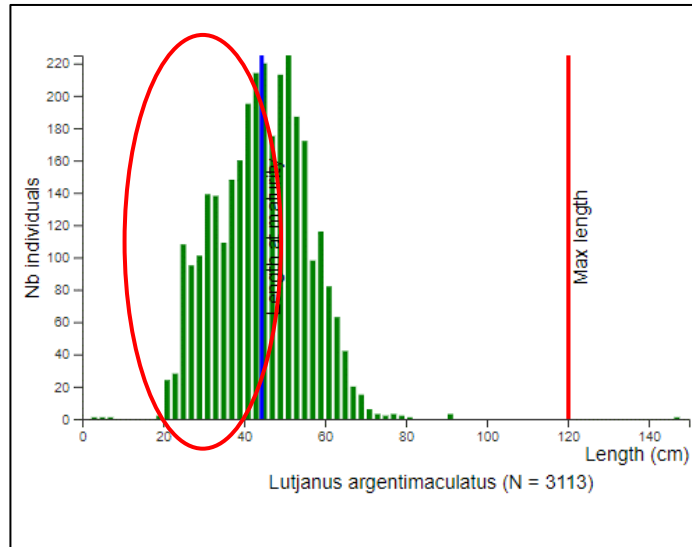
Socio Economic surveys
Data entry & analysis



Species information
Biological & other parameters



Species	Nb samples	Avg size (cm)	Min size (cm)	Max size (cm)	Min legal size (cm)	Percentage below legal	Number below legal
Naso unicornis	10137		4.1	82.4	30.0	14.1 %	1429
Naso hexacanthus	3627		3.9	82.0	30.0	3.3 %	120
Naso brevirostris	853		19.0	64.0	30.0	35.9 %	306
Naso tonganus	801		20.0	70.0	30.0	6.5 %	52
Naso lituratus	704		16.1	56.0	30.0	77.8 %	548
Naso caesius	335		5.4	54.3	30.0	6.3 %	21
Naso lopezi	233		27.0	61.0	30.0	6.0 %	14
Naso vlamingii	169		18.0	46.2	30.0	64.5 %	109
Naso annulatus	89		21.6	45.0	30.0	66.3 %	59
Naso brachycentron	43		24.0	55.2	30.0	2.3 %	1



From collections to analysis



FishKit | The Nature Conservancy

FishKit ▾ Resources About Contact English ▾ 🔍

What is FishKit?

We developed FishKit, a set of software tools, to tackle the dual challenges limiting sustainability in small-scale fisheries: data gaps and limited know-how among local leaders to use data to design and implement management plans. FishKit makes it easier, faster, and more intuitive for coastal communities to collect and analyze data and transform it into specific management interventions that are proven to work for the majority of small-scale fisheries. Applying FishKit can improve fisheries management in small-scale fisheries, protecting ocean ecosystems while providing food and livelihoods to coastal communities.

Real science, real action, real fast.

[GO TO THE FISHKIT APP](#)

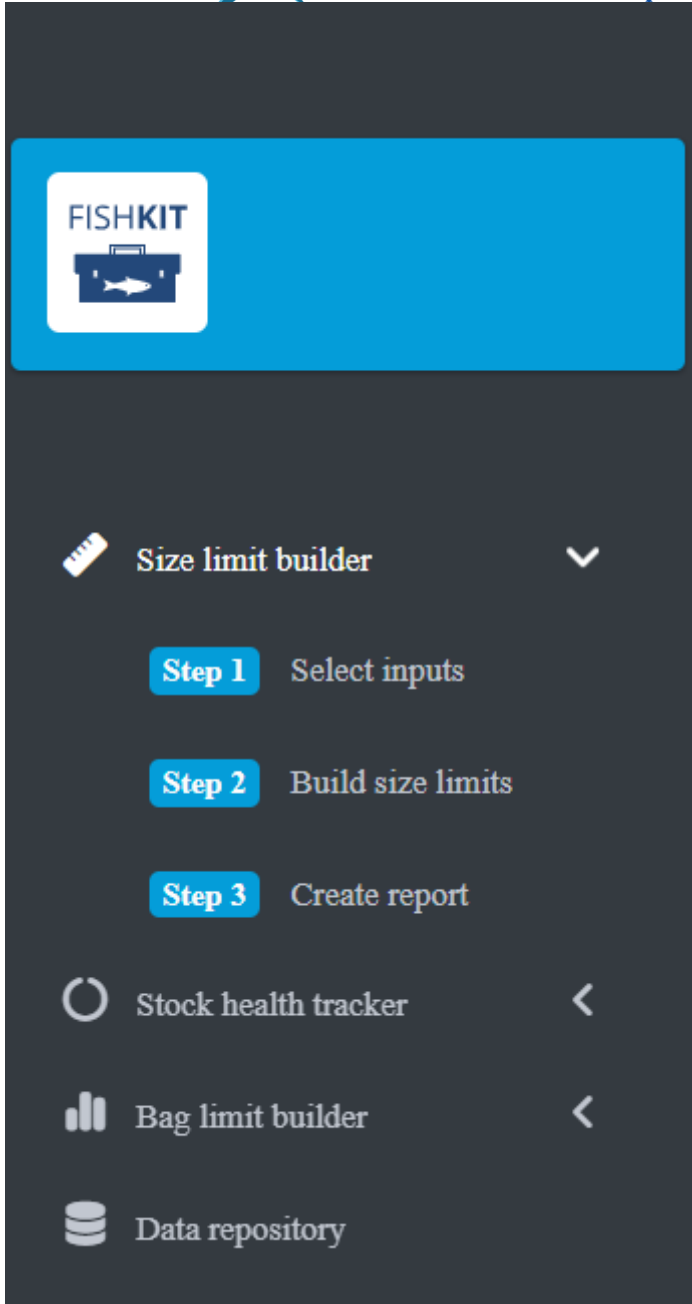
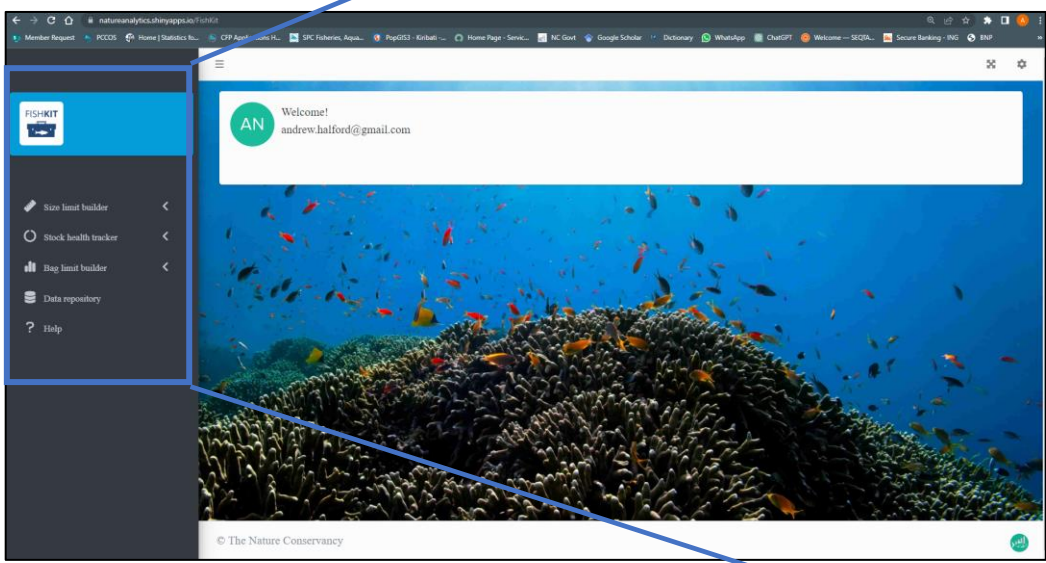
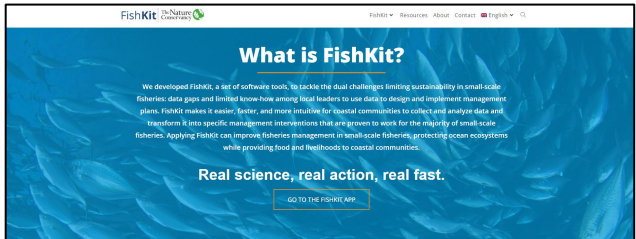
THE BAREFOOT ECOLOGIST'S TOOLBOX NEWS APPLICATIONS ABOUT LINKS & REFERENCES ☰

The Barefoot Ecologist's Toolbox

Tools for fisheries scientists and field practitioners

[☰ Go To Applications](#)

Photo credit: Unsplash



From collections to analysis



Lutjanus gibbus



Naso unicornis

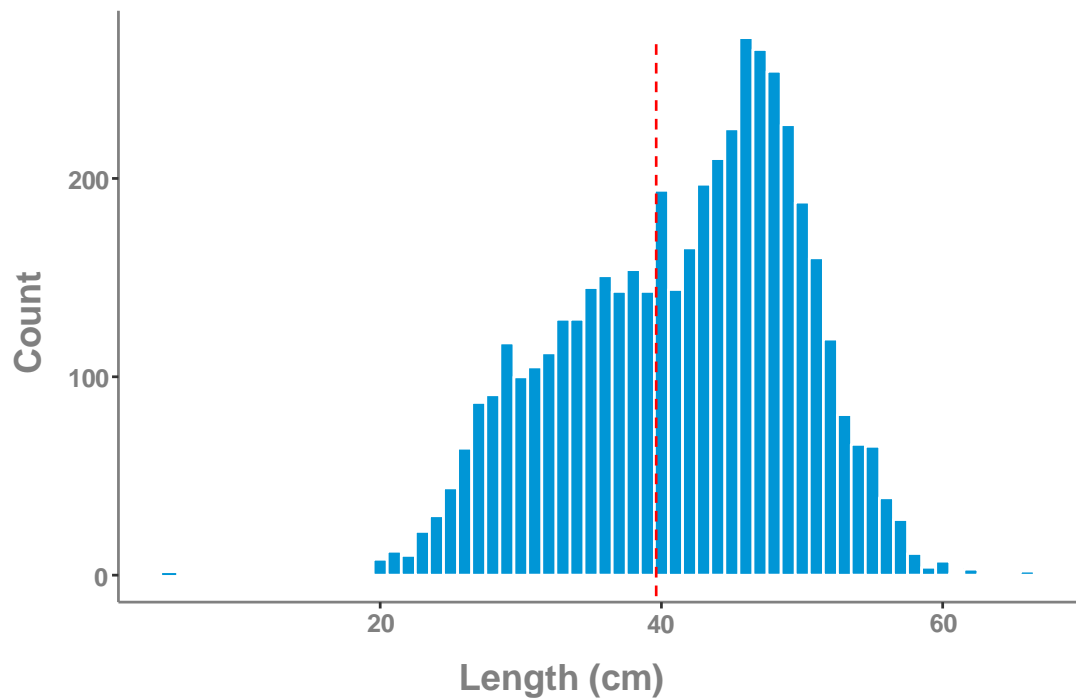
	A	B	C	D
1	2020	2021	2022	2023
2	9.0	15.5	0.1	2.1
3	16.8	16.0	0.1	3.1
4	17.0	17.0	0.2	3.1
5	17.5	17.0	0.2	3.1
6	17.5	17.5	0.2	3.8
7	17.7	17.5	0.2	12.8
8	17.7	17.6	0.5	14.1
9	17.8	17.7	0.5	14.8
10	18.0	18.0	0.5	16.0
11	18.0	18.0	0.5	17.6
12	18.0	18.0	0.5	18.0
13	18.0	18.4	0.5	18.4
14	18.0	18.5	0.5	18.5
15	18.0	18.5	0.5	18.5
16	18.0	18.6	0.5	18.5
17	18.0	19.0	0.5	18.8
18	18.0	19.2	0.5	19.0
19	18.0	19.3	0.5	19.0
20	18.0	19.3	0.5	19.0
21	18.4	19.6	0.5	19.0
22	18.5	19.8	0.5	19.0
23	18.6	19.8	0.5	19.0
24	18.6	19.8	0.5	19.0
25	18.8	19.8	0.5	19.0
26	18.8	19.9	0.5	19.0



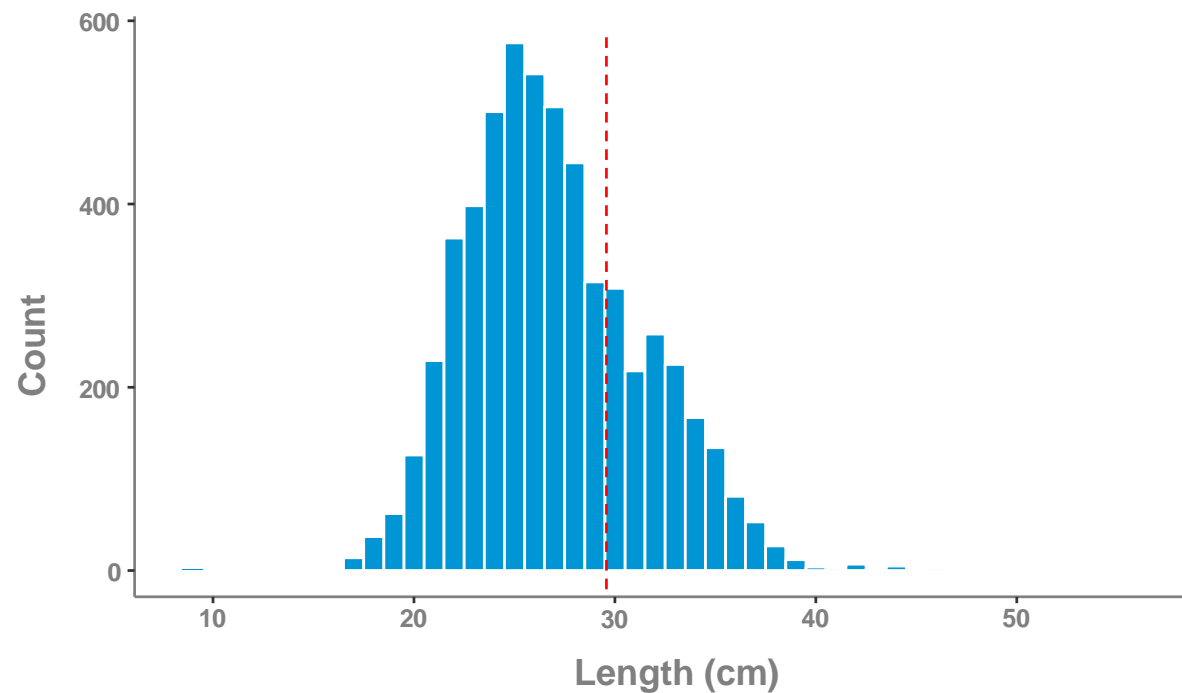
Parameter	Value
Length type	FL
Length units	cm
Length at 50% maturity (L50)	40.8
Length increment to 95% maturity	8.2
Average maximum length (Loo)	51
Growth coefficient (K per year)	0.3
Natural mortality (M per year)	0.136
M/K	0.454
Length-weight beta	2.9
CV Loo	0.1 (LBSPR default)

Parameter	Value
Length type	FL
Length units	cm
Length at 50% maturity (L50)	29.8
Length increment to 95% maturity	8.2
Average maximum length (Loo)	39.7
Growth coefficient (K per year)	0.4
Natural mortality (M per year)	0.2
M/K	0.5
Length-weight beta	2.91
CV Loo	0.1 (LBSPR default)

*** Life History Information must be available to do these assessments effectively – this requires biological collections within each country/territory



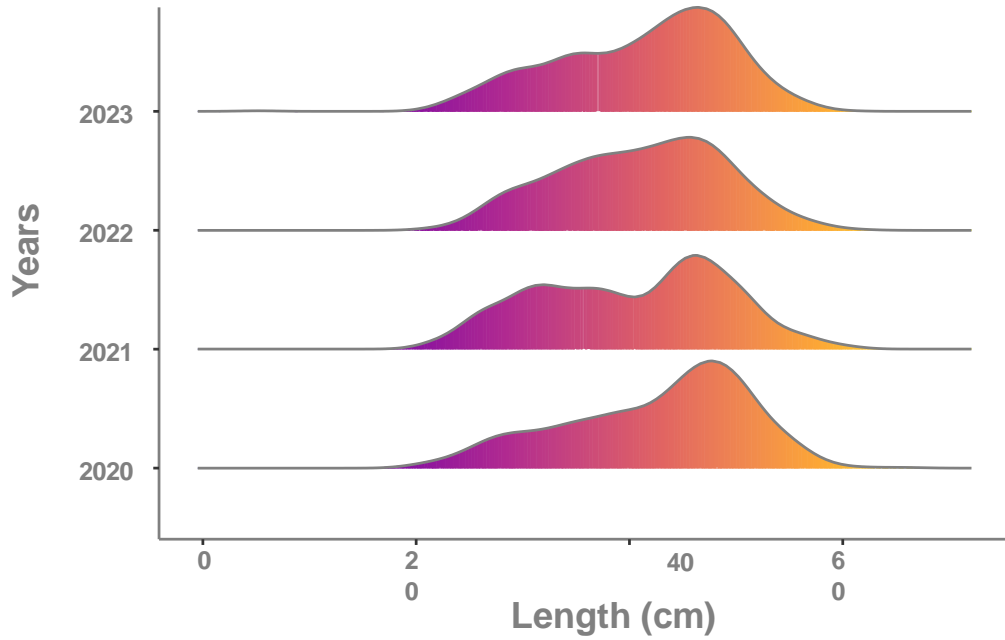
Parameter	Value
Minimum length	5.2 cm
Mean length	41.6 cm
Maximum length	66.4 cm
Length measurements	4725
Years aggregated	4



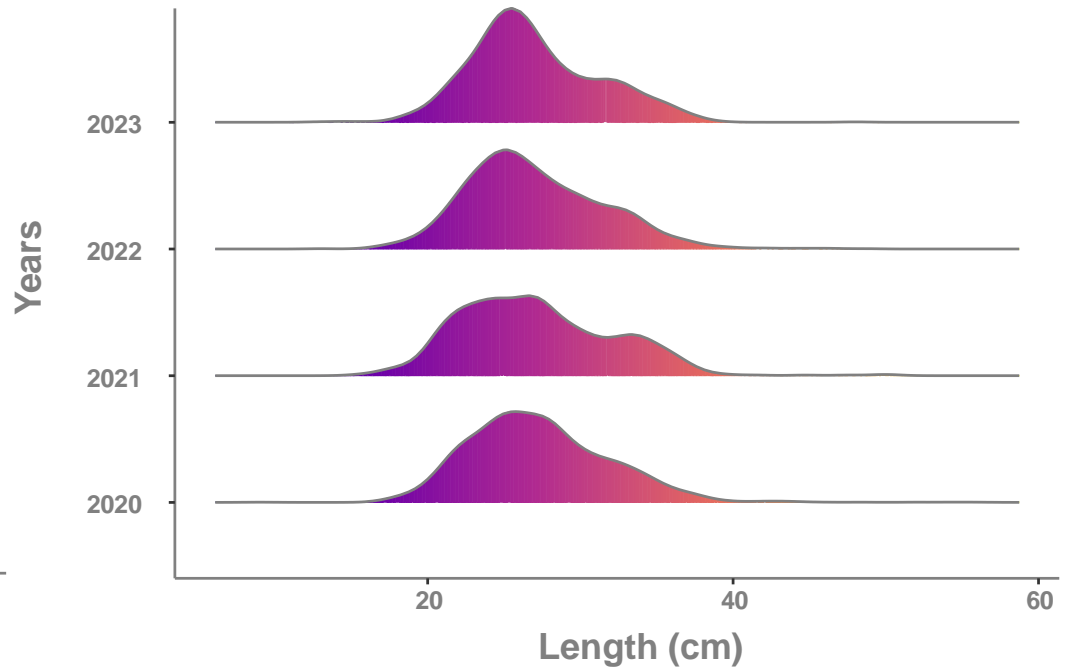
Parameter	Value
Minimum length	9 cm
Mean length	27.1 cm
Maximum length	55.8 cm
Length measurements	5641
Years aggregated	4



Distribution of lengths by Year

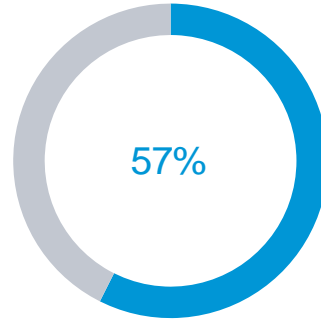


Distribution of lengths by Year



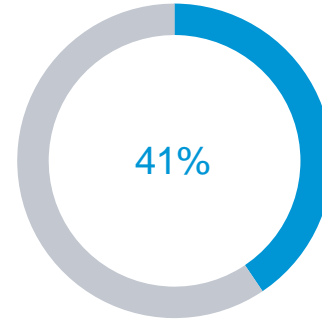


Aggregate length measurements
Mature fish in the catch



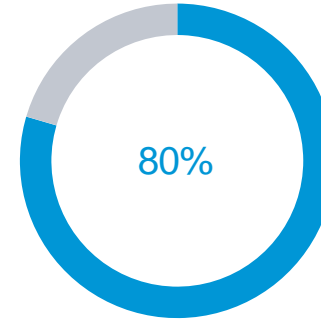
100% Target

Optimal sizes in the catch



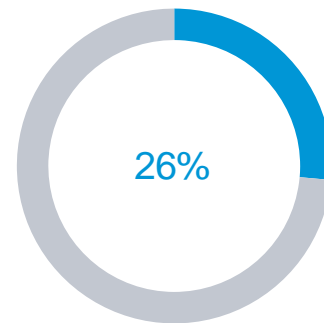
100% Target

Mega-spawner avoidance



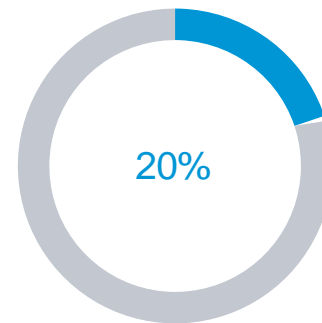
60% to 70% Target range

Aggregate length measurements
Mature fish in the catch



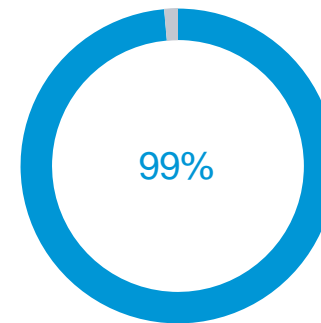
100% Target

Optimal sizes in the catch



100% Target

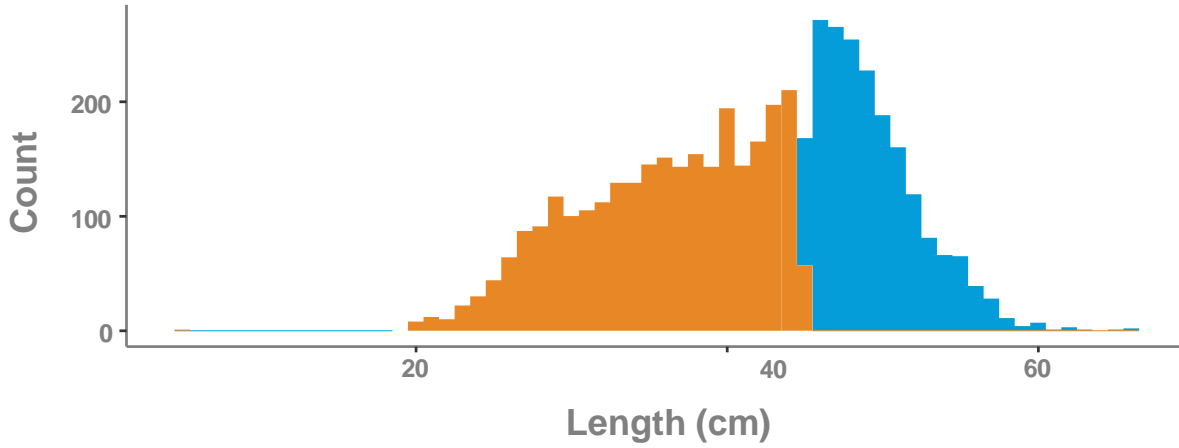
Mega-spawner avoidance



60% to 70% Target range



■ Within size limit
■ Outside of size limit



Fish above the size limit

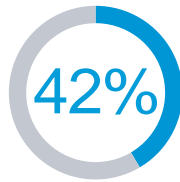
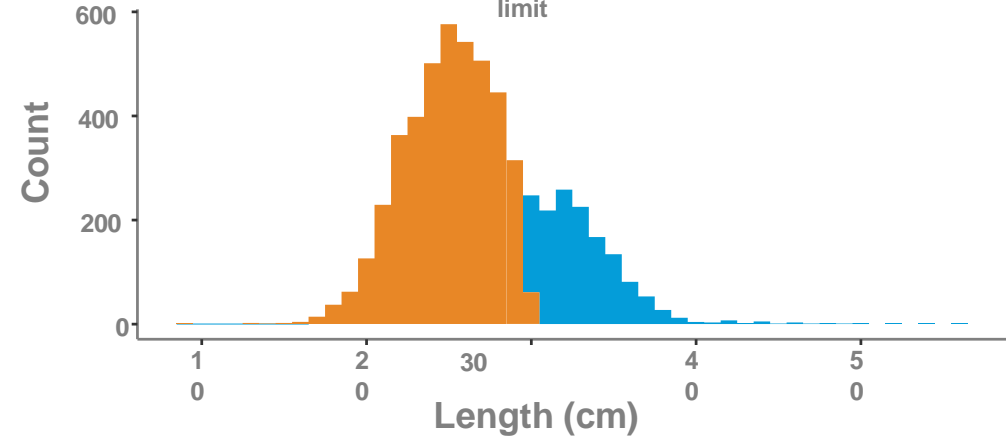


Table 4: Compliance

Parameter	Value
Length measurements	4725
Groups aggregated	4
Minimum size limit	45 cm



■ Within size limit
■ Outside of size limit



Fish above the size limit

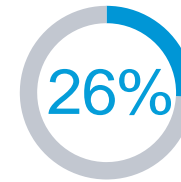


Table 4: Compliance

Parameter	Value
Length measurements	5641
Groups aggregated	4
Minimum size limit	30 cm



Group	Selectivity 50% (SL50; cm)	Selectivity 95% (SL95; cm)	F/M	SPR
All	25.77	31.15	0.36	0.61
2020	25.32	30.37	0.4	0.61
2021	25.42	30.47	0.43	0.58
2022	25.65	30.8	0.46	0.57
2023	25.69	30.94	0.45	0.57



Group	Selectivity 50% (SL50; cm)	Selectivity 95% (SL95; cm)	F/M	SPR
All	22.13	26.24	4.01	0.06
1	21.86	25.86	3.89	0.06
2	21.85	25.84	3.89	0.07
3	21.93	25.92	3.96	0.06
4	21.99	25.99	4.02	0.06

- What does ongoing support look like?

- Data Collection and Data Management – continually being supported by SPC Coastal Team with ongoing improvements and refinements e.g. AI
- Data Analysis and Reporting – STILL continually being supported by SPC Coastal Team but utilising collaborative tools where and as appropriate e.g. FISHKIT, BAREFOOT ECOLOGIST
- Training and development in use of all tools still a core component of SPC Coastal Team