Is Lagonoy Gulf a special breeding ground for Yellowfin Tuna?

A presentation by
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General Santos

Why This Question I

1. In interviews conducted in May 2012 tuna handline fishers in Lagonoy confirmed that throughout the month of May they can not catch Yellowfin Tuna in Lagonoy Gulf

2. However, fishers also confirmed the presence of Yellowfin Tuna in Lagonoy Gulf during that period because they see the fish jumping during the day

3. Manila exporters revealed that in the month of May it is difficult to buy sufficient quantities of high quality tuna, due to the limited availability of tuna and the low quality of the few specimen caught

Why This Question II

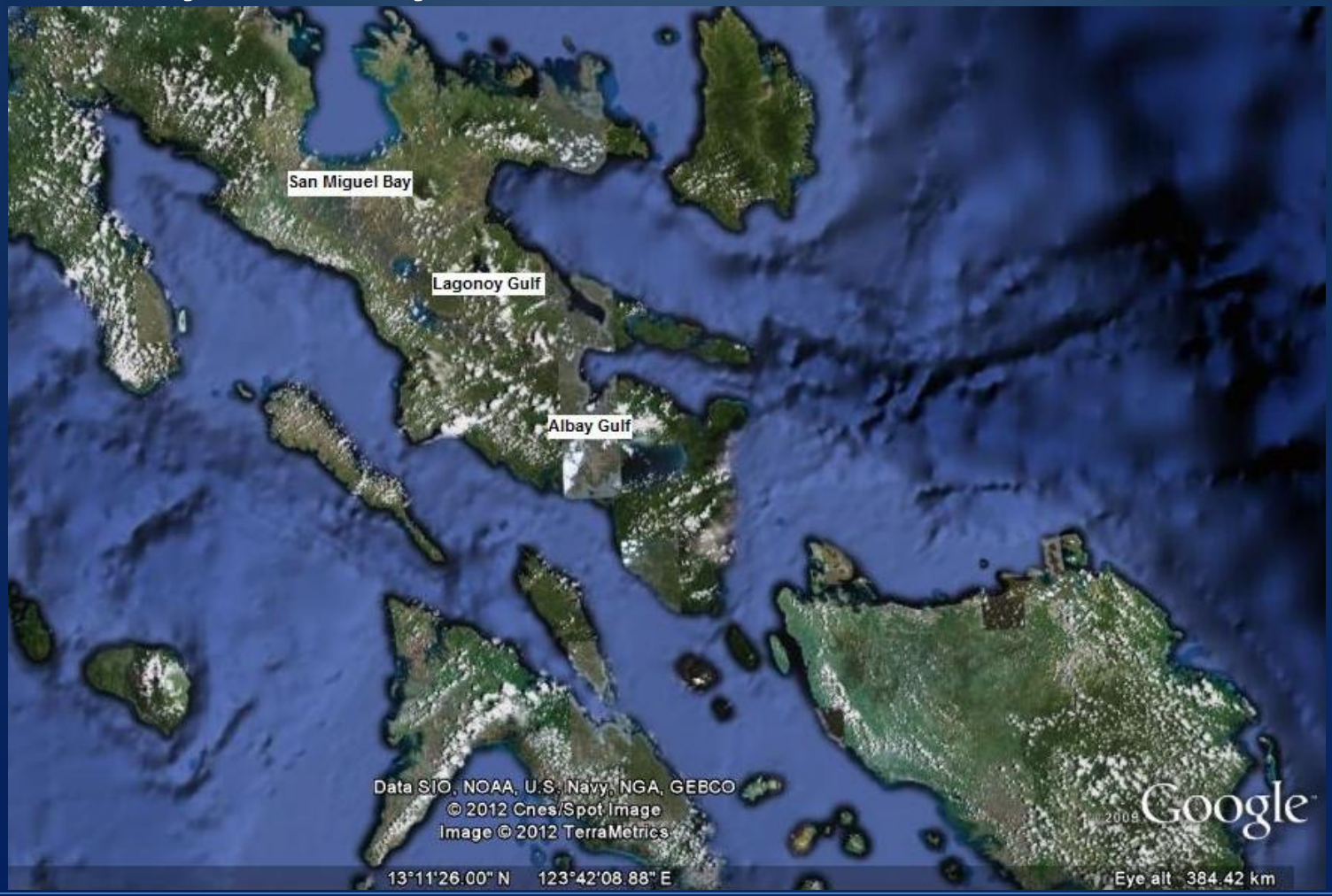
1. Although not necessary for achieving MSC certification, the goal of our project, the establishment of a special fisheries management zone in Lagonoy Gulf with exclusive fishing rights for municipal fishers and limited or no access for commercial fishing operations will further the course of the project and will greatly benefit local fishers and the local fishing industry, as it is well documented in fisheries as well as economical studies of Lagonoy Gulf fisheries

2. BFAR confirms interest in protecting valuable fishing grounds for sustainability reasons and seeks specifically biological evidence to make a case for the establishment of a special fisheries management area

Arguments for a special breeding ground in Lagonoy Gulf

1. Bathymetry
2. Productivity
3. Juvenile Tuna
4. Migration
5. Spawning Season
6. Laval Abundance

Bathymetry I



Bathymetry II

1. The **bathymetry** of Lagonoy Gulf is, compared to its neighbouring bays and gulfs unique – Lagonoy Gulf has a water depth of max. 1300m

2. The continental shelf area is very narrow, dropping down to a few hundred meters very close to the shore

3. There is a resulting upwelling of nutrient rich waters in the Gulf

4. In addition there is a nutrient runoff from surrounding land areas, mainly used for agriculture

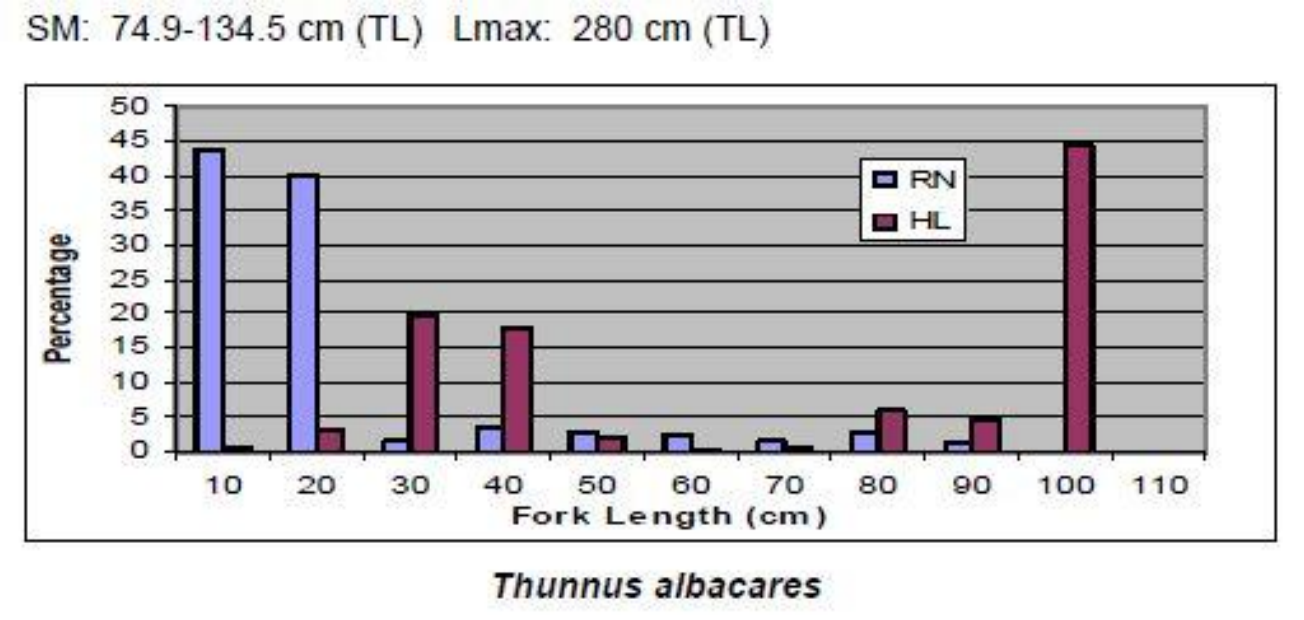
Productivity I

The Gulf of Lagonoy is a **highly productive fishing ground** (among others: Virginia L. Olaño, Marietta, B. Vergara, Fe L. Gonzales[1)] 2009; R. West *et. al* 2011; G. Bradecina *et. al.* 2011) for an array of fish species caught using commercial as well as municipal fishing methods.

No.	Species[1)]	Family	Common English name	Percentage total catch (97-02)
1	Katsuwonus pelamis	Scombridae	Skipjack tuna	29.75
2	Thunnus albacares	Scombridae	Yellowfin tuna	16.30
3	Selar crumenophthalmus	Carangidae	Bigeye scad	5.85
4	Istiophorus platypterus	Istiophoridae	Indo-Pacific sailfish	4.34
5	Rastrelliger faughni	Scombridae	Island mackerel	2.91
6	Coryphaena hippurus	Coryphaenidae	Common dolphinfish, Mahi-mahi	2.77
7	Stolephorus sp.	Engraulidae	Anchovies	2.55
8	Euthynnus affinis	Bonito	Scombridae	2.22
9	Decapterus russelli	Carangidae	Indian Scad	2.15
10	Decapterus macrosoma	Carangidae	Shortfin Scad	1.81

Juvenile Tuna I

Several studies, including BFAR studies, identified heavy exploitation due to excessive fishing, often closely related with **capture of undersized and immature fishes**, mainly by commercial fishing activities fishing illegally in municipal waters, as the key problem for the development of the fishery sector around Lagonoy Gulf.



Virginia L. Olaño, Marietta, B. Vergara, Fe L. Gonzales 2009

Juvenile Tuna II

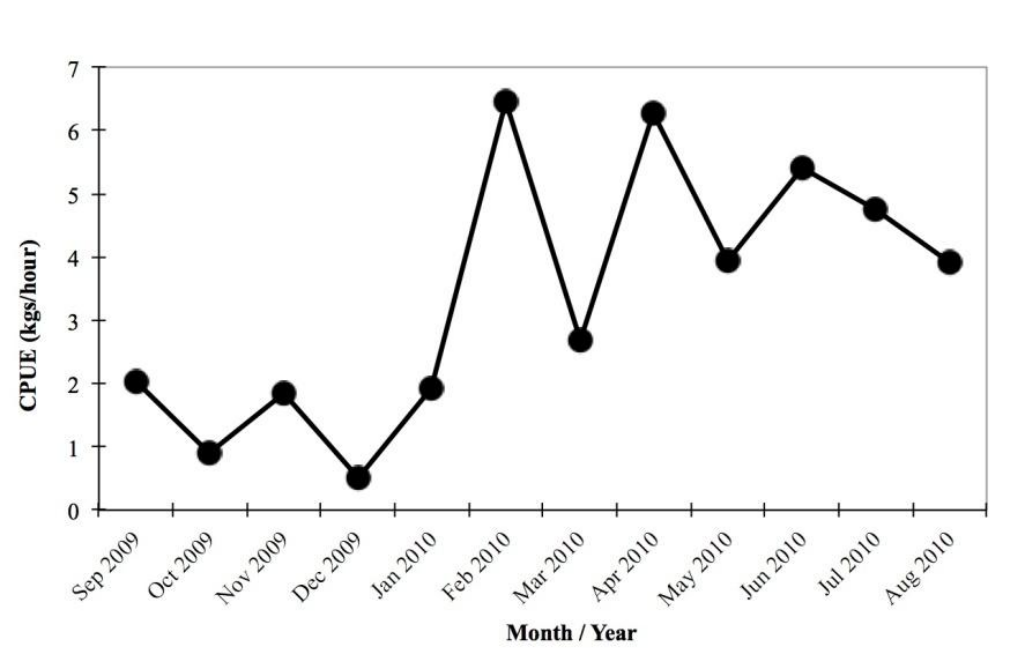
1. During the months from June until to August juvenile tuna is caught in small-scale commercial fishing activities and sold in substantial numbers at local markets (Soliman, pers. com.)

2. Local fishers report lots of “very small” Yellowfin Tuna in the waters west of Catanduanes and Bacacay

3. There is a local fishery on Blue Marlin on Catanduanes catching Blue Marlin on their way from the Pacific into Lagonoy Gulf to breed in the Gulf and estuaries of the rivers of Catanduanes Island

Migration I

1. Migration of adult Yellowfin Tuna into Lagonoy Gulf



"It is observed from the above data that the CPUE for yellowfin tuna has fluctuated over the duration of the port sampling. The CPUE ranged from 0.5kg to 6.5kgs/trip-hour. There was a noticeable increase in the CPUE during the months of February and April 2010, while low catch rates have been experienced from September to November 2010, with the exception of albacore catch."

Monthly Yellowfin Tuna CPUE for Simple Handline Fishing Gears, Region V, Sept 2009-Aug 2010

R. West, M. A. Palma, N. Barut, E. Garvilles, D. Ayanan Jr.; 2011: Preliminary Assessment of the Handline (Banca) Fisheries in the Philippines.

Spawning Season I

1. Although Yellowfin Tuna is breeding all year round, the observed behaviour of not taking any bait by fishers in Lagonoy Gulf in May indicats spawning activities.

2. The observed jumping behaviour is also a strong indication of breeding activities of Yellowfin Tuna in Lagonoy Gulf.

3. The observed seasonality in the above observed activities coincides with the breeding season of Yellowfin Tuna in the Philippines and is well documented in the literature (V. Aprieto, 1995, Itano, 2001)

Spawning Season II

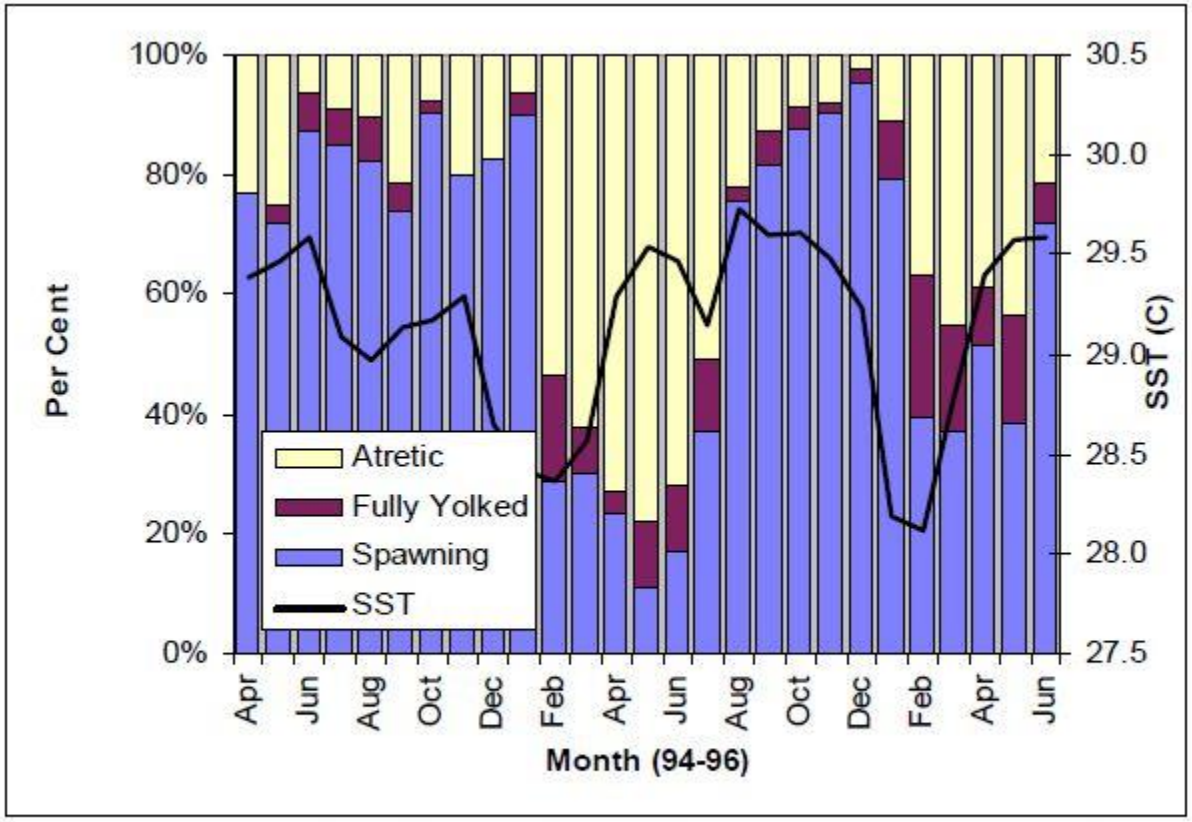
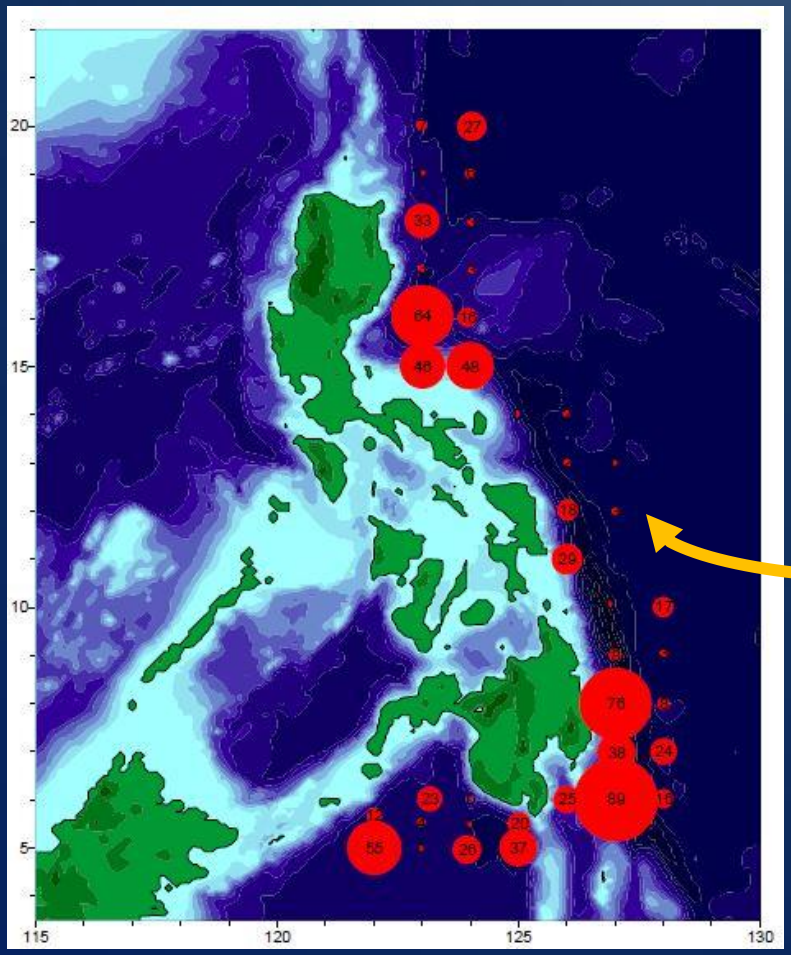
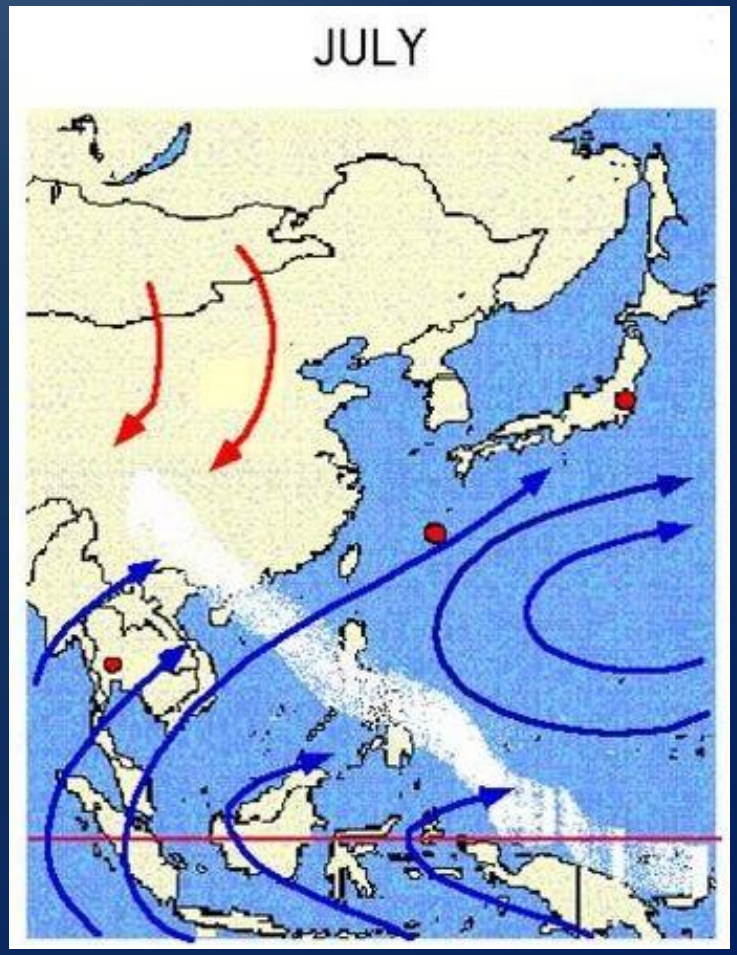


Figure 25. Proportion of mature yellowfin in fully yolked, spawning and atretic condition by month for samples from the Philippine handline fishery with mean monthly SST (EC).

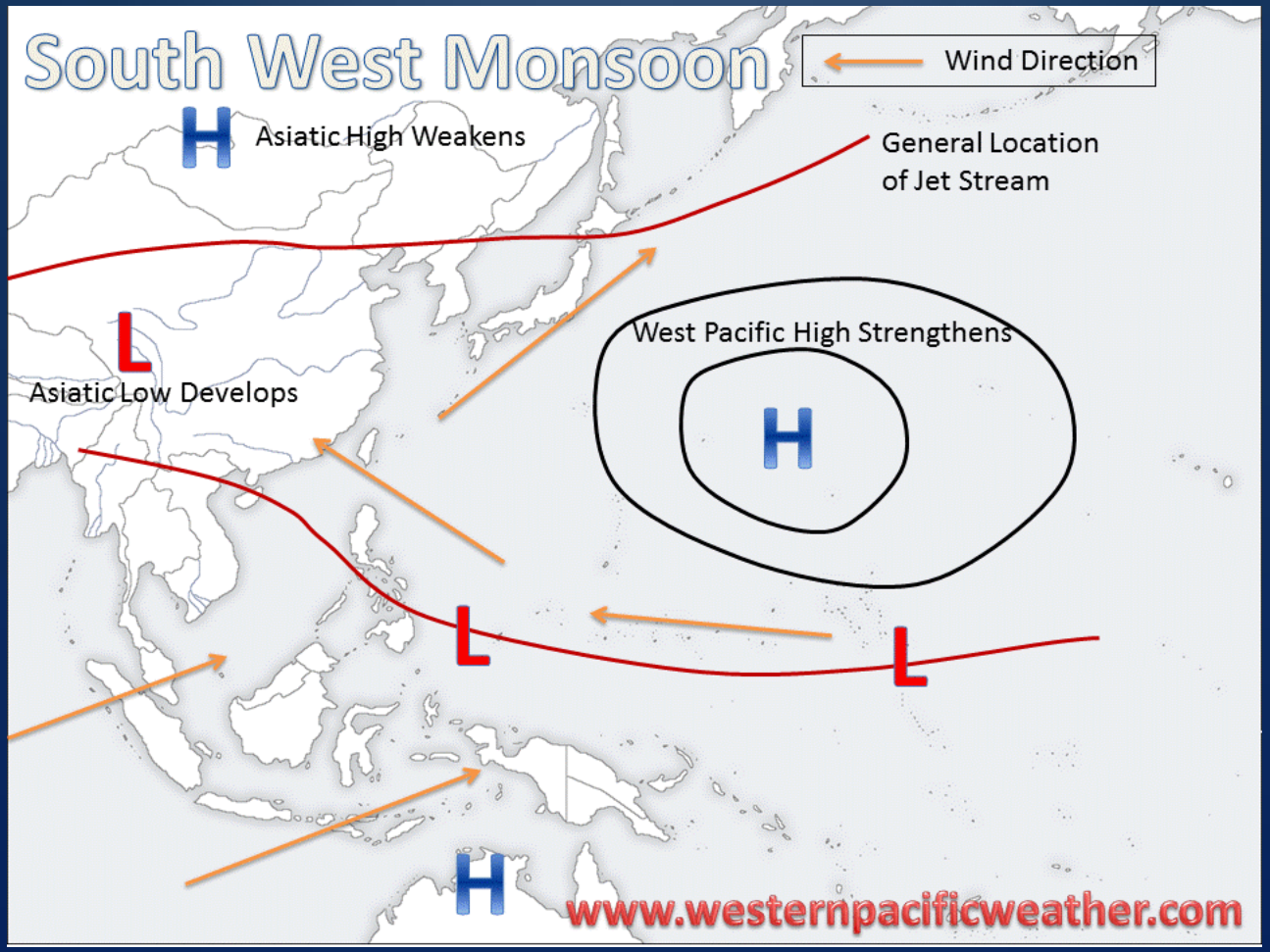
The Reproductive Biology of Yellowfin Tuna (Thunnus albacares) in Hawaiian Waters and the Western Tropical Pacific Ocean:
Project Summary
David G. Itano
SOEST 00-01
JIMAR Contri-bution 00-328

Larval Abundance I





Larval Abundance II



Summary

1. The bathymetry of Lagonoy Gulf favours migration of Yellowfin Tuna into the Gulf

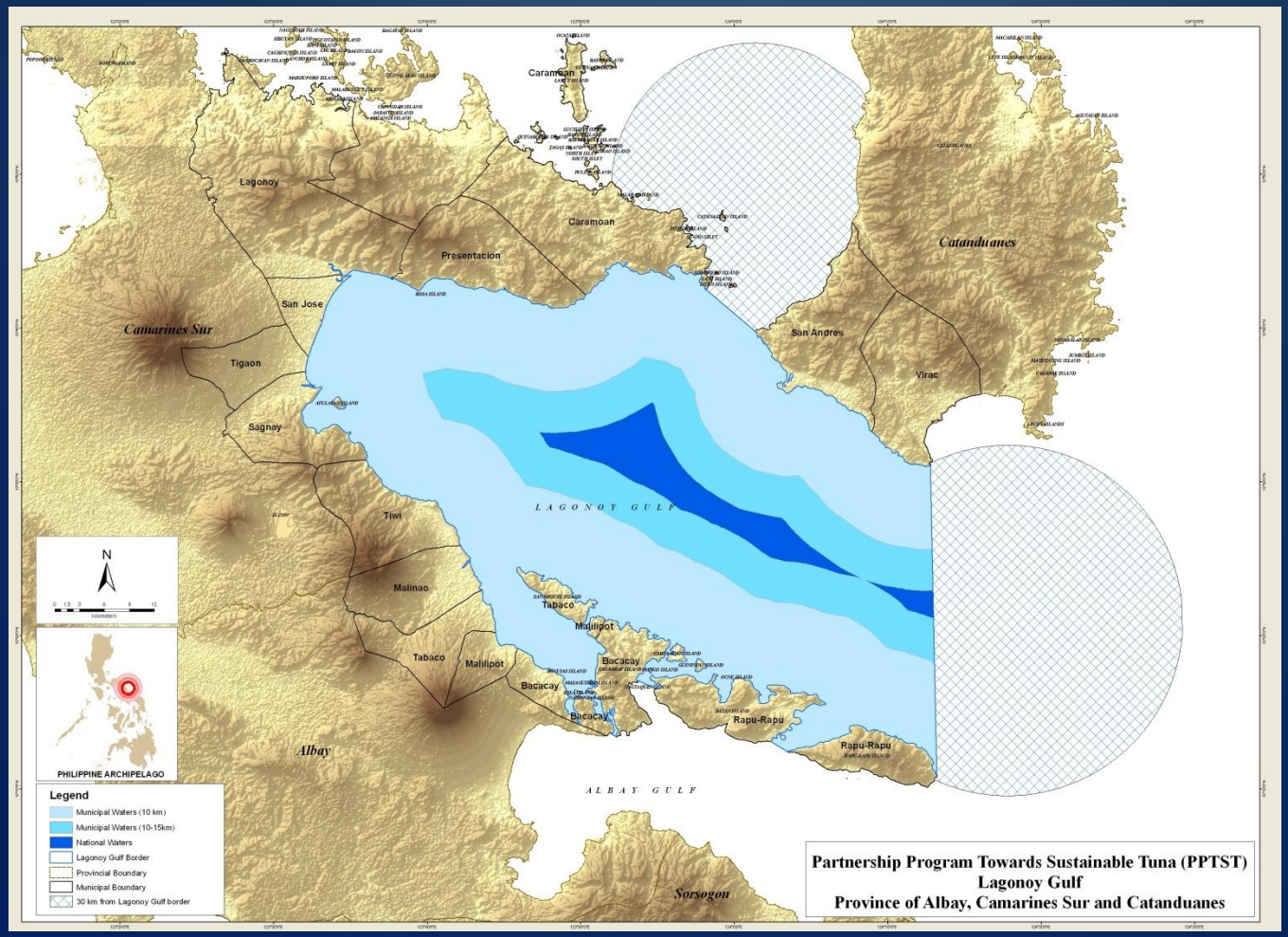
2. Yellowfin Tuna is actively migrating in higher quantities into Lagonoy Gulf before and during main spawning season in May

3. The high productivity of the Gulf supports tuna reproduction

4. Observed high numbers of juvenile Yellowfin Tuna in Lagonoy Gulf waters as well as on local markets after the main spawning season indicate successful spawning during the spawning season

5. The seasonal migration of other highly migratory fish species into Lagonoy Gulf underpins the importance of the Gulf for reproduction of highly migratory fish species coming from the Pacific Ocean

Problems I



PPTST
Project map

Problems II

Lagonoy Gulf is heavily exploited due to **excessive fishing** which is often closely related with **capture of undersized and immature fishes**. The alarming decline of fishery resources and the continuing environmental degradation due to intense fishing effort, **growth overfishing**, **rampant illegal fishing** on open access fishery, and other legal and institutional issues are the serious concerns in Lagonoy Gulf.

The plight of small-scale fishers in coastal areas stresses the need to properly employ efficient management and regulatory interventions to help resolve the dwindling productivity, stability and sustainability of Lagonoy Gulf.

Assessment of the Fisheries of Lagonoy Gulf, VIRGINIA L. OLAÑO, MARIETTA B. VERGARA and FE L. GONZALES (2003?)

Problems III

The most common concern amongst handline fishermen in the (Bicol) region is the decline in catch production caused by **overfishing attributed to** vessels using other gears such as **bagnets and ringnets**. Medium to large scale commercial vessels have been reported to **either fish illegally** in municipal waters, or **just outside the 15-km limit,** catching tuna which is supposed to be caught by handline vessels.

PRELIMINARY ASSESSMENT OF THE HANDLINE FISHERY IN BICOL REGION, PHILIPPINES
Report Prepared for the "Preliminary Assessment of the Handline (Banca) Fisheries in the Philippines" (FIS/2009/033), Project funded by the Australian Centre for International Agricultural Research (ACIAR) Prepared by the Australian National Centre for Ocean Resources and Security (ANCORS), University of Wollongong, Bureau of Fisheries and Aquatic Resources (BFAR) National Fisheries Resources and Development Institute, and BFAR Region V, July 2011

Summary Problems

The studies identify heavy exploitation due to excessive fishing, often closely related with capture of undersized and immature fishes, mainly by commercial fishing activities fishing illegally in municipal waters, as the key problem for the development of the fishery sector around Lagonoy Gulf.

Only 7 percent of the surface area of the Gulf are national waters, but commercial fishing is poaching in municipal waters and catching not only sardines and round scad but also substantial numbers of juvenile Yellowfin Tuna and Skipjack Tuna.

Solution

Close Lagonoy Gulf for commercial fishing activities

Establish a seasonal closure for commercial fishing activities also around the openings of the Gulf to ensure successful passage of schools of juvenile highly migratory fish species out of the Gulf area

There are a lot more economic as well as socio-economic reasons to stop commercial fishing in Lagonoy Gulf, but BFAR is currently only looking for biological arguments to impose a closure of commercial fishing activities in highly selective areas – which I believe Lagonoy Gulf represents

Thank you for your attention