**Harnessing Citizen Science for Marine Conservation in Malta: A Comparative Analysis of GAM and MaxEnt Models in Bottlenose Dolphin Habitat Mapping**

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**Supplementary Material 1**

**a) Visual Survey Protocol**

**Platform and Personnel**

Visual surveys were conducted from a small research vessel during daylight hours under favorable weather conditions (Beaufort ≤ 3). Two experienced observers were stationed at the bow, each scanning a 90° sector ahead of the vessel. The portside observer covered the arc from 270° to 360°, while the starboard observer monitored from 0° to 90°, relative to the vessel’s heading.

**Detection and Recording**

When a sighting occurred, the observers estimated the distance and angle to the sighted animals using a handheld compass and a calibrated rangefinder stick. Sightings were recorded in real-time on standardized datasheets. Environmental data (e.g., sea state, visibility, glare, swell, cloud cover) were recorded by a third researcher every 30 minutes or upon any change in environmental conditions. Information on other marine fauna and vessel presence was also noted.

**Trackline and Effort Data**

Survey effort was continuously logged using a handheld GPS device, with waypoints and tracklines saved for post-processing and spatial analysis.

**Permits**

All research activities were carried out under permit EP 0249/24, issued by the Environment and Resources Authority (ERA), authorizing marine mammal surveys in the waters surrounding the Maltese Islands.

**b) Citizen Science Reporting Protocol**

Members of the public were invited to contribute sightings of bottlenose dolphins via a standardized reporting form.

**Required Information:**

* **Date of sighting**
* **Time of sighting (hh:mm format)**
* **Location spotted (select or specify):**
  + Pembroke
  + St Paul’s Bay
  + Għadira Bay
  + Comino
  + Ċirkewwa Marine Park
  + Gozo (North East)
  + Gozo (South East)
* **GPS coordinates of sighting (Latitude and Longitude)**

**Species Identification Confidence:**

* Were you confident they were *bottlenose dolphins*? *(Identification aids were provided through an image guide.)*
  + Yes
  + No
  + Maybe

**Group Size and Composition:**

* How many dolphins did you observe?
* Were calves present? If yes, how many?

**Optional:**

* Upload a **photo** or **video** of the sighting if available.