

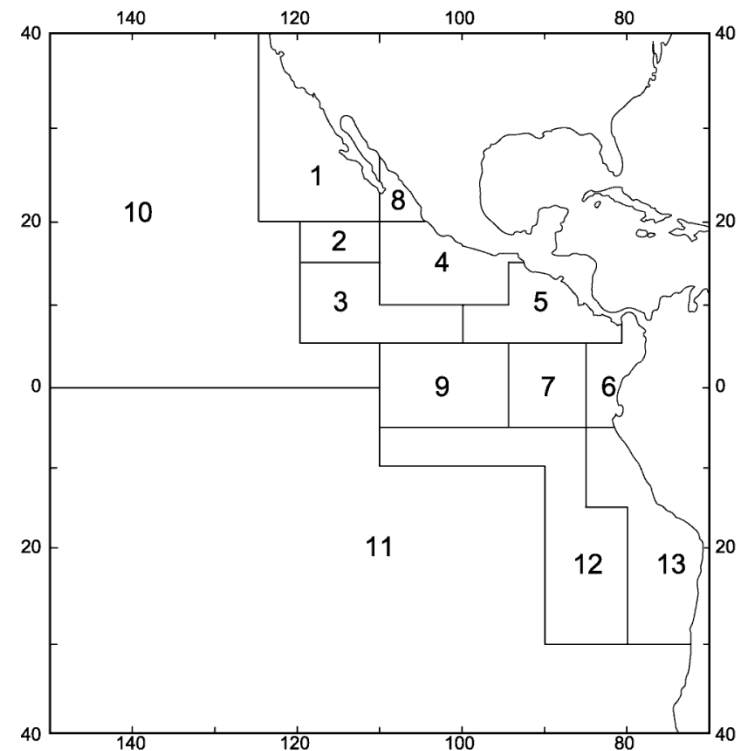
# The IATTC Program For In-port Sampling of Tuna Catches

**SAC-01-11**

- The objective of the IATTC port-sampling program is to sample the tuna catches from the surface fishery (purse-seine, pole-and-line) in the eastern Pacific Ocean for:
  - length-frequencies
  - species composition
- Samples are collected during vessel unloading in the ports of Ecuador, Mexico, Panama and Venezuela.

- To obtain a representative collection of samples, the surface fishery is divided into categories ('strata'):
  - Area
  - Month
  - Mode of fishing

	Type of vessel	Type of set
	pole-and-line	n/a
	small purse seiner	floating object
	"	unassociated
	"	dolphin
	large purse seiner	floating object
	"	unassociated
	"	dolphin



- The same sampling protocol is used to collect samples from each stratum.
- A stratified two-stage sampling protocol is used:
  - vessel wells are the first stage, and
  - fish within a well are the second stage.

- Sampling vessel wells
  - Logistics dictate that vessel wells be sampled opportunistically as time and availability permit.
  - Observer data or vessel logbooks are used to determine which wells can be sampled.
  - A well is only sampled if all the fish in the well were caught in the same area, month and by the same fishing mode (i.e., were from the same stratum)

- **Sampling fish within a well**
  - Individual fish within a well are sampled as the catch is unloaded.
  - A number of fish of each species (ideally 50) are measured for length (forklength).
  - Independent of the measured fish, several hundred fish are counted for species composition.
  - Samplers are instructed not to sample fish from the top 10% or bottom 10% of the well.
  - Individual fish are sampled from an opportunistically established starting point, as circumstances permit (a truly random sample of fish is not logistically feasible).

- The details of sampling fish (measuring, counting) from a well depend on the stratum characteristics and the assumed (actual) catch composition of the well.
- There are two different unloading scenarios:
  - Wells for which the catch is not sorted prior to sampling ('non-sorted' wells), and
  - Wells for which the catch is sorted by weight category/species before it can be sampled ('sorted' wells).

- **Sampling details for non-sorted wells**
  - Begin by measuring fish until 25 fish of one species have been measured.
  - Count and identify by species 50-200 tunas;
  - Return to measuring fish until 50 fish of one species have been measured.
  - Return to counting and identifying up to 200 more fish;
  - Return to measuring fish until 50 fish of each species in the well have been measured.
  - If there are very few of the secondary (tertiary) species present or if species composition changes during sampling, count and identify up to an additional 200 fish.



- **Sampling details for sorted wells**
  - If fish have been separated by species and weight category prior to sampling, measure 25 fish for each group.
  - If fish have been separated by species, but not weight category, measure 50 fish of each species.
  - If fish are sorted by weight but not species, measure and count (identify to species) fish within each size group.

# Summary sampling statistics for 2009

<b>2009</b>	Number of wells sampled	Number of fish measured		
		Yellowfin	Bigeye	Skipjack
Quarter 1	290	5,902	1,386	10,333
Quarter 2	243	6,999	3,307	6,537
Quarter 3	170	5,370	2,695	4,617
Quarter 4	151	5,348	2,294	5,322
<b>TOTALS</b>	<b>854</b>	<b>23,619</b>	<b>9,682</b>	<b>26,809</b>