Gulf of California Cortez geoduck - hookah

PI Harvest Strategy Information and Monitoring

Report by Minerva N. Alonso Alemán

Content

Glossary 2
Background 2
PI. 1.2.3 Harvest Strategy Monitoring and Information 3
Rationale from the original 2018 pre-assessment 3
Updated rationale 4
Conclusions 7
Reviewed Literature 8
ANNEX I. Fleet composition for geoduck clam in Baja California and Sonora 9

Glossary

INAI	Instituto Nacional de Acceso a la Información (National Institute of Access to Information)
INAPESCA	Instituto Nacional de Acuacultura y Pesca (National Aquaculture and Fisheries Institute)
CONAPESCA	Comisión Nacional de Acuacultura y Pesca (National Commission of Aquaculture and Fisheries)
FIP	Fisheries Improvement Project
SIPESCA	Sistema de Información de Pesca y Acuacultura (Information System of Fisheries and Aquaculture)

Background

The stock assessment framework for the geoduck fishery is carried out by INAPESCA. The Geoduck fishery is assessed and managed on a sub-bed basis. Based on the results of the banks (polygons) assessments, annual or bi-annual catch quotas are established per license holder, within their assigned areas. Since 2012, INAPESCA had elaborated 174 Technical Reports in reference of Geoducks clams (both species), 139 of them developed by the Baja California offices (Official report, INAPESCA).

During the first years of the fishery, quotas were assigned based on the estimate of the original B_0 geoduck population, this research was developed with information of Development Fishing permits. The initial granting of quotas was based on ≤3% from 2003 to 2007. From that year on, quotas to all permit holders were reduced considering a precautionary value of ≤1% of the original biomass.

In 2014, a preliminary quota was granted for the second semester of the year, in order to make that biological monitoring to develop assessments coincide with the time of year with the best visibility to carry them out, which coincides with the beginning of the year. That year coincides with the inconsistency of the values between production and the granting of quotas.

As of 2015, the year in which the assigned quota values are greater than the reported production, the evaluation methodology was modified to strengthen it and an exhaustive sampling was implemented to verify that the quotas really constituted 1% of the original population. In 2016, a reduced preliminary quota was given to all areas, which was adjusted as of 2017. Quotas are granted based on technical reports for each permit holder for a specific area and reported as number of organisms, total kilos or both. Technical reports are carried out by INAPESCA with the support and collaboration of permit holders.

The fishery is managed by the following

- Minimum legal size of 130mm on conch length
- Variable quotas per polygon, based in INAPESCA monitoring and technical reports
- Extraction allowed until 30 m depth and only during the day
- 3 fishermen allowed per artisanal vessel
- Gear allowed hookah dive with stinger to remove bottom sand
- Obligatory GPS in the artisanal boat
- Fishing permit

Harvest Control Rule

- Tri-annual rotation of sub-beds
- No exploitation zones
- Exploitation zones
- Avoid exploitation of contiguous sub-beds
- Quotas adjustments based on estimated abundance of sub-legal geoduck clams and estimated abundance of legal geoduck clams, that respond to monitoring assessments by polygon.

PI. 1.2.3 Harvest Strategy Monitoring and Information

The pre-assessment performed in 2018 rated this PI as <60.

Rationale from the original 2018 pre-assessment

PI 1.2.3 (a) Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.

There is no evidence that stock structure & stock productivity is evaluated at a regional level nor if there is enough local information to support the harvest strategy. It is not clear that catches nor the stock have remain stable along the last years, so this would impede this PI to achieve SG 60. Although, biomass estimations inside each polygon is evaluated and there is **SOME** information available through scientific studies and management plans. Number of fishing licenses, vessels were available through the CNP, 2018. Thus, **PI 1.2.3(a) would not reach SG60**.

PI 1.2.3 (b) Stock abundance and UoA removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.

The evaluation team have no evidence of a stock assessment as such, even if there is specific information at local levels; it is necessary to generate a stock assessment of the

entire population, this would impede this point to achieve SG60. However, there is evidence that with the assistance of the producers, INAPESCA develops every two years a monitoring program to evaluate the polygons biomass and in some cases quotas have been diminished or not granted. UoA removals are monitored and reported every year.
PI 1.2.3 (b) would not reach SG60

Updated rationale

Background

In 2021 a special project with the goal to integrate and analyze the official information available at a regional level in the northern area of the Gulf of California was promoted by the FIP, EDF and INAPESCA. This project is the first attempt to asses geoduck clam at a regional level. Some of the results of this work are, as follows

- The integration of a data base that includes historical information generated by INAPESCA at a regional level.
- Improved collaboration between Sonora and Baja California INAPESCA offices.
- The estimation of Biomass "0" for some of the polygons.
- Identification of priority areas to be assessed.
- Size structure determination for global geoduck production.
- Preliminary estimation of geoduck regional biomass.
- Some polygons (fishing permits) had registered catches for only one years.
- 15 from 48 polygons have complete historical information.
- 5 polygons represent 60% of the historical catches, one of them is a FIP member.
- In some polygons, a decrease of the geoduck density has been found, this is not the case for the FIP polygon.
- The FIP area shows healthy with adequate densities after 17 years of being exploited.
- There are quotas adjustments when the polygon geoduck population diminishes.
- In the State of Sonora, after 2015, most fishing permits are not in use. Only 3 had reported catches in 2020, although there are 9 polygons with valid permits ([1]).

The complete report is for internal use by INAPESCA as of today, available by request. Some of the results will be gradually included in official reports.

PI 1.2.3 (a) Range of Information.

Sufficient relevant information related to stock structure, stock productivity and fleet composition and other data are available to support the harvest strategy in most (but not all) of the polygons.

Information on stock structure and stock productivity is available for most of the polygons (polygons are associated to fishing permits) and has been presented to the FIP in internal meetings with INAPESCA, not for public release, but available on request. Some polygons have very little information, which have been classified as priority for future stock assessments. There is information available of fleet composition via **pescandodatos.org** and INAI (Annex I). Thus, this PI would fulfill SG60a, but the lack of information on some polygons impedes this PI to reach SG80a**.**

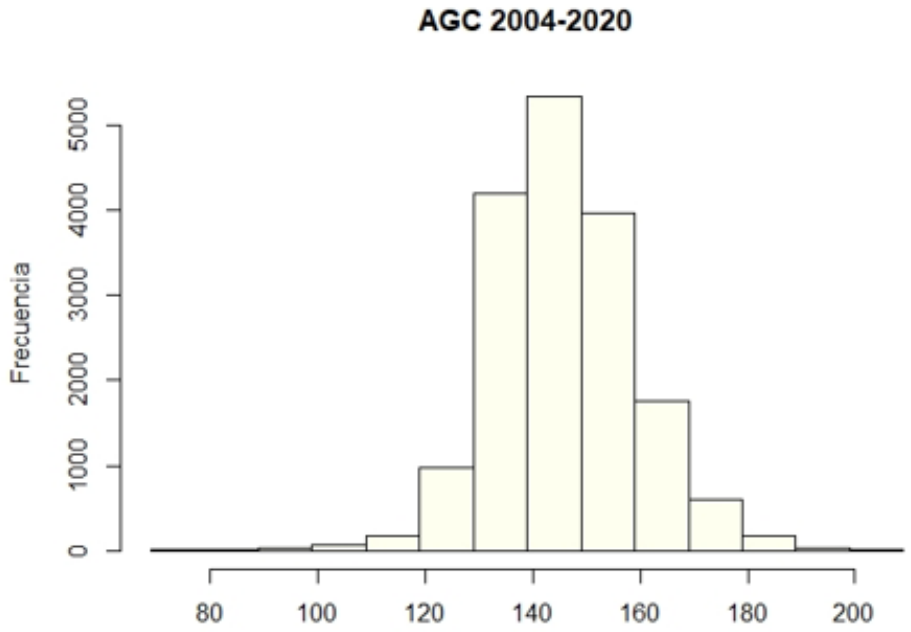

Fig 1. Size structure of commercial catches and samplings from 2004-2020, in the northern area of the Gulf of California (Larios, 2021)

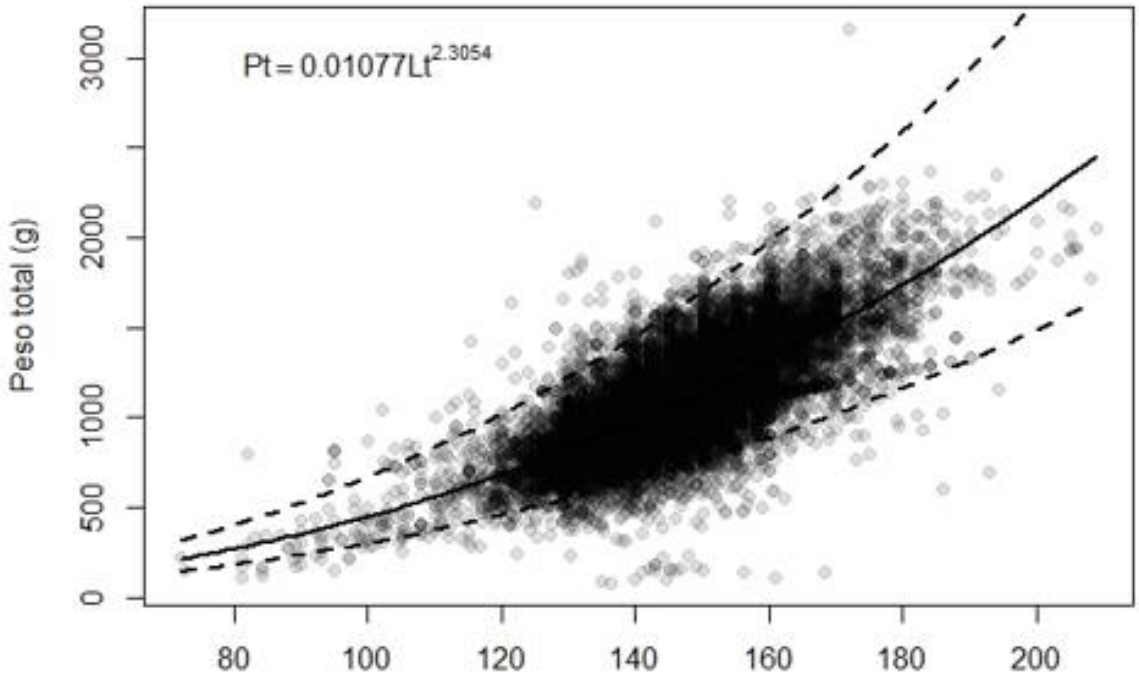

Fig 2. Total weight versus length (mm) of commercial catches and samplings from 2004-2020, in the northern area of the Gulf of California (Larios, 2021)

PI 1.2.3 (b) Monitoring.

Stock abundance and UoA removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.

Stock abundance are monitored every two years. There is evidence that with the assistance of the producers, INAPESCA develops every two years a monitoring program to evaluate most of the polygons biomass, although there are some which have limited information. UoA removals are monitored and reported every year. A regional assessment was developed in 2021 to support the harvest strategy and the control rule. Thus, **PI 1.2.3 (b) would reach SG80b**.

PI 1.2.3 (c) Comprehensiveness of information.

There is some information about illegal fishing in the area, but we cannot consider that we have a complete panorama nor estimates of the level of illegal fishing on geoduck clam. Thus, this **would impede SG 1.2.3 (c) from reaching SG 80c**.

Conclusions

After the review of updated information and the results of the Regional Assessment **PI 1.2.3 would reach SG 60-79.**

Reviewed Literature

Atenea en el mar Technical Reports.

CONAPESCA, https://www.conapesca.gob.mx/wb/cona/informacion_estadistica_por_especie_y_entidad

DOF, 2012, 07/11/2012 Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (SAGARPA)Acuerdo por el que se da a conocer el Plan de Manejo para la Pesquería de Almeja Generosa (Panopea globosa) en las costas de Sonora, México.

DOF, 2012; 23/03/2012 Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (SAGARPA), Acuerdo por el que se da a conocer el Plan de Manejo para la Pesquería de Almeja Generosa (Panopea spp.) en las costas de Baja California, México; 33 pp.

DOF, 2015. Norma Oficial Mexicana NOM-014-SAG/PESC-2015, Especificaciones para regular el aprovechamiento de almeja generosa (Panopea generosa y Panopea globosa) en aguas de jurisdiccón federal del litorial del Oceáno Pacífico y Golfo de California. (DOF:25/06/2015)

DOF, 2018. Acuerdo por el que se da a conocer la Carta Nacional Pesquera. (DOF: 11/06/2018)

INAI, Solicitud de acceso a la información no. 0819800005719

INAPESCA technical reports

Larios-Castro, E. 2021. Integración y análisis de información oficial disponible sobre Panopea globosa en Baja California y Sonora. Internal report. EDF-INAPESCA.

Pescandodatos.org. “Permisos y Concesiones de Pesca Comercial” y "Embarcaciones que ampara el permiso o concesión" obtenidas a través de solicitudes de información a la Conapesca vía INAI, realizada en octubre de 2018 y 2019. Search date. 24/01/2022

ANNEX I. Fleet composition for geoduck clam in Baja California and Sonora

Bases de datos “Permisos y Concesiones de Pesca Comercial” y "Embarcaciones que ampara el permiso o concesión" obtenidas a través de solicitudes de información a la Conapesca vía INAI, realizada en octubre de 2018 y 2019. Search date. 24/01/2022

Name	Permit no.	Initial Date	Final Date	Vessels	Gear	Arrival Area	State
FISHINGMEX SPR DE RL	102030025059-2	13/12/2019	13/12/2021	1	1	PUNTA ROSARITO	Baja California
PESCADORES EL CHUTE SPR DE RL	PPF/DGOPA-048/20	26/06/2020	26/06/2021	10	10	EL CHUTE Y VALLE TRANQUILO	Baja California
SPR PUNTA CANOAS SRL DE CV	102030025042	04/06/2019	31/12/2023	0	11	PUERTO CANOAS, BAJA CALIFORI	Baja California
LOS AMIGOS DEL PUERTO SPR DE RL	102063025044	21/01/2020	21/01/2025	13	13	SAN FELIPE, BAJA CALIFORNIA	Baja California
LA TRIESTE DEL MAR DE CORTEZ SC DE RL DE CV	102063025054	2017-06-20	2021-12-31	2	2	SAN FELIPE BAJA CALIFORNIA	Baja California
EDSON IBARRA CANEDO	102063025071	16/08/2019	16/08/2021	0	2	CAMPO DON ABEL, BAJA CALIFOR	Baja California
GPO MARITIMO PROVEMAR SPR DE RL	1020300250031	11/02/2020	11/02/2025	2	2	SAN FELIPE	Baja California
PESQUERA GORDOS FISHING SPR DE RL	102030025059-1	20/05/2019	20/05/2021	0	2	PUNTA ROSARITO	Baja California
UNION DE PESCADORES BUZOS DE LA COSTA OCC	102030025065	31/03/2020	31/03/2025	2	2	EL SAUZAL Y LA SALINA, B.C.	Baja California
ESTELA MARTINEZ SALGADO	1020300250017	31/03/2020	31/03/2025	3	3	SAN FELIPE	Baja California
GENARO SHEL MAN WONG MA	1020300250014	2017-03-07	2021-12-31	6	3	CAMPO SANTA FE	Baja California
GUILLERMO MORENO LEON	1020300250030	26/02/2020	26/02/2025	3	3	BAHIA DE LOS ANGELES	Baja California
PESQUERA EL TOMATAL SPR DE RL	102030025059	10/07/2020	10/07/2025	3	3	PUNTA ROSARITO, BAJA CALIFOR	Baja California
ASOCIACION PESQUERA MORTERA DE LEYVA SPR D	102030025069	23/11/2020	23/11/2023	4	4	CAMPO NUEVO.	Baja California
BUZOS Y PESCADORES DEL EJIDO CORONEL ESTE	102030025051	06/11/2020	06/11/2023	4	4	PUERTO ARBOLITOS Y RINCON D	Baja California
DANIEL SUAREZ SANTANA	102063025053	29/05/2020	29/05/2023	4	4	SAN FELIPE, BAJA CALIFORNIA	Baja California
GPO DE PESCADORES RIBERENOS SPR DE RL	102030025048	31/01/2020	31/01/2023	4	4	SANTA CATARINA	Baja California
PESQUERA GAGALU SPR DE RL	102030025043	16/08/2019	16/08/2021	0	4	RINCON DE BALLENAS.	Baja California
PRODUCTOS MIRUGAY SPR DE RL	102030025061	18/12/2020	18/12/2025	4	4	SAN FELIPE.	Baja California
RUBEN POLO JASSO	102030025050	18/12/2020	18/12/2025	4	4	PLAYA HERMOSA	Baja California
SC PESCA Y BUCEO ECOLOGICO DE SAN FELIPE SC	102030025070	13/05/2019	31/12/2021	0	4	CAMPO DON ABEL, BAJA CALIFOR	Baja California
UNIDAD PESQUERA FORTALEZA MARINA SPR DE RL	102071025066	08/04/2021	08/04/2026	4	4	MUELLE DE SAN FELIPE.	Baja California
UNIDAD PESQUERA FORTALEZA MARINA SPR DE RL	102071025066	08/04/2021	08/04/2026	4	4	MUELLE DE SAN FELIPE.	Baja California
ZELTZIN PEREZ HERRERA	PPF/DGOPA-008/21	01/03/2021	01/03/2022	3	4	LA SALINA	Baja California
COMPAÑEROS DEL PUERTO SCL	102063025047	08/02/2021	13/01/2026	6	6	SAN FELIPE.	Baja California
KACHIGI SPR DE RI	102030025068	11/09/2020	11/09/2023	6	6	PUERTO SAN CARLOS	Baja California
MARIA DEL CONSUELO FRANCISCA FLORES LOZAN	1020300250013	06/12/2019	06/12/2024	6	6	PUERTECITOS	Baja California
MINERVA PREZ CASTRO	CP0042015	2015-09-30	2035-09-30	7	6	CAMPO SAHUARO	Baja California
SCPP RIBEREÑA DEMETRIO SOBERANES CASTRO S	102063025055	2017-03-13	2022-03-13	8	8	SAN FELIPE BC	Baja California
ASOCIACION PESQUERA REGASA NUM 2 SPR DE RL	1020300250016	20/01/2020	20/01/2025	8	8	PUNTA SAN ANTONIO	Baja California
PESQUERA MAR PROFUNDO SC DE RL DE CV	102063025056	22/10/2020	22/10/2025	8	8	SAN FELIPE, BAJA CALIFORNIA	Baja California
UNION DE PRODUCCION PESQUERA MAVADU SPR I	102063025034	03/03/2020	03/03/2025	8	8	SAN FELIPE, BAJA CALIFORNIA	Baja California
PESQUERA SANCHEZ JR SC DE RL	126039025025	20/12/2019	20/12/2021	2	2	GOLFO DE SANTA CLARA	Sonora
ROCK DESIERTO Y MAR SC DE RL DE CV	PPF/DGOPA-013/20	13/02/2020	13/02/2021	3	3	PUERTO PEÑASCO.	Sonora
SCPP JAIBEROS Y ESCAMEROS SC DE RL	126070025024	18/11/2020	18/11/2025	3	3	LA PINTA	Sonora
SCPP FAMILIA VEJAR SC DE RL	126054025022	2017-08-28	2021-12-31	4	4	PUERTO LIBERTAD SONORA	Sonora
CPP RIBERENA RICARDO LORETO VALENZUELA SC	126047025014	20/12/2019	20/12/2024	4	4	PUNTA CALAVERA	Sonora
RAUL SANCHEZ FOURCADE	126047025015	16/04/2021	16/04/2026	4	4	BAHIA DE LOBOS.	Sonora
SCPP JAIBEROS Y ESCAMEROS SC DE RL	126047025017	15/02/2019	31/12/2022	0	6	LA PINTA	Sonora
BUZOS DE PUERTO PUNTA PEÑASCO SC DE RL	126070025021	02/12/2020	02/12/2025	7	7	LA PINTA	Sonora
SCPA Y P ISLAS DE SONORA SCL	126054025018	13/12/2019	13/12/2022	7	7	LA PINTA	Sonora
SCPP MAR Y TIERRA DEL GOLFO DE CORTEZ SC DE	126070025019	14/01/2021	14/01/2026	8	8	RECINTO PORTUARIO	Sonora