

Scientific Data Needs:

Catch & Effort Data Needs for Stock Assessments

Coverage: Currently, the Large Pelagic Survey (LPS) provides good coverage on bluefin tuna and other HMS catch and effort data from Maine to Virginia during the June to October period that corresponds to the recreational fishing season in the northeast. However, greater coverage is needed throughout the southeast region (North Carolina through Texas); such coverage would need to include additional months since recreational fishing for HMS is not season-limited in the southern areas.

Currently, MRIP surveys such as the Access Point Angler Intercept Survey (APAIS) and the Fishing Effort Survey (FES) provide estimates of HMS catch and effort in the South Atlantic and Gulf of Mexico regions, but these surveys produce low precision estimates as they do not target offshore access sites like the LPS does.

To improve coverage in the southeast, it will be necessary to stratify sampling time and location to ensure adequate and representative observations of HMS directed trips. Trip selection should also be unbiased (e.g., no tendency to select trips with greater or lesser catch).

Resolution: Area stratification minimally needed to assign HMS catch and effort to ICCAT statistical areas, which vary by species (35 degree N is relevant dividing line for the United States for bluefin tuna), is needed to support ICCAT stock assessments, but finer resolution is desirable when possible. Estimates of total effort, using an appropriate unit of effort (hours, hook-hours, days), at 1X1 or 5X5 degree resolution (spatial: latitude/longitude) is desirable for ICCAT reporting, but not presently available.

Precision: Percent standard errors (PSE) are a measure of precision, or the level of variability, presented with all MRIP and LPS estimates. Highly precise estimates (PSE < 10) are desired for annual estimates by species for all HMS, and by size class for bluefin tuna to support stock assessments. However accomplishing this level of precision is challenging for all HMS as many are rare event species in the MRIP surveys even the LPS.

Timeliness: Updated cumulative estimates by month are desired for all HMS.

CPUE: Fishing effort related data enabling the standardization of **catch per unit effort** (CPUE) estimates is essential to supporting HMS stock assessments. Specific data desired per observation for these calculations include:

1. Vessel type (e.g. charter, private, party)
2. Units of effort – anglers, lines, hooks, hours fished
3. Target species, regardless of whether the species is successfully caught on a given trip (effort assigned to target, if possible, if multiple on a trip)
 - a. Gear/Fishing strategy (troll, chunking/chumming, deep-drop etc.
 - b. Bait (type, live/dead, artificial)
 - c. Other techniques that may affect catch rates (kites, etc.)
4. Location of fishing (latitude/longitude [preferred], fishing spot [“Mud Hole”, “Cigars”], or as small an area assignment as possible), plus distance from shore

5. Date of fishing

Biological Data Needs for Stock Assessments

Hard part collection (otoliths, spines, etc.) - Ongoing, representative sampling is desirable, but at the very least the capacity for periodic sampling to meet specific research needs should be implemented throughout the full HMS region. Other sampling needs include soft tissue for genetics analysis (e.g., fin clips), and reproductive organs for assessment of maturity and spawning condition. These efforts may be ongoing or to support a specific research study.

Straight fork length – or other measurement appropriate to species, such as lower jaw fork length for billfish – is preferred to support stock assessments. Curved fork length may be acceptable, but measurement type must be specified. Weight can be collected in addition to length. Sampling should be representative, and with adequate sample sizes to support stock assessment analyses (historical sample sizes have generally been low).

Management Data Needs by Species Groups
Bluefin Tuna

For quota monitoring purposes, landings data for bluefin tuna are needed to monitor 3 size category quotas: School (27” to less than 47”), Large School or Small Medium (47” to less than 73”), and Large Medium or Giant (73” or greater).



Anglers are required to report all bluefin tuna landings either directly to NOAA Fisheries via the Automated Landings Reporting System (ALRS) or through the North Carolina or Maryland catch card programs. However, reporting is not required for bluefin tuna released alive, nor do they capture comprehensive data on bluefin tuna fishing effort as reporting is only required for trips that land bluefin tuna.

Coverage: Currently, the LPS provides good coverage on bluefin tuna catch and fishing effort data from Maine to Virginia during the June to October period that corresponds to the recreational fishing season in the northeast. However, greater coverage is needed in North Carolina where a significant winter fishery has developed for trophy bluefin tuna.

Resolution: Estimates are primarily needed at the regional level - North Atlantic (Maine to Virginia), South Atlantic (North Carolina to Florida), and Gulf of Mexico (Florida to Texas) - as the Trophy quota is split between these areas.

Precision: High precision estimates are needed to support international and domestic reporting requirements for bluefin tuna. Mandatory landings reports should be exact, but LPS/MRIP estimates used to validate them and estimate under reporting should target the 10% PSE level at most for annual estimates of total catch.

Timeliness: Anglers are currently required to report all bluefin tuna landings and dead discards within 24 hours by phone or online, or through the North Carolina or Maryland catch card programs.

(to page 32)