

A group of approximately 15 children and two adults are gathered on a sandy beach. The children, of various ages, are dressed in casual summer clothing like t-shirts and shorts. Some are waving their hands. In the background, there are palm trees and lush greenery. The overall atmosphere is bright and positive.

Spawning Potential Surveys: Informing and empowering community based management with citizen science.

Dr Jeremy Prince

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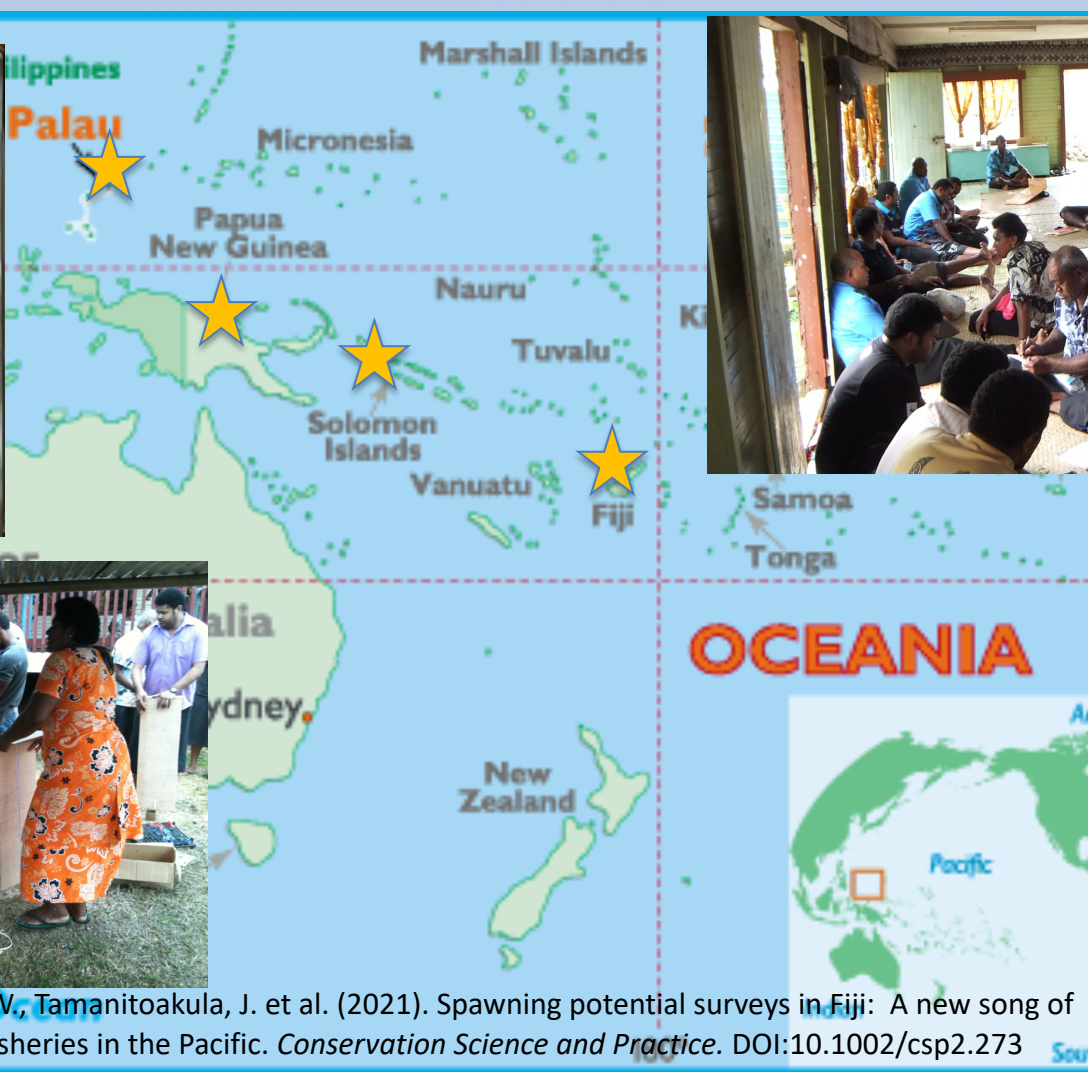
**PROTÉGÉ Technical Workshop on Coastal
Fisheries**

November 2023

Acknowledgements:

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cChange, WWF, TNC, WCS*

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1. VOLACA (NUGA) GOLDEN RABBITFISH
2. LELE (TA) BLUESPINE UNICORNFISH
3. RAWARAWA BLENDER'S PARROT FISH
4. ULAVI BULLEHEAD PARROT FISH
5. KASALA / KAWAKAWA CROWNED GROUPER
6. OTO MALABAR GROUPER
7. SOISOI ORANGE-SPOTTED GROUPER
8. BANITO BLUEFIN TREVALLY
9. KALIA BUNNHEAD PARROT FISH
10. DRAUDRAU H.H.W. GROUP 1



Prince, J.D., Lalavanua, W., Tamanitoakula, J. et al. (2021). Spawning potential surveys in Fiji: A new song of change for small-scale fisheries in the Pacific. *Conservation Science and Practice*. DOI:10.1002/csp2.273

What can we do?

The Solution to Overfishing

Change Old Thinking

The background of the image is a soft-focus photograph of a calm body of water, likely the ocean, with gentle ripples. In the distance, a range of mountains or hills is visible under a pale, overcast sky. The overall color palette is muted, consisting of various shades of blue, grey, and white.

Do not Waste Food

Small fish are sweetest

The reef is a garden.



The reef is a garden.

**Eventually you (cannot) reap
what you (did not) sow.**



How Much Breeding is Enough?

Human Reproductive Index



**More than 2
Children per couple**



**Population
Growth**



~2 Children per couple

Replacement Level



Population Stable



**Less than 2 Children
per couple**



**Population
Decline**



Spawning Potential Ratio (SPR)

No Fishing = 100 % SPR



More than 20%
SPR



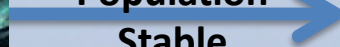
Population
Growth



~20% SPR



Population
Stable



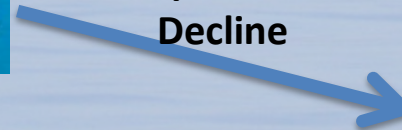
Replacement Level



Less than 20% SPR



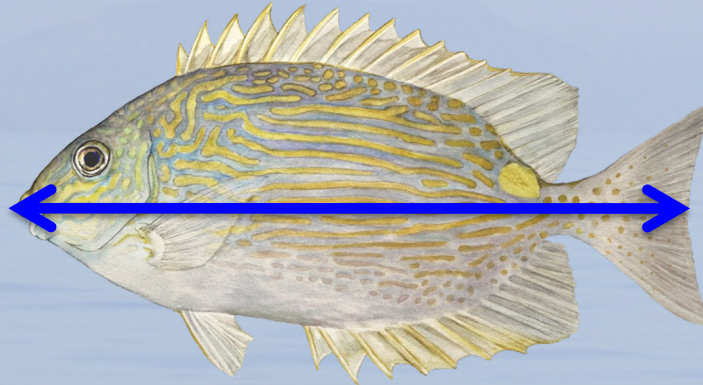
Population
Decline



Spawning Potential data: Length Composition >200 per species



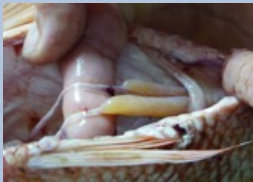
Measuring the Length of Fish: Measure along the Middle of Fish



Spawning Potential data:

Local Size of Maturity >100 per species

Immature



Mature Male



Mature Female

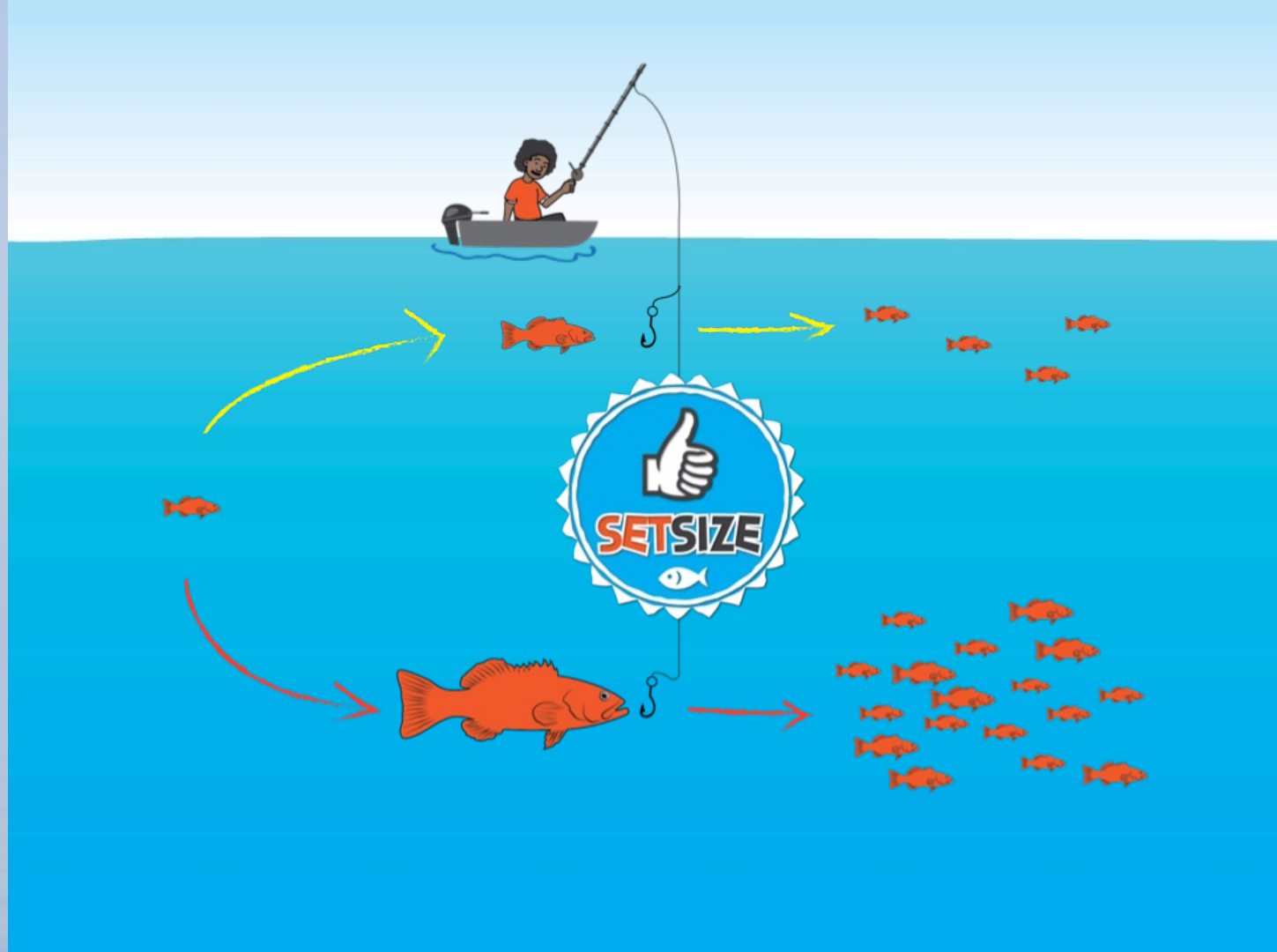






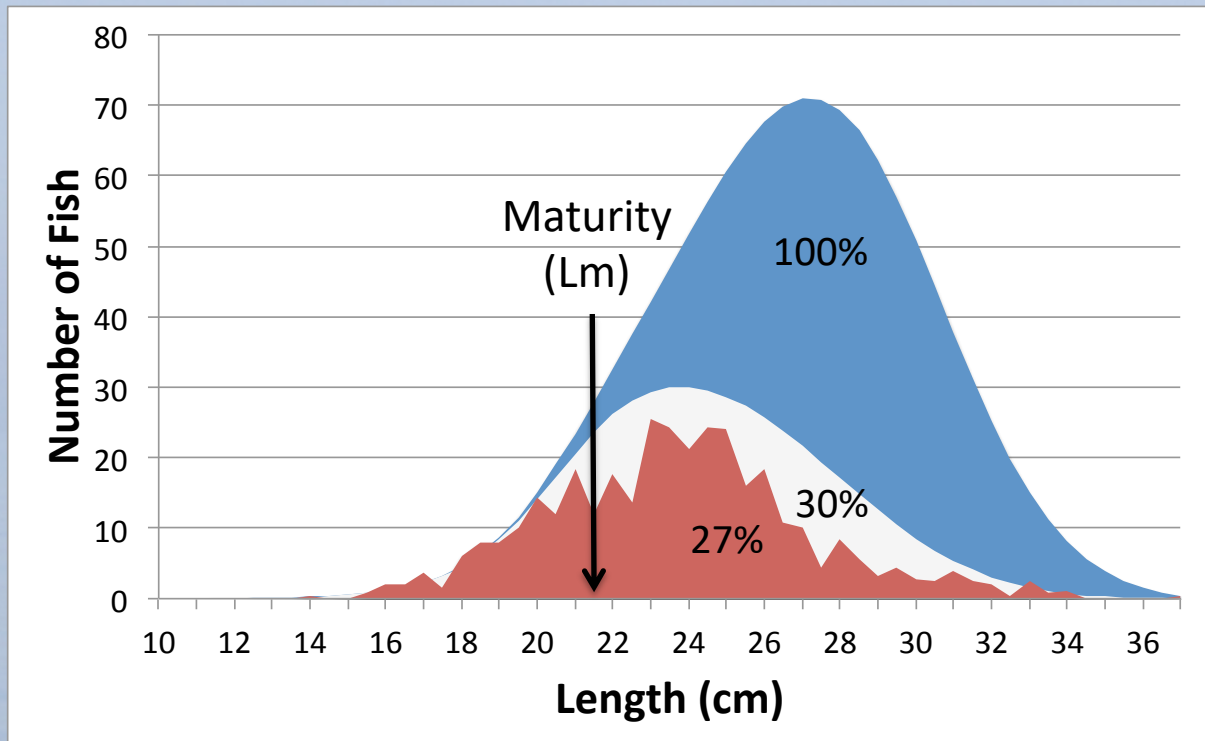
What can we do?





Lutjanus gibbus Taea Solomon Islands

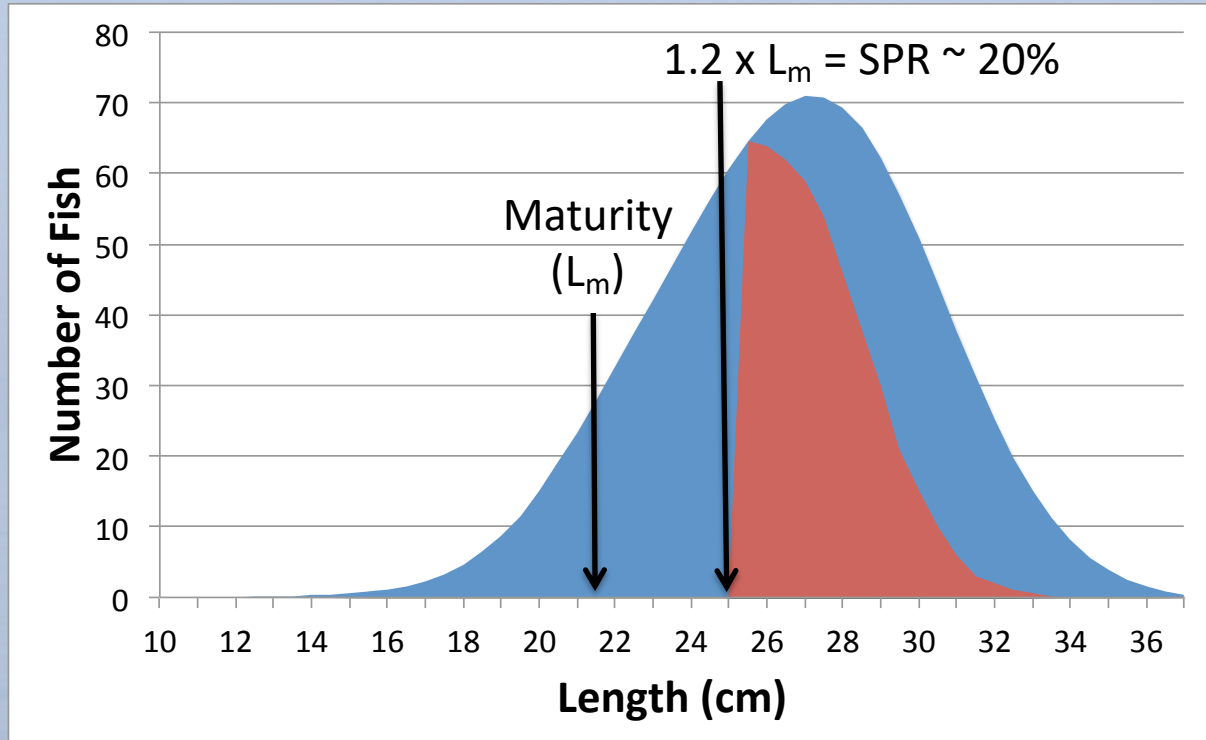
SPR = 27%



Setting Legal Minimum Size

$$LML = 1.2 \times L_m \sim 20\% SPR$$

$$SPR = 40\%$$





Matthew Mirak's Story



Find the Barefoot Ecologist's Toolbox at:
<http://biospherics.com.au>

Find the LBSPR assessment software at:
<http://barefootecologist.com.au>

The End

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