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NATIONAL REPORT OF MEXICO

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SUMMARY

This national report describes the recent trends of the Mexican tuna fishery for the tuna and tuna-like species in ISC area

In Mexico, the National Institute of Aquaculture and Fisheries (Instituto Nacional de Acuacultura y Pesca, INAPESCA, Formerly INP), was created more that fifty years ago to systematically conduct scientific work and fisheries research with the marine resources of Mexico. The INAPESCA is responsible of providing the scientific bases for the management advice to the fisheries authorities in México and has stablished along its coastal states, in both, Pacific and Gulf of Mexico, 14 regional fisheries centers (CRIPs) which are the centers and laboratories in charge of data collecting, sampling, monitoring and assesment of the main fisheries and aquaculture activities on a regional scale. Since 1992, the INAPESCA incorporated to this effort, the work of the National Tuna-Dolphin Program (Programa Nacional de Aprovechamiento del Atún y Protección del Delfín, PNAAPD), which closely monitored and study the tuna fishery of its purse seine and longline national fleets. The data here reported is based on the combined efforts from these different and unified groups.

BILLFISHES

Billfish retained catches in recreational fisheries of Mexico: 1990 – 2018

Fisheries on billfish in the Pacific Mexican EEZ has a more than fifty years history where both, recreational and commercial fleets have gotten benefits. Origins of recreational fisheries started by 1930, when US-anglers aboard their own boats used to come to Mexican waters, mainly near Cabo San Lucas and La Paz, off the southern Baja California peninsula (Talbot and Wares 1975). As communication ways developed another sites as Guaymas, Mazatlan and Acapulco became attractive centers for anglers (mainly US citizens) who lacked private vessels and could access to the Gulf of California and the southern Mexican Pacific coast. Nowadays, most recreational fleets concentrate at the mouth of the Gulf of California, just in the proximity of the main population center of striped marlin in the eastern Pacific, whereby recreational fisheries depend to a large degree on the abundance of this species in the region. Despite the eight decades long history, it was until 90's beginning that recreational fisheries in Mexico had a noticeable effort and catch increment (Figure 1). In the other side, commercial exploitation, started after Japanese longline fleets expanded their fishing grounds to the Eastern Pacific at the end of 50's, around the equatorial fringe until 10° N. In 1963, the fleets expanded to the north reaching the vicinity of southern Baja California peninsula, where catches of striped marlin, as well as sailfish and swordfish, were abundant even as much as tuna catches (Kume and Schaefer, 1966; Talbot and Wares, 1975).

By 70's decade, Mexico decreed its own EEZ while a transition to Mexican fleets focused on tuna, shark and finfish occurred and billfish were an important proportion of incidental catches. In 1983, it was decreed a 50 nautical miles fringe contiguous to the coastal line, where billfish along with dolphinfish and roosterfish, were reserved for recreational fisheries. In 1984, the first commercial permits were issued for billfish in Mexico, and striped marlin composed most of the catches. In 1987, two additional exclusion areas were implemented where commercial billfish fishing was not allowed. One of them is at the mouth of the Gulf of California (which extends

northward, just along the western coast of Baja California peninsula) and the other is at the Gulf of Tehuantepec (figure 2). By 1991, billfish commercial permits were not issued anymore and those fleets focused to spearfish commercial fishing. Eventually, most of the vessels turned to shark fishing, so that billfish (other than spearfish) is only incidentally caught by these fleets since the beginning of 90's.

Data Sources

Since 1987 INAPESCA through the Monitoring Program for Recreational Fisheries, systematically collects catch and effort records of recreational fleets operating in three sites: Cabo San Lucas and Buenavista in Baja California Sur and Mazatlan in Sinaloa. Because we have no access to the whole fleets, total catch in each site was estimated with the next equation:

$$C_{TOT} = CPUE_{reg} \cdot \hat{f}$$

where C_{TOT} is the estimated total catch in a specific month at one particular site; $CPUE_{rec}$ is the mean catch rate of those vessels recorded during monthly sampling at each site and $\hat{f}$ is the total effort in number of trips in the same month at the same site. Effort from Cabo San Lucas, was obtained from monthly records of the Port administration; when these records were not available, $\hat{f}$ was estimated with the mean number of daily trips recorded during sampling and multiplied by the number of days the port was open for fishing after Port reports. Effort from Buenavista, was estimated as the mean number of daily trips after fleets' reports, multiplied by the number of days the port was open for fishing. Effort data from Mazatlán were used directly after fleets' reports.

Estimated Retained Catches

Historical records (1990 – 2018) of recreational fleets operating around the mouth of the Gulf of California indicate multispecies composition of catches and billfish are an important proportion of them, about 21.5% in number of organisms (Figure 3). Six species account for nearly 90% of catches, two of them are billfish: striped marlin (*Kajikia audax*) (17.0%) and sailfish (*Istiophorus platypterus*) (3.4%). The other four are: common dolphinfish (*Coryphaena hippurus*) 34.5%), yellowfin tuna (*Thunnus albacares*) (29.3%), Pacific sierra (Scomberomorus sierra) (4.6%) and roosterfish (*Nematistius pectoralis*) (1.5%). Other tunids such as skipjacks and bonitas (*Katsuwonus pelamis*, *Euthynus lineatus* y *Sarda* spp.) (3.8%) and blue marlin (Makaira mazara) (1.0%) account for reaching 95% of total catch. Other species such as wahoo (*Acanthocybium solandri*), yellowtail amberjack (*Seriola lalandi*), along with a variety of sharks and demersal fish (snapper, grouper and bass) contribute with about 3.3% while other billfish such as black marlin (*Makaira indica*), swordfish (*Xiphias gladius*) and shortbill spearfish (*Tetrapturus angustirostris*) represent less than 0.1% of the catch.

This species composition figure is based on total catch in individuals number, which takes into account both catch-retained individuals (landed at harbor) and catch-released individuals. Catch and release practice in recreational fisheries is of paramount importance for billfish because it represent most of the catch records. Catch and release proportion is variable depending on the year and the species. On average the highest proportion of catch and release is found in striped marlin (~80%), followed by blue marlin (~59%), sailfish (~46%), black marlin (~51%) and

swordfish (~21%) . It should be considered, however, that little is known about survival of released individuals. The paper of Domier *et al*. (2003) is the only known document which reports an estimated survival rate of 74 – 91% for striped marlin. These results indicate that even in released individuals there is a marginal mortality, which must be added to retained catches for population variability analysis. Under this context, table 1 shows the retained catch (and landed) during 1990 – 2018

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Table 1. Annual effort, retained catch (RT) and release percentage (%R) by species in recreational fisheries from the mouth of the Gulf of California región (Cabo San Lucas, Buenavista and Mazatlan). RT in number of individuals

		Species									
	Effort	Striped Marlin		Blue Marlin		Sailfish		Black Marlin		Swordfish	
Year	(Trips)	RC	%R	RC	%R	RC	%R	RC	%R	RC	%R
1990	31,514	2,649	78.6	492	67.5	7,734	31.8	7	73.8	68	30.6
1991	35,334	3,097	79.5	442	71.2	6,953	31.0	10	68.2	34	8.3
1992	30,023	1,809	80.9	946	71.7	4,212	31.1	13	72.0	1	-
1993	29,243	2,014	81.6	687	71.9	3,596	40.4	20	74.3	1	80.8
1994	29,227	2,154	80.6	478	72.0	3,109	39.1	14	73.2	20	44.4
1995	25,306	2,452	79.5	336	72.0	2,620	42.9	7	74.6	5	71.7
1996	29,048	5,890	66.1	758	40.2	4,653	20.2	22	11.9	18	-
1997	32,625	4,525	66.0	512	31.9	3,532	47.8	31	13.5	99	-
1998	34,932	5,450	75.7	1,126	46.0	3,710	48.9	39	11.2	39	17.8
1999	40,042	4,269	74.1	987	58.0	3,797	37.8	32	29.4	54	17.6
2000	41,844	5,368	72.3	965	40.8	3,480	55.0	39	37.3	65	14.8
2001	38,034	3,489	77.4	689	55.8	2,227	41.0	17	54.1	43	-
2002	44,355	3,769	81.0	709	59.6	1,934	41.4	8	58.3	5	-
2003	47,634	4,335	79.3	514	55.6	2,543	43.4	32	31.9	7	60.0
2004	48,863	4,948	79.0	473	61.1	2,312	58.5	22	41.9	31	10.1
2005	56,767	7,646	77.1	628	59.3	2,310	55.7	16	56.6	32	17.7
2006	55,975	6,456	81.4	706	47.3	1,334	53.8	32	47.2	12	-
2007	55,453	7,896	87.5	393	55.1	1,032	58.0	12	58.6	13	26.6
2008	50,128	4,654	92.2	285	48.6	1,268	68.1	9	20.2	11	37.2
2009	43,309	3,827	89.3	316	56.4	761	71.4	12	22.6	6	-
2010	39,817	2,717	87.6	217	80.1	533	72.8	13	69.1	9	34.5
2011	38,310	3,365	79.0	302	56.3	316	84.4	14	58.8	15	-
2012	38,540	2,323	82.8	221	46.1	508	65.0	5	66.7	24	42.9
2013	39,469	11,102	72.2	297	45.2	1,677	45.9	9	38.6	4	78.1
2014	37,172	4,634	83.9	419	53.1	566	79.0	27	40.3	1	-
2015	36,879	6,008	72.5	645	58.3	1,082	72.8	12	68.4	-	
2016	37,563	8,349	32.7	192	74.2	282	33.1	5	80.4	-*	100.0
2017	41,213	2,279	73.6	278	50.9	252	32.8	6	45.4	8	-
2018	36,604	3,631	70.5	236	22.0	186	23.1	12	-	3	-

*Just one individual was caught and retained.

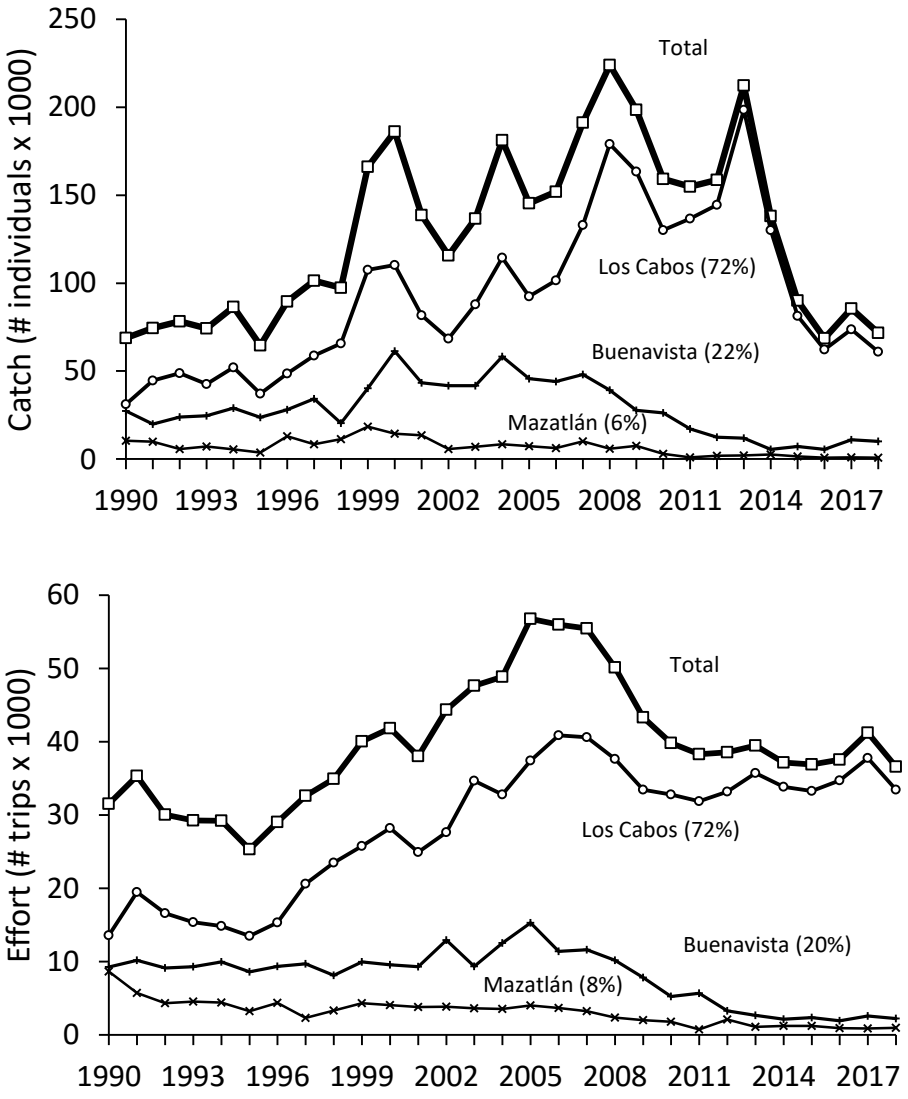

Figure 1. Total catch (retained + released) and effort of recreational fleets in the mouth of the Gulf of California: 1990 – 2018.

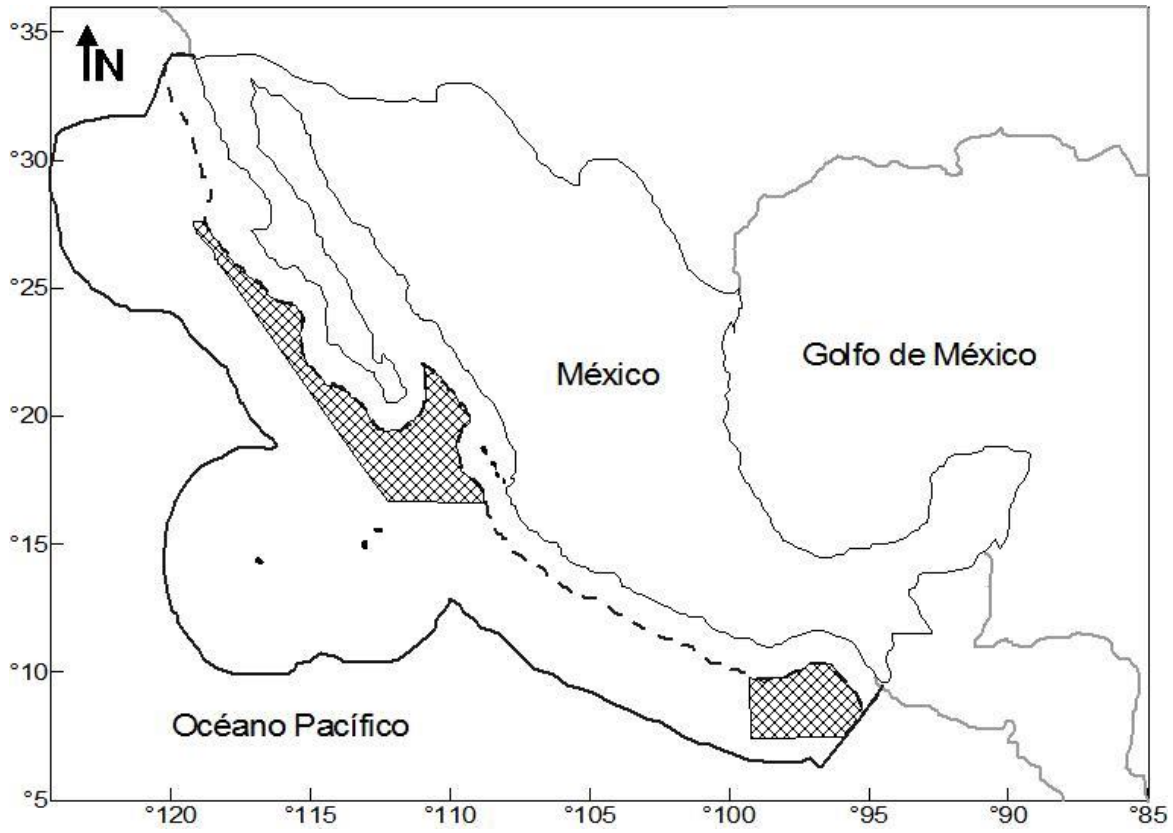

Figure 2. Exclusion zones of commercial billfish fishing. Dashed line represents the 50 nm fringe where billfish along with dolphinfish and roosterfish, are reserved for recreational fisheries. Grid areas represent exclusion zones of commercial fleets focused on billfish after 1987 Agreement (Diario Oficial de la Federación, August 28th, 1987). Continuous line points out the limit of Mexican EEZ.

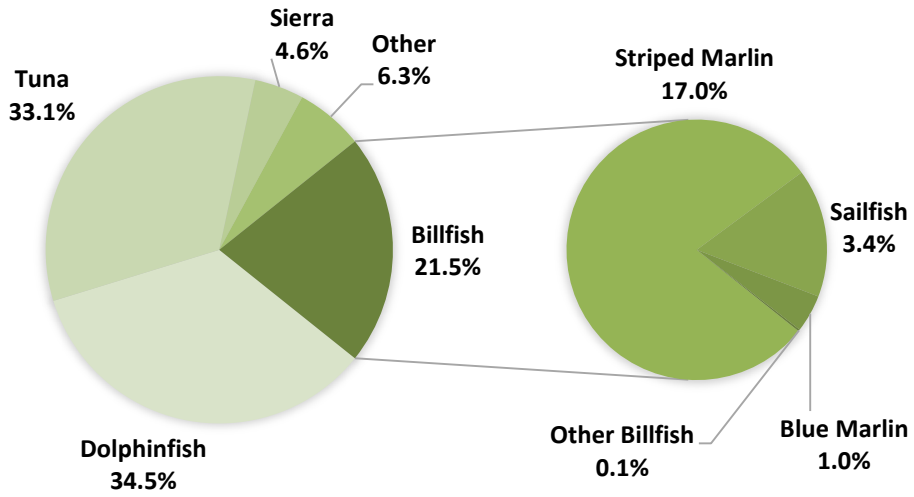

Figure 3. Historical species composition (1990-2017) of recreational fisheries catches at the mouth of the Gulf of California (Cabo San Lucas, Buenavista and Mazatlan).

SHARKS

Fisheries overview

In Mexican waters has been documented around 111 shark species (Del Mora-Flores et al., 2015) of which about forty has fishery importance, representing a valuable fishery resource for the nation (Castillo-Geniz, et al. 2008). This shark diversity along coastal and oceanic waters from the Pacific, including the Gulf of California, boost the development of artisanal, coastal and pelagic shark fisheries along the coastal states of Mexico. Shark meat (national human consumption) and fins (international trade) has been the principal products obtained from sharks. Coastal and offshore waters of the west coast of Baja California Peninsula, the Gulf of California and the Gulf of Tehuantepec represented the major shark fishery grounds in Mexico's EEZ (Castillo-Geniz, 1992, Castillo-Geniz et al. 1998).

Along the Mexican Pacific region operate a few fleets of medium-size longliners of 20 m length in average (12-34 m length) and an important number of small artisanal fiber glass boats outmotored, commonly referred as "pangas" targeting sharks. Shark landings reported for the Pacific are composed mainly for two shark assemblages. In northern Mexico shark catches are sustained in large proportion by sharks that inhabited cold and warm waters as blue, short mako and thresher sharks. In the Gulf of California and in rest of southern coast shark catches are composed mainly by tropical carcharhinid sharks (Carcharhinidae), and hammerheads sharks (Sphyrnidae). In the Gulf of California artisanal and trawler shark fisheries targeting small sharks (cazones) as smoothhounds of genus *Mustelus*, angel sharks and a diverse group of batoids. The principal fishery gears use to fish sharks in the Pacific are surface drift longlines (industrial fisheries) and a diverse array of nets, surface, bottom, fixed, drift, among others.

In the period 1976-2014, the national average annual shark production was 28,248 t, which places Mexico within the main shark producing countries of the world according to the FAO (2012).

In 2017 México's total shark production peak 42,704 t which represented 1.96% of the total fishing production in Mexico with a value of three hundred million pesos. The average annual shark production in the Pacific for the period 1976-2017 was 20,697 t. In 2017, Pacific shark production reached 34,746 t, which constituted 80.12% of the country total shark production (SAGARPA, 2017) (table 2).

Table 2. National total shark production split by region, during the period 1991-2017. Production in metric tons (t). Source: SAGARPA's Official Fisheries Statistics Yearbooks.

Year	National (t)	Pacific (t)	Gulf of Mexico (t)
1991	31018	20714	10304
1992	34543	20567	13976
1993	36309	23248	13061
1994	35355	23197	12158
1995	32575	21023	11552
1996	33755	20959	12796
1997	24220	15441	8779
1998	24383	15940	8443
1999	26164	18140	8024
2000	27443	19965	7478
2001	25695	18513	7182
2002	27443	19965	7478
2003	26610	17545	5535
2004	29580	23729	5846
2005	26948	20649	6300
2006	23205	18035	5170
2007	26984	22390	4593
2008	22877	18983	3894
2009	26807	22634	4173
2010	29774	24726	5048
2011	23867	20224	3643
2012	23669	19579	4090
2013	27011	22871	4140
2014	29436	24845	4591
2015	33490	27990	5500
2016	37661	31060	6601
2017	42705	34766	7939

Conservation and management

The Mexican Official Standards NOM-029-PESC-2006, Shark and Rays Responsible Fisheries. Specifications for its exploitation is the principal legal management instrument which regulate the exploitation of shark, rays and skates species in federal territorial waters of the Mexican United States, on the high seas and in foreign territorial waters, with vessels flying the Mexican flag, was published in February 14, 2007 in the Federal Gazzete (SAGARPA, 2007). The purposes of these Standards are to protect sharks and related species and ensure their sustainable exploitation, in addition to fostering the conservation of elasmobranch species subject to special protection. The Standards are of mandatory observation for holders of permits, concessions and authorizations pertaining to the fishery for sharks and related species; for those who catch the

aforesaid species incidentally as well as all those who carry out fishing operations on the high seas and in foreign territorial waters with vessels flying the Mexican flag. Among several regulations the NOM-029-PESC-2006 established fishing areas for all shark fisheries, delineating specific exploitation areas for shark fleets and since August 2009 the Shark Standards Rules banned the use of driftnets in all commercial shark vessels longer than 10 m. One of the most valuable contributions of the NOM-029-PESC-2006 was the implementation of the scientific observer program onboard shark vessels by the National Fisheries and Aquaculture Commission (CONAPESCA) on a voluntary basis in offshore and pelagic waters. A summary of shark fishery regulations contained in NOM-029 was compiled by Castillo-Geniz et al. (2008)

SHARKWG Collaboration

For the stock assessment of the shortfin mako, *Isurus oxyrinchus* of North Pacific (2017-2018), México participated actively with the SHARKWG presenting four work papers on commercial captures, age and growth and dynamics of the fishery and collaborating in the growth curve meta-analysis leadership by the Japanese delegation. Also Mexico provided precise information on numerical captures and size and sex structure spatially explicit from the Mexican observer program (2006-2016).

The stock assessments of blue shark (*Prionace glauca*) and the shortfin mako shark (*Isurus oxyrinchus*) from northeastern Pacific conducted by the SHARKWG of the ISC are a high priority for the National Fisheries and Aquaculture Institute of Mexico (INAPESCA). Both species compose almost the totality (97.0%) of the Mexican shark industrial catch along the west coast of the Baja California Peninsula (Godinez-Padilla *et al.,* 2016). Blue shark and mako captures, including artisanal landings, represent valuable sources of food, employment and income for local and state economies. México has provided since 2014 data on numerical catches by set and type of fishery and size structure of the captures, including spatial location of those data for both species.

During 2018 the Mexican delegation of the SHARKWG participated in the final workshop to carry on the last update of the stock assessment of the shortfin mako shark from north Pacific. The workshop was hold during April 10-16, at NOAA Fisheries Southwest Fisheries Science Center, La Jolla, California, USA. Mexico presented as the working paper ISC/18/SHARKWG-2/04 a preliminary demographic analysis of *I. oxyrinchus* captured in Mexican waters (Mondragon-Sanchez *et al.*, 2018). In the lack of consistent historical catch and effort series of the shortfin mako, in number and weight was built a first demographic model to assess the vulnerability of the stock to a different fisheries mortalities scenarios. The model used new available information on age and growth from shortfin makos from the region, as well as catch composition. Numerical catches were obtained from the Mexican observer's program on board industrial shark fishing vessels during the period 2006-2017. The basic demographic parameters were estimated using life tables and age-based matrices. Elasticity matrices were used to determine the contribution of each age group to the population growth rate. This first demographic approach indicated increasing population rates under natural conditions for different scenarios of longevity and breeding seasonality. The juveniles produce the biggest change in population growth rate, followed by the adult stage. Because the Mexican surface longline fisheries has been fished mainly shortfin mako juveniles from 2-4 years, it can be

observed that the contribution to *r* by these individuals is considerably lower than that from the rest of the juveniles and adults. Regarding the recovery potential observed for *I. oxyrinchus* in the Mexican Pacific Ocean, it should be considered that as other long-lived, slow-growing with low fecundity and productivity species, mako sharks are highly susceptible to overfishing if no adequate management measures are implemented.

With the beginning of the new stock assessment (update) for the blue shark of the North Pacific programmed for 2019-2020 the Mexican Delegation has already compiled data on numerical captures and size and sex structure spatially explicit from the Mexican observer program. During 2019 Mexico has provided data from 5,913 sets observed between 2006 and 2018 and share data on size and sex of 76,603 blue sharks caught in Mexican Pacific waters.

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TUNAS

In this region the Mexican fleet concentrates mainly in the yellowfin (Thunnus albacares), which is the prime target tuna species. The Mexican tuna purse seine fishery is one of the largest in the (ETP) since the mid 1980's. YFT represents for its large volumes the main component of the catch by Mexico. Other tuna species which are also caught, but contrastingly in lower proportions are: the skipjack, (Katsuwonus pelamis), the black skipjack (Euthynnus lineatus) and more recently, in northerly zones of the Mexican EEZ, the bluefin (Thunnus orientalis) which is targeted by some vessels and sporadically the albacore (Thunnus alalunga). The fishing operations of the Mexican purse seine fishery comprise a vast area in the EPO, (figure 4).

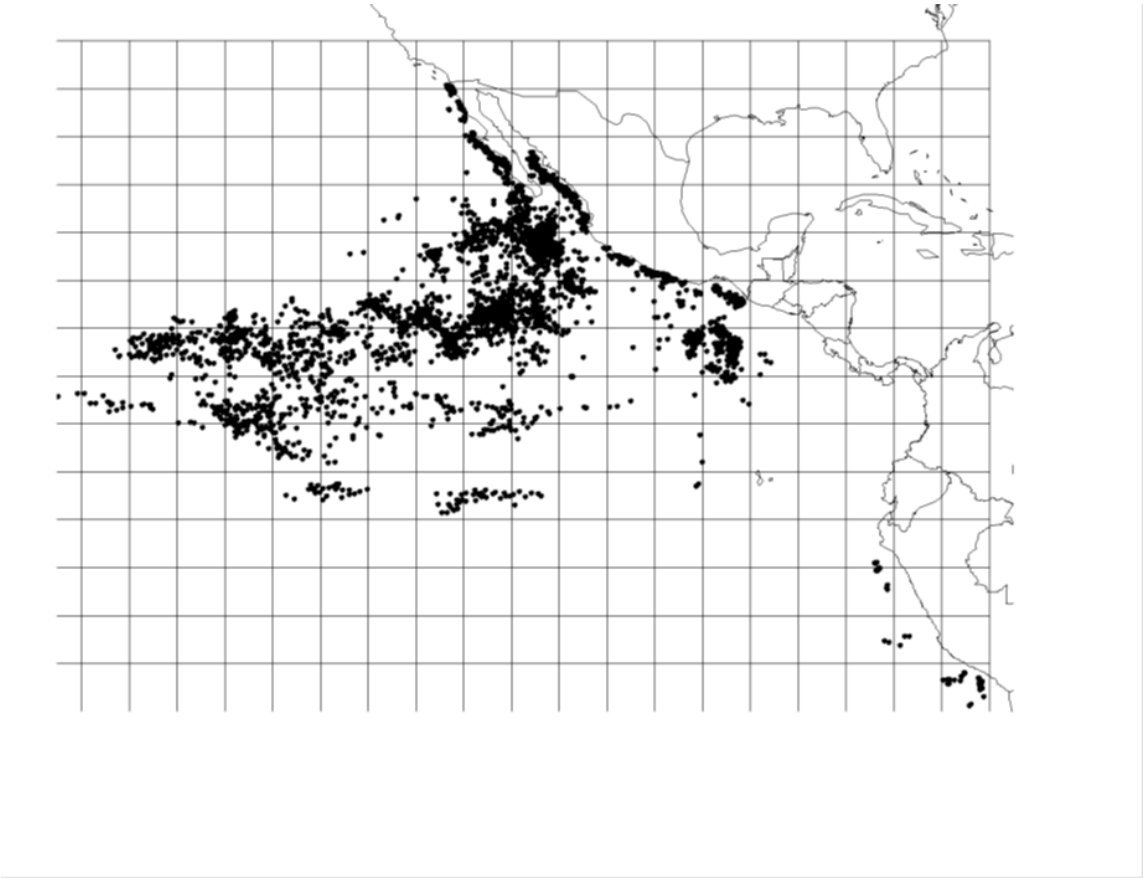

Figure 4. Fishing grounds of the Mexican purse seine fleet. 2017

The recorded levels of tuna catches in the EPO area by the Mexican fleet from 1980 through 2018 are shown in figure 5.

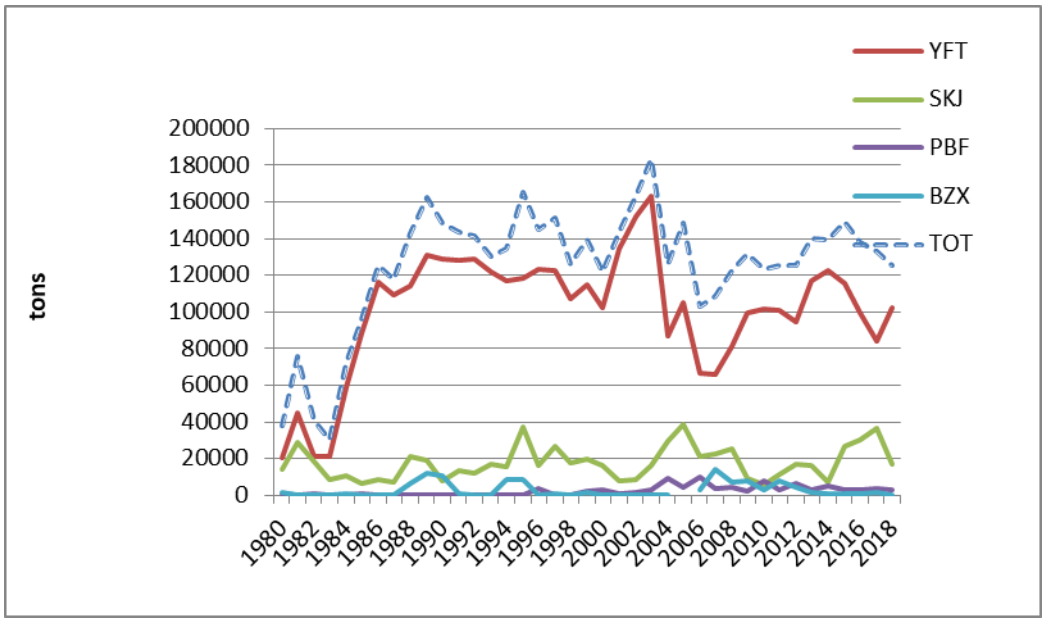

Figure 5. Mexican tuna catch of yellowfin tuna (YFT), skipjack (SKJ) and bluefin tuna (BFT), 1980-2018

The total tuna landings of Mexico in 2003 were 183199 mt. Value which represents the highest historic record for this fishery. Comparatively, the lowest recorded capture in this fishery during recent years was in the 2006 season, with only 102472 mt., value which is closer to the 1980's development phase. After 2008 catch levels recovered. The fleet has compensated partially its catches primarily with skipjack.

These high consistent reported catches are the result of the combination of the fishing experience and performance of the fleet as well as the effect of high recruitments in previous years and are not related with any significant increase in the fishing effort or a greater expansion of its carrying capacity during the corresponding years. Lower catches in 2006 and 2007 are probably related to a decrease in population levels of yellowfin tuna (lower recruitment) and excessive catches of juvenile tunas in coastal areas in the EPO. In 2018 catches are improving probably due to higher recent recruitments.

The purse seine fleet is subdivided in purse seine vessels, most of them with observers on board all tuna fishing trips and a small quantity of pole and line vessels (Table 3). The whole fleet is quite stable in number, composition and carrying capacity since the 1990´s.

Yellowfin tuna always has been the primary catch, and skipjack is always second in volume. Other tuna species have high values because the fleet has compensated lower yellowfin catches with other tunas, basically with skipjack but a slight increase is related also with Bluefin tuna catches (Table 4).

Table 3. Size, composition and carrying capacity of the active Mexican tuna fleet from 2007 to 2018, in EPO and ISC area.

YEAR	No. of active tuna boats	No. of m PSeiners > 400 m3	No. of PSeiners <u>< 400 m3</u>	No. of active Bait Boats
2007	**55**	**42**	**11**	**2**
2008	**49**	**39**	**8**	**2**
2009	**46**	**38**	**6**	**2**
2010	**42**	**36**	**3**	**3**
2011	**43**	**38**	**3**	**2**
2012	**45**	**39**	**3**	**3**
2013	**43**	**37**	**3**	**3**
2014	**47**	**42**	**3**	**2**
2015	**47**	**42**	**3**	**1**
2016	**47**	**42**	**3**	**1**
2017	**51**	**46**	**5**	**0**
2018	**53**	**48**	**5**	**0**

Table 4. Total tuna landings of YFT, SKJ ALB by the Mexican fishery (2005-2018)

YEAR	YFT	SKJ	ALB	PBF
2005	113279	32985	0	4542
2006	68644	18655	109	9806
2007	65834	21970	40	4147
2008	85517	21931	10	4407
2009	99157	9310	17	3019
2010	101523	6090	25	7746
2011	102887	8600	0	2731
2012	93686	18259	0	6668
2013	113619	17185	0	3154
2014	120986	8777	0	4862
2015	106188	23497	0	3082
2016	93904	13286	0	2709
2017	84470	36412	0	3643
2018	101957	16717	0	2840

Bluefin tuna

All the fishing zones for bluefin tuna used by the Mexican fleet are located in the Northwest side of the Baja California peninsula, inside the ZEE of Mexico (figure 6), closer to the ranching locations in recent years. Recorded catches of PBF are registered from March to September, time

in which the transpacific migration of this stock is closer to the Mexican Pacific coast, due to oceanographic factors. Sea conditions together with the presence of the specie permitted the development of this new fishery predominantly related to ranching activities in the Mexican Northwestern coastal area. Temperature is an important factor defining areas were PBF is to be found. In recent years fishing season started later (May-June)

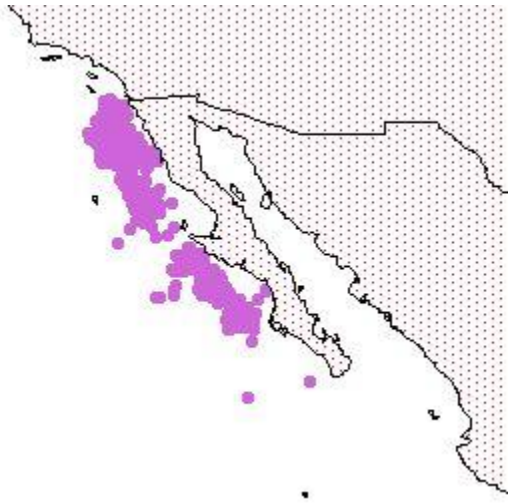

Figure 6. Fishing Zone for bluefin tuna in the Northwest region of Mexico

The time series of bluefin tuna captured by the Mexican tuna purse seine boats from 2005-2018 is presented in previous table 4. This catch represents only a very small proportion of the total tuna caught by the Mexican. This represents a small proportion of the Mexican tuna catch, although very valuable. The 3,700 mt. reported in 1996 was the first historic highest record for this fishery and the first year bluefin tuna has been targeted by the fleet. Again, in 2004 and 2006 new records were established for this tuna specie in Mexico. In 2007 the catch returned closer to the average. In 2009 due to the international economic crisis many companies did not operate and catches were below average. In 2010 catches increased again and since 2012, management measures were implemented in IATTC area limiting the PBF catch. The catch in the Eastern Pacific nevertheless is below the historic highs observed in the 1960's and 1970's. The information provided makes clear that fishing for bluefin has not being a foremost significant activity in Mexico for many years. It also shows that even in some fishing seasons there were no captures on this stock, or those were only of low levels. Therefore, it is clear that fishing bluefin in Mexico was considered only incidental. However, more recently, in the years (1996-to present time) there has been a greater interest devoted to this species, mainly for the ranching activities developed in the Northwest region of Mexico.

The catches of bluefin for ranching are performed only with commercial purse seiners (normally searching for YFT) with a deeper purse seine net. Bluefin tunas are transferred from the purse seine net to "transfer" nets then to the enclosures and fattening nets located in northern Baja California peninsula. In recent years all catch has been transferred to farms in baja California.

There is also a US sport fishery that operates in Mexican EEZ that is reported by the US.

Effort

There were four purse seine vessels involved in PBF catch in 2018 and 2019 only.

Ranching Activities

Ranching activities started in 1996 but fully developed until 2001. Catch before 2012 (quotas implemented since that year) have been variable, making evident that oceanographic conditions and the eastern distribution of the specie are limiting factors for the Mexican bluefin fishery. In 2005, 2006 an estimated 80% of the catch was transported to the ranching companies and the other 20% went to the Mexican market. In recent years, basically all PBF is used in ranching activities. This represents an economic incentive for the Mexican tuna fishery and has a regional economic impact especially in northwestern Mexico.

The size composition of the PBF catch for farming is obtained from stereoscopic cameras that are used during transfer operations. Information is available, used to estimate size composition of the catch and shared with ISC as well as IATTC.

Management

Management of the tuna fishery is done within the framework of the IATTC. For tropical tunas the main aspect of regulation is a time closure and for PBF a Catch quota.. The catch of PBF is closely monitored by 100% scientific observer's coverage on board all the fishing activities (both a national and IATTC observer programs). All information is reported and shared weekly and based on the quota and catch amount information is reported daily to ensure a quick response from managers and timing of the closure season.

Research

Since 1998 the INAPESCA and the PNAAPD have also organized an annual scientific meeting in Mexico to review the research activities developed by Mexican and other scientists. These studies are related with tunas, large pelagic and other oceanic species. Available information of those scientific meetings could be obtained directly from the authors listed in the journal "El Vigia" of the PNAAPD (see www.fidemar.org) that lists the abstracts every year, or from the INP-PNAAPD sources. That information is not a complete list of all research performed in Mexico related to those fishes and fisheries.

Mexico is participating in Close Kin sampling program. We have stored 750 tissue samples from 2016, 2017 and 2018 catches. The 2019 sampling has not yet started.