The following supplement accompanies the article

Untangling the origin of ghost gear within the Maldivian archipelago and its impact on olive ridley (*Lepidochelys olivacea*) populations

M. Stelfox*, M. Bulling, M. Sweet

*Corresponding author: martin@oliveridleyproject.org

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Supplementary Material

Table S1. Ghost net data collected by citizen scientists between 2013 and 2017 in the Maldivian Archipelago (excluding turtle present/absent). Net characteristics were reported via an online data portal hosted on the Olive Ridley Project (ORP) website developed by ORP and the International Union for Conservation of Nature (IUCN) https://oliveridleyproject.org/report-a-ghost-net. Independent variables were all treated as dummy variables in all analyses.

Variable	Description	categorical/numerical	Levels	Range
Season	Split into North East Monsoon (NE Monsoon) - Currents flow from east to west (November - April) and South West Monsoon (SW Monsoon) currents flow from west to east (May - October)	Categorical	2	NA
Floats	Floats in the form of plastic bottles or bouys attached to the net.	Categorical	1	NA
Net colour		Categorical	5	NA

	Net colour includes green, black, blue, white and rare (yellow, red and orange)			
Number of strands	Number of fibres that make up a single twine. Scale 1-5	Numerical	5	1-6
Material	Nets were either made from natural fibres such as coconut and cotton and categorised as "natural" or made from synthetic fibres such as plastics and labelled "synthetic"	Categorical	2	NA
Net construction	nets could be one of three categories; monofilament, multifilament or braided twine.	Categorical	3	NA
Twine diameter	diameter of twine in mm	Numerical	NA	0.1 - 15mm
Mesh size	Distance between two knots that make up the mesh. Knotts stretched before measurements taken in mm	Numerical	NA	10 - 9700mm

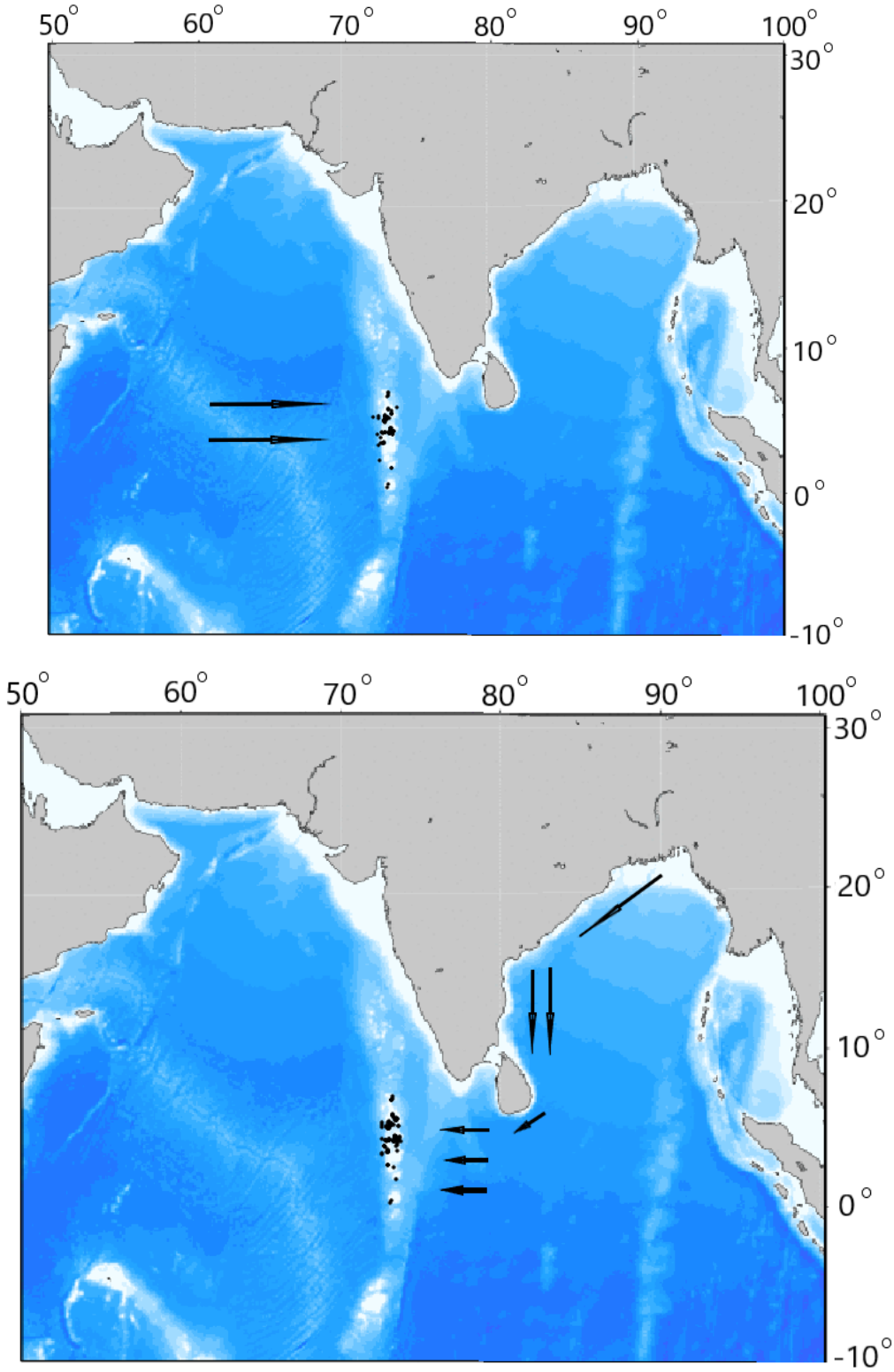

Figure S1. Ghost nets found during the south west monsoon (n = 315) (Top) and north east monsoon (n = 437) (Bottom) in the Maldivian Archipelago. Arrows represent general direction of surface ocean currents.

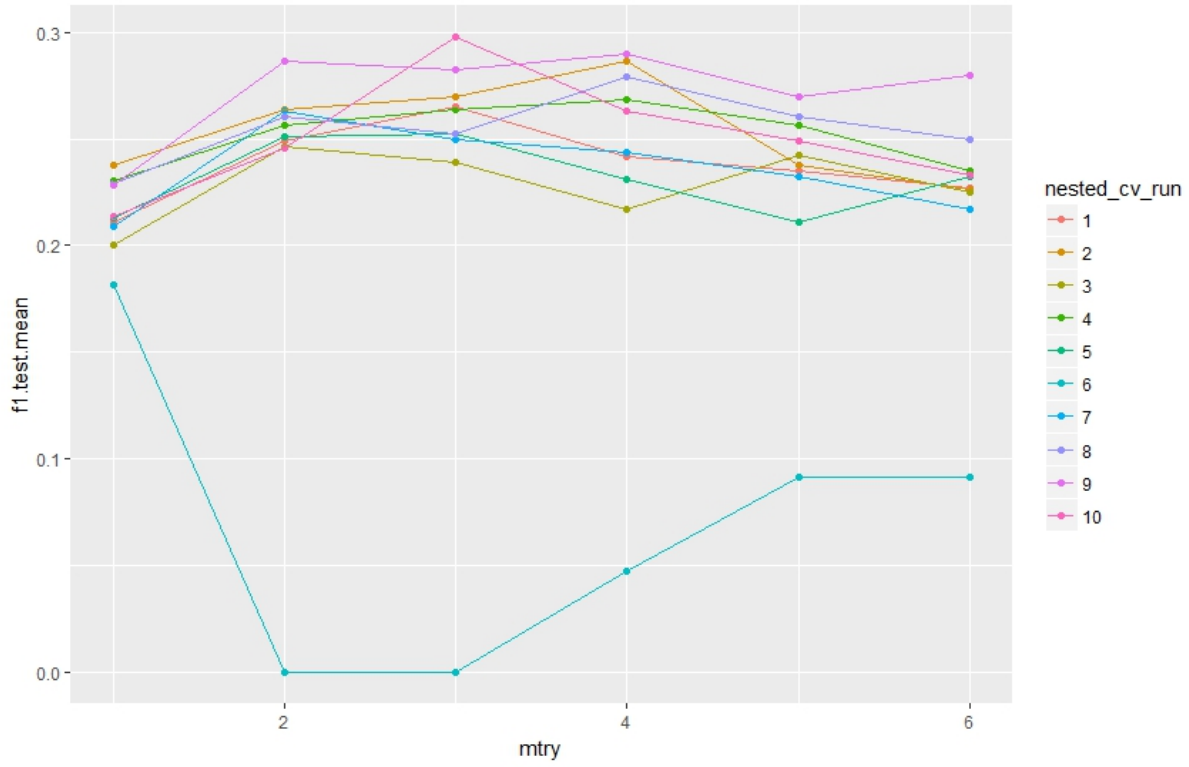

Figure S2. Learner performance (mean F_1 score) plotted against the values of m_{try}. The analysis was performed within a nested cross validation with 10 nested cv runs (colour coded key). Explanatory variables included only the top 6 performing variables identified by the cforest; floats, monsoon season, mesh size, colour (blue) and twine diameter.

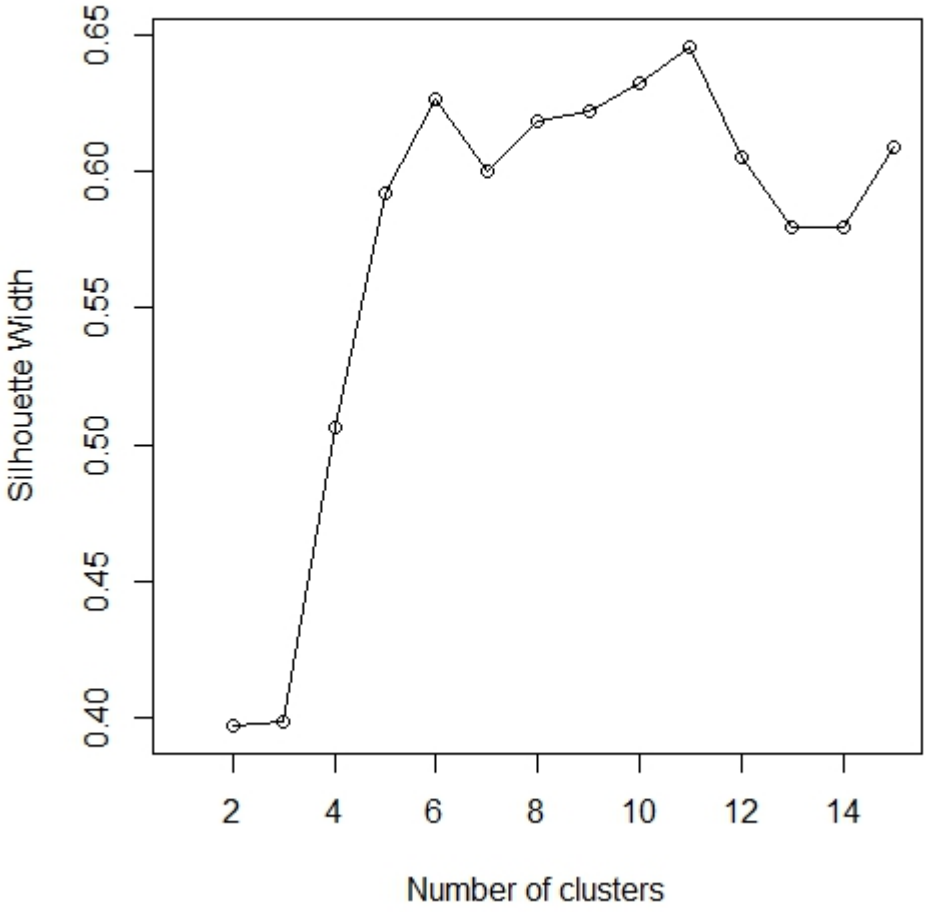

Figure S3. Silhouette width against the number of clusters (ghost net clusters). Clusters identified based on minimised mean dissimilarity of a ghost net and the other ghost net in the corresponding cluster. The best number of clusters are determined by the highest silhouette width, in this case 0.65 which highlights 11 clusters best describe the data.

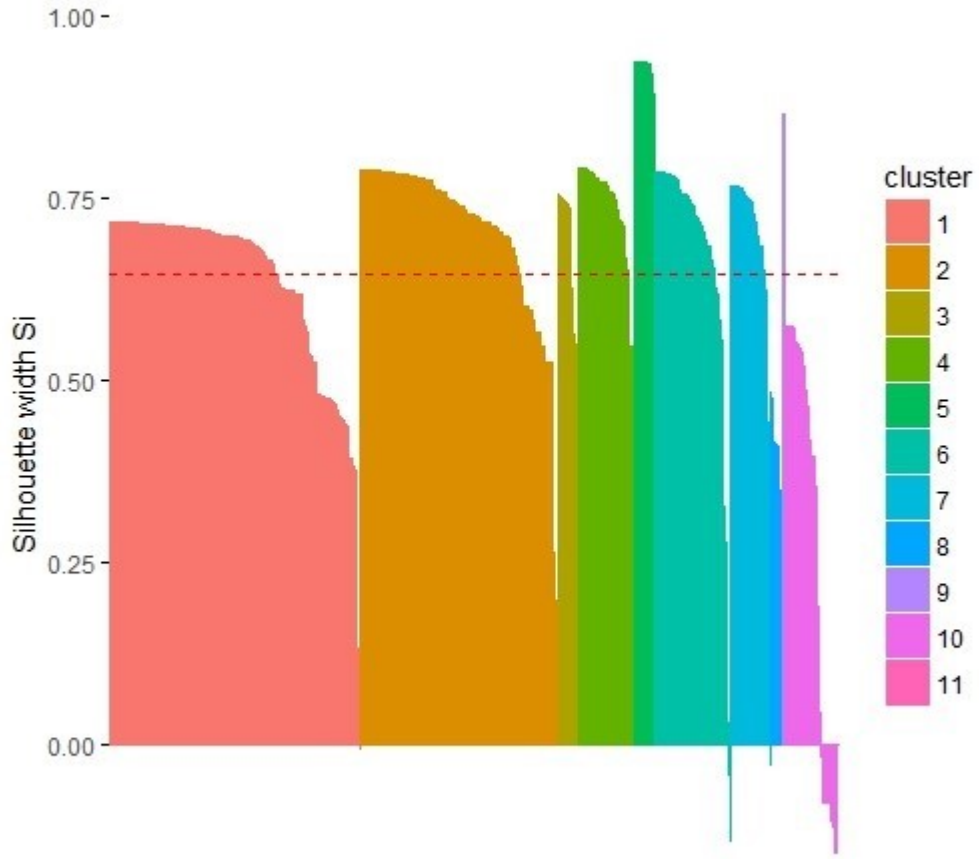

Figure S4. Silhouette plot illustrating the 11 clusters found across all 752 net samples assessed. The red dotted line represents the average silhouette width value (0.65). The width of each cluster represents a graphical representation of the number of nets assigned to that cluster. Clusters that show a negative silhouette width (<0.00) indicates incorrectly assigned observation.

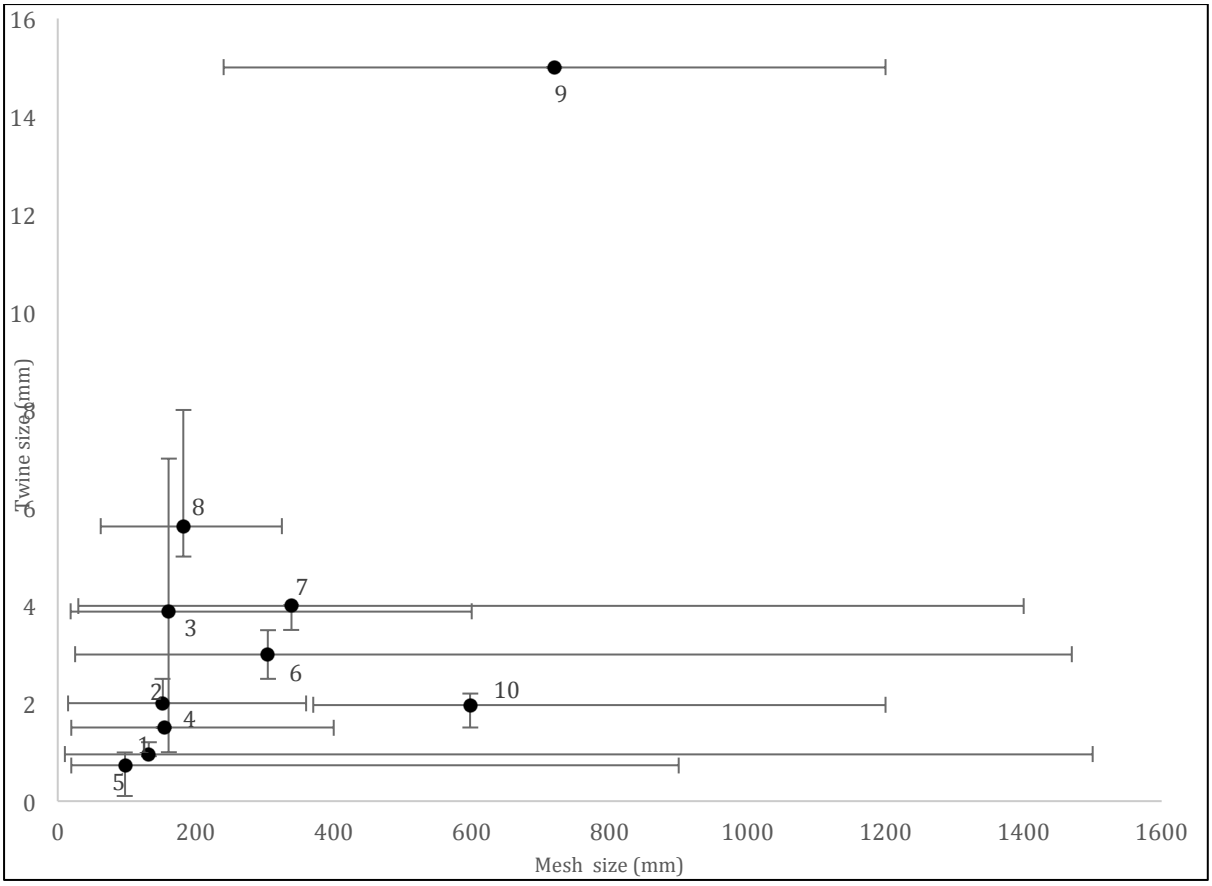

Figure S5. Mean mesh and twine sizes for each cluster (except cluster 11). Standard Deviation of each cluster is shown in the error bars.