

Data Notes and Citations

For more information: migratoryblueways.org

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Important Notes about the Data:

- This app incorporates spatial data for the entire Gulf of Mexico, the east coast of Florida, and the entire Cuban and Mexican EEZs. This extent was chosen based on data availability and to give a broad picture of life in and around the Gulf.
- Atlantic bluefin tuna is the only layer that has movement density information available through this app, as this is data we collected through our Migratory Species Conservation Project. We hope to eventually provide this movement density information for all tuna in the app, as satellite tracking data becomes more available for those species. Currently, the other 7 tuna species layers only contain presence/absence information attained from the IUCN's species distribution layers.
- Migratory timing information in this app is a rough estimation compiled from a variety of sources such as ICCAT and NOAA. These migration patterns vary per location and population. These patterns are not well understood for all of these tuna species, and the migratory timing information here may not cover all migration patterns. It will be updated and refined as more information becomes available.
- U.S. Regulations – additional information:
 - Atlantic tunas are managed under the dual authority of the Magnuson-Stevens Fishery Conservation and Management Act and the Atlantic Tunas Convention Act (ATCA). Atlantic tuna fisheries is delegated to the National Marine Fisheries Service (NMFS), Highly Migratory Species (HMS) Management Division.
 - Regulated Tunas are Atlantic bluefin tuna (BFT, *Thunnus thynnus*), as well as "BAYS" tunas, i.e., bigeye tuna (BET, *Thunnus obesus*), albacore tuna (ALB, *Thunnus alalunga*), yellowfin tuna (YFT, *Thunnus albacares*), and skipjack tuna (SKJ, *Katsuwonnus pelamis*).
 - These regulations apply in all water of the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea.
 - Transfer at sea of Atlantic tunas is prohibited. "Transfer" includes, but is not limited to, moving or attempting to move an Atlantic tuna that is on fishing or other gear in the water from one vessel to another vessel. (Exception: An auxiliary vessel (i.e. a skiff) associated with a permitted Purse Seine category vessel may assist in routine purse seine fishery operations.)
 - **The subquotas here are from the 2015 fishing season and current subquotas can be found at the NMFS permit office website: <https://hmspermits.noaa.gov>

Definitions:

- Curved Fork Length or Fork Length (CFL or FL): tip of upper jaw to fork of tail measured along the contour of the middle of the body.
- mt: metric tons
- NOAA NMFS HMS: National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Highly Migratory Species Management Division (<http://www.nmfs.noaa.gov/sfa/hms/>)
- ICCAT: International Commission for the Conservation of Atlantic Tunas (<https://www.iccat.int/en/>)

Data Sources:

Tuna Spatial Distributions

- The IUCN Red List of Threatened Species. Version 2017-1. <www.iucnredlist.org>. Downloaded on 7 August 2017.

Tuna Observations

- Ocean Biogeographic Information System (OBIS). iobis.org
- Ramirez-Lopez K. Y A. Abad-Uribarren, 2013. Analisis de la captura incidental del atun de aleta azul por la flota palangrera mexicana en el Golfo de Mexico, 1994-2011. Collect. Vol. Sci. Pap. ICCAT, 69(2):1046-1056.

Migratory Timing

- "A Guide to Tunas of the Western Atlantic Ocean". 2009. NMFS NOAA. http://www.nmfs.noaa.gov/sfa/hms/compliance/regulations/tuna_guide_2009.pdf
- "Species Profiles – Yellowfin Tuna". 2017. Mass.gov. <http://www.mass.gov/eea/agencies/dfg/dmf/recreational-fishing/species-profiles-yellowfin-tuna.html>
- "Ocean Animal Encyclopedia: Ocean Fishes". 2017. Oceana. <http://oceana.org/marine-life/ocean-fishes>
- "Atlantic Bluefin Tuna Spawning Sanctuaries". 2007. The Pew Environment Group. http://www.pewtrusts.org/~media/legacy/uploadedfiles/peg/publications/fact_sheet/atlantic20bluefin20spawning20englishpdf.pdf
- "Fishes". 2017. Animal Spot. <http://www.animalspot.net/category/fishes>
- "Albacore Migration". 2014. NOAA Fisheries: Southwest Fisheries Science Center. <https://swfsc.noaa.gov/textblock.aspx?ParentMenuId=136&id=1174>
- "Tuna Species Guide". 2017. Atuna. <http://www.atuna.com/index.php/en/tuna-info/tuna-species-guide>

Spanish Common names

- "Peces Marinos Comerciales". 2017. Biodiversidad Mexicana. <http://www.biodiversidad.gob.mx/usos/alimentacion/peces/index.php/peces/resultado>

- Ruiz-Dura, M.F. 1993. Recursos pesqueros de las costas de Mexico: Su conservacion y manejo socioeconomico. Limusa, Mexico, 283 pp.

Fishing regulations

- International Waters
 - ICCAT <https://www.iccat.int/en/>
- United States
 - NOAA NMFS Permit Office <https://hmspermits.noaa.gov>
 - NOAA: <https://oceanservice.noaa.gov/facts/mpa.html>, <https://data.noaa.gov/dataset/habitat-areas-of-particular-concern>, <https://sanctuaries.noaa.gov/about/faqs/>
 - Gulf of Mexico Fishery Management Council. January 2017. <http://gulfcouncil.org/wp-content/uploads/Commercial-Regulations-07-17.pdf>
 - NOAA Fisheries Southeast Regional Office. http://sero.nmfs.noaa.gov/maps_gis_data/habitat_conservation/efh_gom/
 - NOAA Fisheries. Atlantic HMS Fishery Compliance Guides. <http://www.nmfs.noaa.gov/sfa/hms/compliance/guides/index.html>
 - NOAA Fisheries, Southeast Regional Office. Madison Swanson, Steamboat Lumps, and the Edges: Section 622.34 Seasonal and area closures designed to protect Gulf reef fish (a). http://sero.nmfs.noaa.gov/maps_gis_data/fisheries/gom/documents/madswan_steam_edges.txt
 - Summary of Fishery Information and Regulations for Atlantic Tuna Fisheries. 2015. NMFS Atlantic Tunas Program, NOAA. http://www.nmfs.noaa.gov/sfa/hms/species/tunas/documents/draft_tunas_regs_brochure_updated_jan2016_-_final_bft_quota_rule.pdf
 - NOAA Florida Keys National Marine Sanctuary Regulations. <https://floridakeys.noaa.gov/regs/welcome.html>
 - NOAA NMFS <http://www.nmfs.noaa.gov/sfa/hms/documents/fmp/am7/index.html>
 - NMFS NOAA. Desoto Canyon Closed Area. <http://www.nmfs.noaa.gov/sfa/timearea.htm>
 - NMFS NOAA. Federal Register Online via the Government Publishing Office. Atlantic Highly Migratory Species; Pelagic Longline Management. <https://www.gpo.gov/fdsys/pkg/FR-2000-04-26/html/00-10310.htm>
 - Electronic Code of Federal Regulations. Section 635.21 Gear Operation and Deployment Restrictions. www.ecfr.gov
- Mexico
 - LGEEPA (1998). Ecology and Environmental Protection General Law. <http://biblioteca.semarnat.gob.mx/janium/Documentos/Ciga/agenda/DOFsr/148.pdf>. Last updated January 2015.
 - Carta Nacional Pesquera (2012). National Fisheries Chart. <https://www.gob.mx/inapesca/acciones-y-programas/carta-nacional-pesquera-51204>. Last updated July 2017.
 - NOM-023-SAG/PESC-2014. Gulf of Mexico and Caribbean Sea tuna long-line fishery fleet act. http://dof.gob.mx/normasOficiales/5356/sagarpa11_C/sagarpa11_C.html

- Cuba
 - Centro Nacional de Áreas Protegidas (CNAP) and Environmental Defense Fund (EDF). 2004. https://www.edf.org/sites/default/files/3692_mpasCubaIngles.pdf
 - Trip Cuba <http://www.tripcuba.org/fishing-in-cuba>