

Metadata for data presented in:

Environmental Associations of Cownose Ray (*Rhinoptera bonasus*) Seasonal Presence
along the U.S. Atlantic Coast

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Ecosphere

Counts of individual Cownose Rays tagged with acoustic transmitters and associated with environmental data recorded in buoy regions in the Chesapeake Bay and Cape Canaveral.

Data set 1: Counts of acoustically-tagged Cownose Rays and recorded environmental data within data buoy regions in the Chesapeake Bay.

Data set 2: Counts of acoustically-tagged Cownose Rays and recorded environmental data within data buoy regions in the vicinity of Cape Canaveral.

Data Description: These data include counts of individual mature Cownose Rays detected within data buoy regions in the Chesapeake Bay, presented as all rays combined, males only, and females only, presence records for each ray group, and environmental data (sea surface temperature in °C, day of year, and photoperiod in hours of daylight) recorded on data buoys on the date of detection within the region the rays were detected within. These data were used in boosted regression tree models to identify relationships between ray presence/abundance (the response variable) and the three environmental variables (the explanatory variables). Boosted regression tree analysis was conducted using the `gbm.auto` function in the R package “`gbm.auto`” (Dedman et al. 2017). Both data sets contain the same data column headers, and the data within are described below:

Column	Description
Date	Date of detection
AllAbun	Abundance measured as the total count of individuals of both sexes detected on that date within a particular data buoy region.
MaleAbun	Abundance measured as the total count of individual males detected on that date within a particular data buoy region.
FemaleAbun	Abundance measured as the total count of individuals females detected on that date within a particular data buoy region.
AllPres	Presence of rays of either sex (1=present, 0 = absent)
MalePres	Presence of male rays (1=present, 0 = absent)
FemalePres	Presence of female rays (1=present, 0 = absent)
MeanSST	Mean daily sea surface temperature recorded at the data buoy the detections are associated with
dayofyear	Julian calendar day (1-365) of the date that the rays were detected
Hours_n	Photoperiod measured as integer hours of daylight

Literature Cited:

Dedman, S., R. Officer, M. Clarke, D. G. Reid, and D. Brophy. 2017. Gbm.auto: A software tool to simplify spatial modelling and Marine Protected Area planning. PLOS ONE 12:e0188955.