

Gulf of California Cortez geoduck - hookah

PI Harvest Strategy Analysis

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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)
SIPECSA	Sistema de Información de Pesca y Acuacultura (Information System of Fisheries and Aquaculture)
SEPESCA	Secretaría de Pesca y Acuacultura de Baja California (Fisheries and Aquaculture Secretary of Baja California)

PI. 1.2.1 Harvest Strategy

The pre-assessment performed in 2018 rated this PI as <60 based on the sub-score c) harvest strategy monitoring.

Rationale from the assessment

- The harvest strategy **IS EXPECTED** to achieve stock management objectives reflected in PI 1.1.1 SG 80, as quota per zone (polygon or area) is determined based on technical opinions of INAPESCA considering a precautionary approach. Legal minimum size is

130 mm while L_{50} is 91.9 mm. **PI 1.2.1 a) would reach SG60** but not SG80 because the status of the stock is not estimated against reference points.

- b) Quotas are determined and evaluated for each zone (area) based on a dynamic biomass model considering 1% of the population over the minimum legal size. In other countries precautionary quotas represent between 1-3%. As an example, the Washington state (USA) commercial geoduck fishery is the largest and most valuable clam fishery on the pacific coast of north America, started in the 70's, after a decay of their catches they established a more conservative annual harvest rate of 2.7%, higher than the 1% established for the Cortes geoduck clam. Thus, the harvest strategy is **LIKELY** to work based on prior experience or plausible argument. PI 1.2.1 b) would reach SG60, but not SG80 because of the lack of local evidence.
- c) Monitoring is in place through logbooks and INAPESCA monitoring, although not all the licensees comply with the commitment of filling the logbooks (Julian Castro, personal communication). Licensees that comply receive 2 years quotas, while the rest receive diminished quotas or may lose their fishing licenses (Julian Castro, personal communication). Nevertheless, from the information obtained, where the production seems to duplicate the allocated quota, monitoring seems to be not enough to understand if the harvest strategy is working. **Therefore PI 1.2.1 c) would not reach SG60.**

Updated rationale

Background

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 $\leq 3\%$ from 2003 to 2007. From that year on, quotas to all permit holders were reduced considering a precautionary value of $\leq 1\%$ 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. (Table I)

Table I. Allocated quotas vs production from different sources.

BAJA CALIFORNIA		Year									
Information	Source	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Allocated quotas	Request information access (INAI) no 0819800002719				465,287	1,483,483	788,543	1,284,139	1,163,000	1,160,478	1,226,723
<i>P. globosa</i> y <i>P. generosa</i> production	Sipesca	79,704	1,071,595	1,044,063	1,158,179	1,574,784	2,068,504	1,058,747	1,092,095	652,966	
	Conapesca 2	85,640	1,282,796	1,299,920	1,404,001	2,067,392	2,641,447				
	Producción a partir de avisos de arribo 2				1,404,020	1,664,739	2,094,875	1,058,747	1,092,095	652,966	1,023,908

The production values of geoduck vary slightly depending on the source of information (INAI, SIPESCA, SEPESCA). 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 of permit holders.

From 2012 to 2018, 174 technical reports were made for the granting of quotas in the states of Baja California, Baja California Sur and Sonora (Table II).

Table II. Number of Technical reports about allocated quotas of geoduck clam in Baja California, Baja California Sur & Sonora, 2012-2018 (Request information access no. 0819800005719)

BAJA CALIFORNIA								
ZONE	Municipality	2012	2013	2014	2015	2016	2017	2018
Gulf de California	Mexicali	2	10	6	14	20	26	34
	Ensenada	2	3	2	2	6	5	7
	Total	4	13	8	16	26	31	41
BAJA CALIFORNIA SUR								
ZONE	Municipality	2012	2013	2014	2015	2016	2017	2018
BAHÍA MAGDALENA	Comondú	2	2	8	2	2	4	3
	Total	2	2	8	2	2	4	3
SONORA								
ZONE	Municipality	2012	2013	2014	2015	2016	2017	2018
Gulf de California	Puerto peñasco			1	4	3	2	1
	Guaymas					1		
	Total	0	0	1	4	4	2	1

In the exclusive case of the polygon that is part of the FIP, as of 2017 quotas correspond to average 228,716 organisms. If we consider historic quotas since 2007, the year in which the quota per polygon was adjusted for the first time to 1% of B₀, average annual quotas correspond to 239,412 organisms per year. The difference between these two historical average values 2007-2020 vs the allocated quota on 2020, there is a difference of less than 5%.

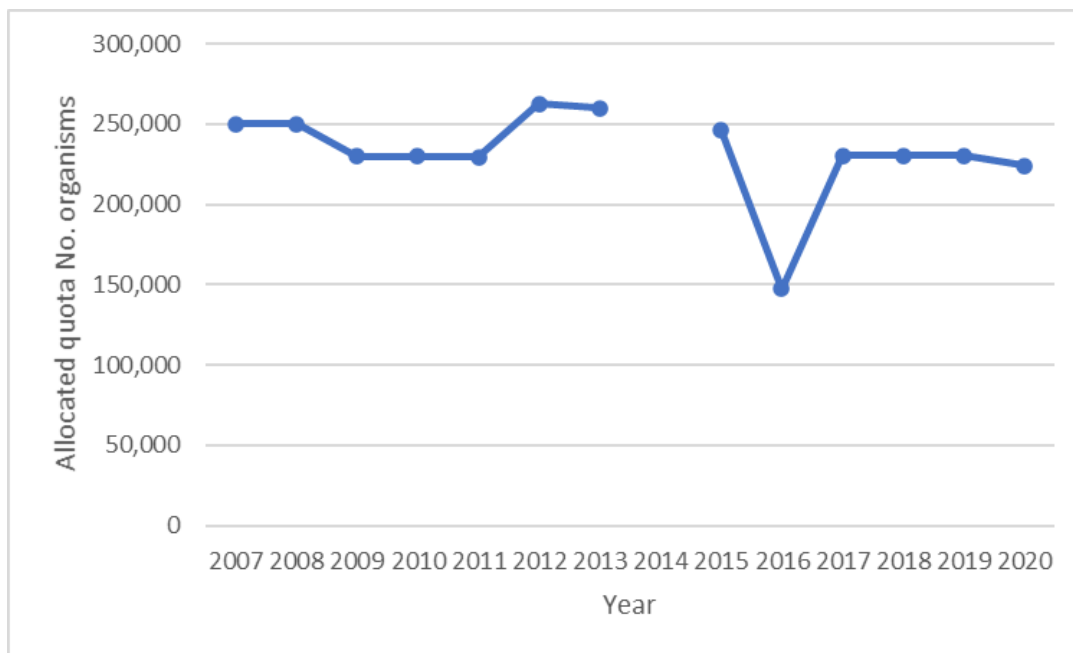


Figure 1. Historical trend of allocated quotas from 2003 to 2020 corresponding to the FIP area

Information from INAPESCA biological monitoring inside the FIP fishing ground shows a relative abundance positive trend from 2009 to 2014, consistent with the allocated quotas for those years.



Figure 2. Number of organisms/m² in FIP fishing area from INAPESCA biological monitoring

Conclusions

It is concluded that monitoring is in place that is expected to determine whether the harvest strategy is working.

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 jurisdicción federal del litoral del Océano 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

Julián Castro personal communication (march, 2019), Former INAPESCA representant in Baja California.