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Annual Report of the Republic of Ecuador to SC11 2023 - Jack Mackerel

Republic of Ecuador

INSTITUTE FOR AQUACULTURE AND FISHERIES RESEARCH (IPIAP)

ECUADOR ANNUAL REPORT: JACK MACKEREL IN ECUADORIAN WATERS, 2022

1. INTRODUCTION

Small pelagic fishery is one of the most important income to the country in continental Ecuadorian platform. Thread herring (*Opisthonema* spp.), chub mackerel (*Scomber japonicus*), Pacific anchoveta (*Cetengraulis mysticetus*), Frigate tuna (*Auxis* spp.), Round herring (*Etrumeus teres*), sardine (*Sardinops sagax*), anchovy (*Engraulis ringens*) and jack mackerel (*Trachurus murphyi*) are the species caught by the purse-seine vessels. The product, depending on the species, is mainly intended for the production of fishmeal, followed by canning and direct human consumption (fresh – frozen).

This report presents biological and fishing information on jack mackerel, collected for the small pelagic fish monitoring program of the Institute for Aquaculture and Fisheries Research (IPIAP) (before National Institute of Fisheries), when this resource is available in Ecuadorian waters.

2. FISHING ASPECTS

a. FLEET

The purse seine fleet operate 20 to 22 days in month, during the period called new moon; fishing trips are daily and the activity begins from 20h00 to 05h00 hour. For study and research purposes, IPIAP classified the fleet into four different class, related to Total Register Tonnage (TRT): Class I belongs to independent fishermen, the activity is close to the coast. The class II, III and IV belong to fisheries industries, and catch mackerel, *Etrumeus teres*, *Auxis* spp., jack mackerel and occasionally *Cetengraulis mysticetus* and *Opisthonema* spp.; It should be noted when Jack Mackerel is available in Ecuadorian waters, vessels class III and IV can capture this species (related to operational activity, 15 miles), while it is found near the coast, class I and II vessels can capture this species.

b. FISHING ZONES

When Jack Mackerel (JM) is available in Ecuadorian waters, the principal fishing zones were recorded in the Gulf of Guayaquil and around Peninsula de Santa Elena; catch information of JM is recorded in Research data base since 1990 (Figure 1).

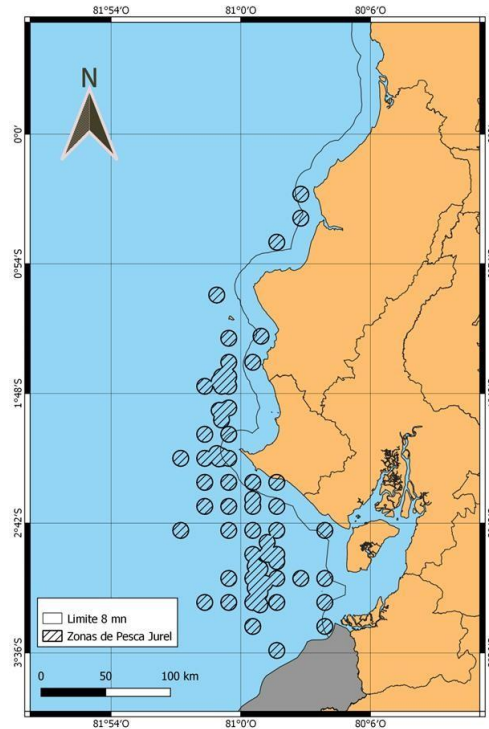


Figure 1. Historical distribution of jack mackerel catches in Ecuadorian waters

c. LANDINGS

Jack mackerel catches are associated as a secondary species in the small pelagic fishery. In 1990 jack mackerel landings was 4 144 t and 1991 a total of 45 313 t; fishing records of this species were variable in subsequent years, reporting in 1995 up to 174 393 t. For the last years the catch records have been minimal in relation to the previous years (Table 1); For the year 2022 no jack mackerel landings have been reported by the purse seine fleet.

Table 1. Historical catches (t) of Jack Mackerel in Ecuadorian Platform.

| Years | Jack Mackerel |
|-------|---------------|
| 1981 | - |
| 1982 | - |
| 1983 | - |
| 1984 | - |
| 1985 | - |
| 1986 | - |
| 1987 | - |
| 1988 | - |
| 1989 | - |
| 1990 | 4144 |
| 1991 | 45313 |
| 1992 | 15022 |

| | |
|------|---------|
| 1993 | 2673 |
| 1994 | 36575 |
| 1995 | 174393 |
| 1996 | 56782 |
| 1997 | 30302 |
| 1998 | 25900 |
| 1999 | 19072 |
| 2000 | 7122 |
| 2001 | 133969 |
| 2002 | 604 |
| 2003 | - |
| 2004 | - |
| 2005 | - |
| 2006 | - |
| 2007 | 927 |
| 2008 | - |
| 2009 | 1934 |
| 2010 | 5201,4 |
| 2011 | 75519,6 |
| 2012 | 106,1 |
| 2013 | 3666,4 |
| 2014 | 9,1 |
| 2015 | 301 |
| 2016 | 24,3 |
| 2017 | 76,8 |
| 2018 | 51,7 |
| 2019 | 2,4 |
| 2020 | 13,9 |
| 2021 | 0,7 |

3. BIOLOGICAL ASPECTS
a. SIZE STRUCTURE

The size structure ranges from 14 to 66 cm TL, denoting the presence of three groups of size classes (19 - 31, 32 - 51, and 55-65 TL), as well as two strong modal groups (28 and 29 cm TL) (Figure 2).

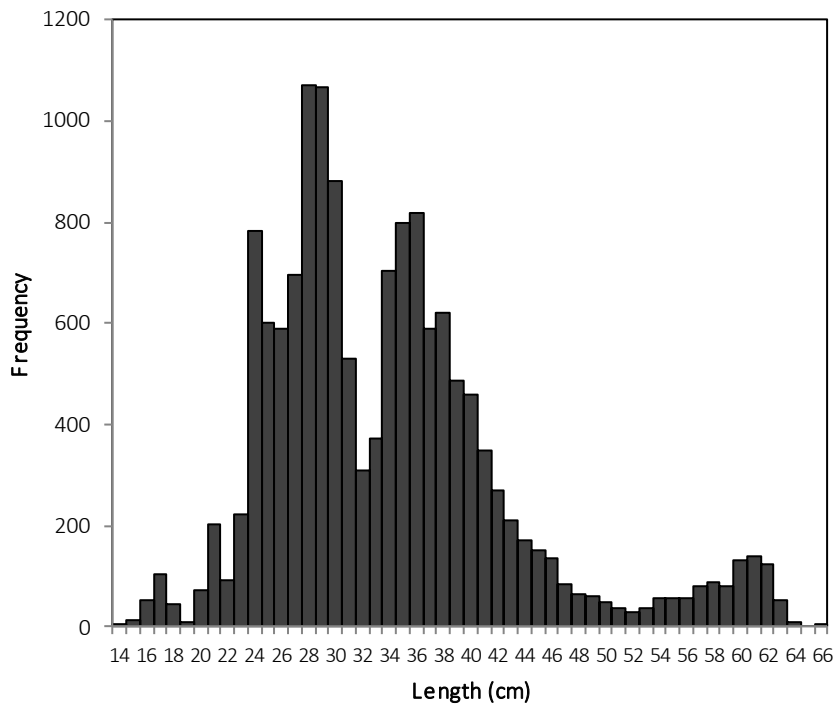


Figure 3. Historical Length composition of Jack Mackerel, registered in Ecuadorian Waters

In order with the studies of biomass, abundance and distribution of the main species of small pelagic fish in the continental Ecuadorian platform, from June 27 to July 12 of 2022 was carried out the 6th hydro acoustic prospecting survey; Jack mackerel was reported, as well as biological samples were taken (15 organisms) (Figure 3).

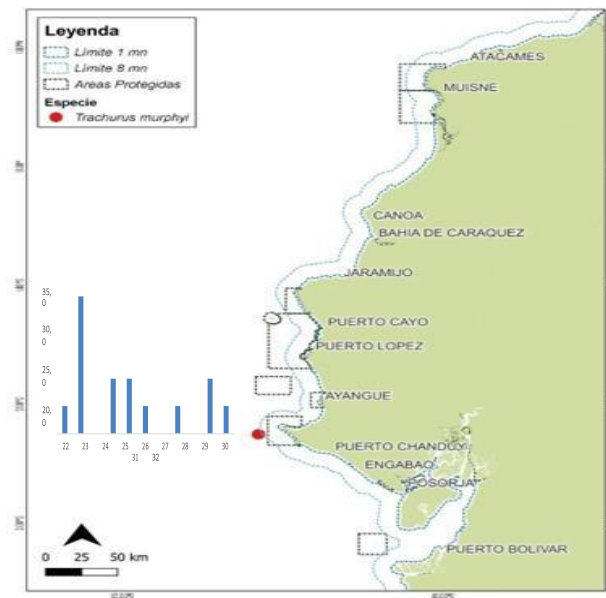


Figure 3. Jack Mackerel catches reported in the hydro acoustic research survey, in continental Ecuadorian platform, 2022.