Bait collection and hand gathering

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Intertidal fisheries: hidden values

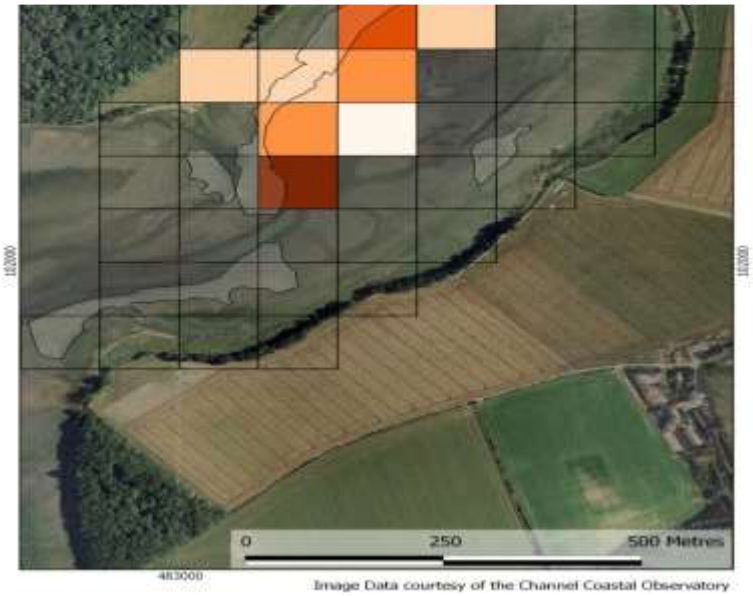
Retail value

Common name	Species	Price (£) kg^{-1}	Source country
Blood worm	*Glycera dibranchiata*	153	USA
Tube worm	*Diopatra aciculata*	97	Australia
King ragworm	*Alitta (Nereis) virens*	62	USA
Black lugworm	*Arenicola defodiens*	53	UK
Ganso	*Marphysa sanguinea*	53	Portugal
Wild salmon	*Salmo salar*	52	UK
Lugworm	*A. marina*	40	UK
European lobster	*Homarus gammarus*	35	UK
Abalone	*Haliotis* spp.	35	New Zealand
King ragworm	*A. virens*	33	UK
Spiny lobster	*Panulirus interruptus*	33	USA
King scallop	*Pecten maximus*	32	UK

Watson et al. 2016, Fish and Fisheries

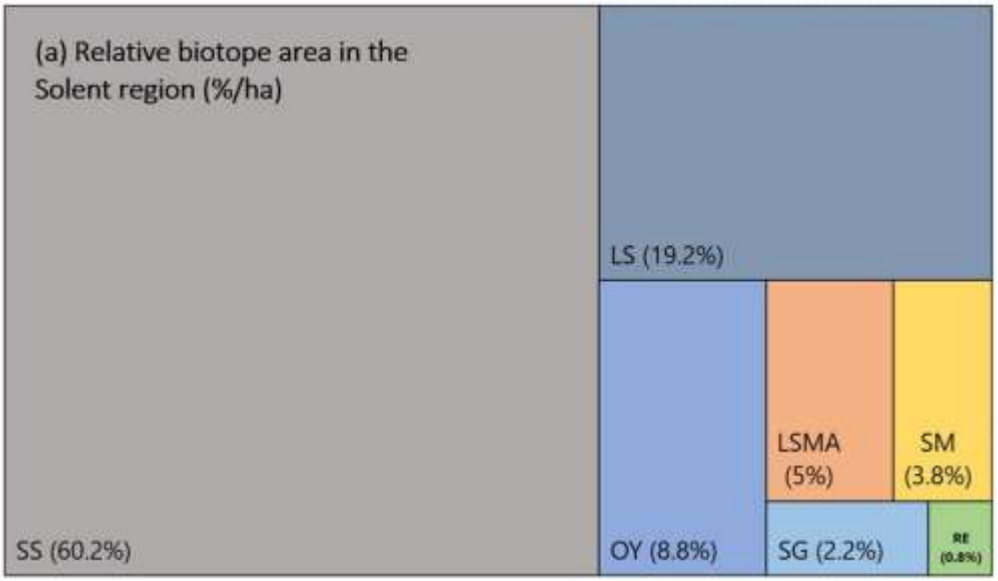
Bait: value and landings

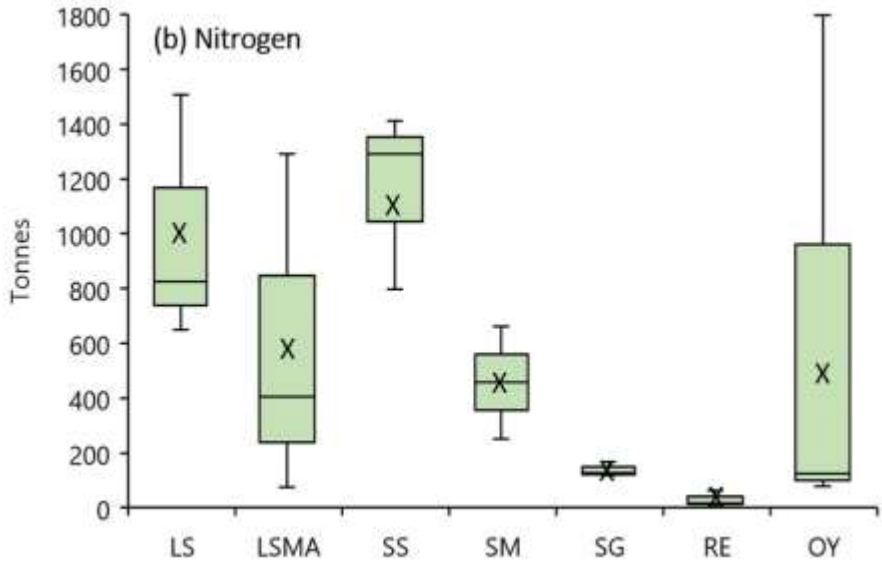
Location/Site	Species	Date	Total biomass (t) removed y^{-1}	Retail price (£) kg^{-1}	Biomass value (£) removed y^{-1}
Dell Quay, UK	*A. virens*	2012	4.9	33	164,000
UK	All polychaetes	2013	2,977	33	152,000,000
UK (UK vessels)	*H. gammarus*	2013	3,000	-	105,000,000
Global	All polychaetes	2015	121,000	49	5,500,000,000
Global, FAO database	Marine worms	2012	353	-	-

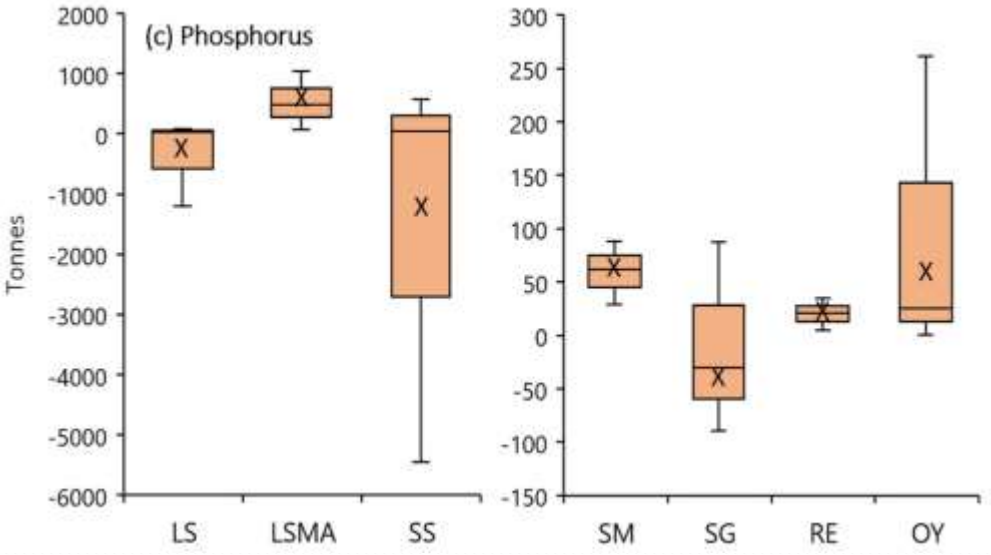


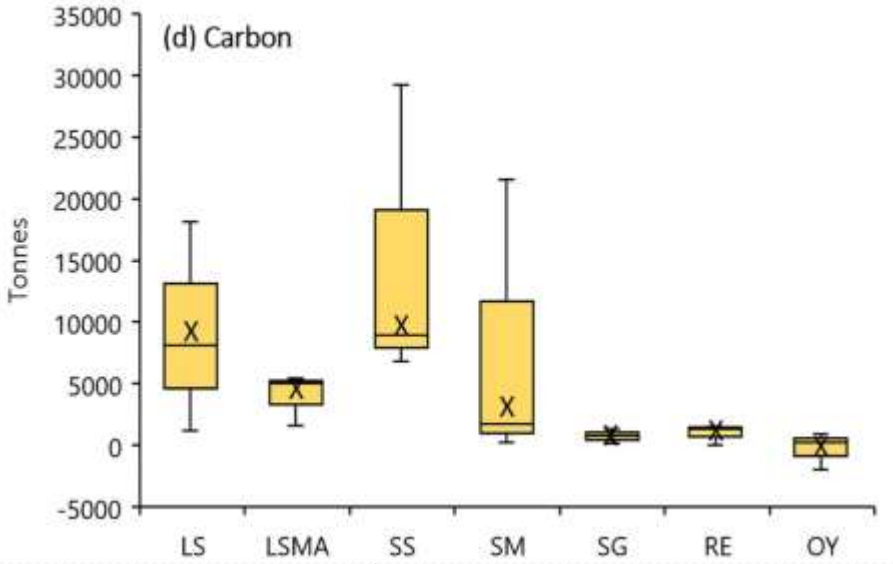
Watson et al. 2016, Fish & Fisheries

Significant services









Watson et al. 2020, Sci. Tot. Environ.

SxIFCA study

deimos
elecnor group

UNIVERSITY OF PORTSMOUTH

Sussex
IFCA
Sussex
Inshore Fisheries and
Conservation Authority

Outputs generated

- Summary of bait collection impacts
- Summary of TEMITH project
- Temporal assessment of digging
- Chichester harbour map

Challenges

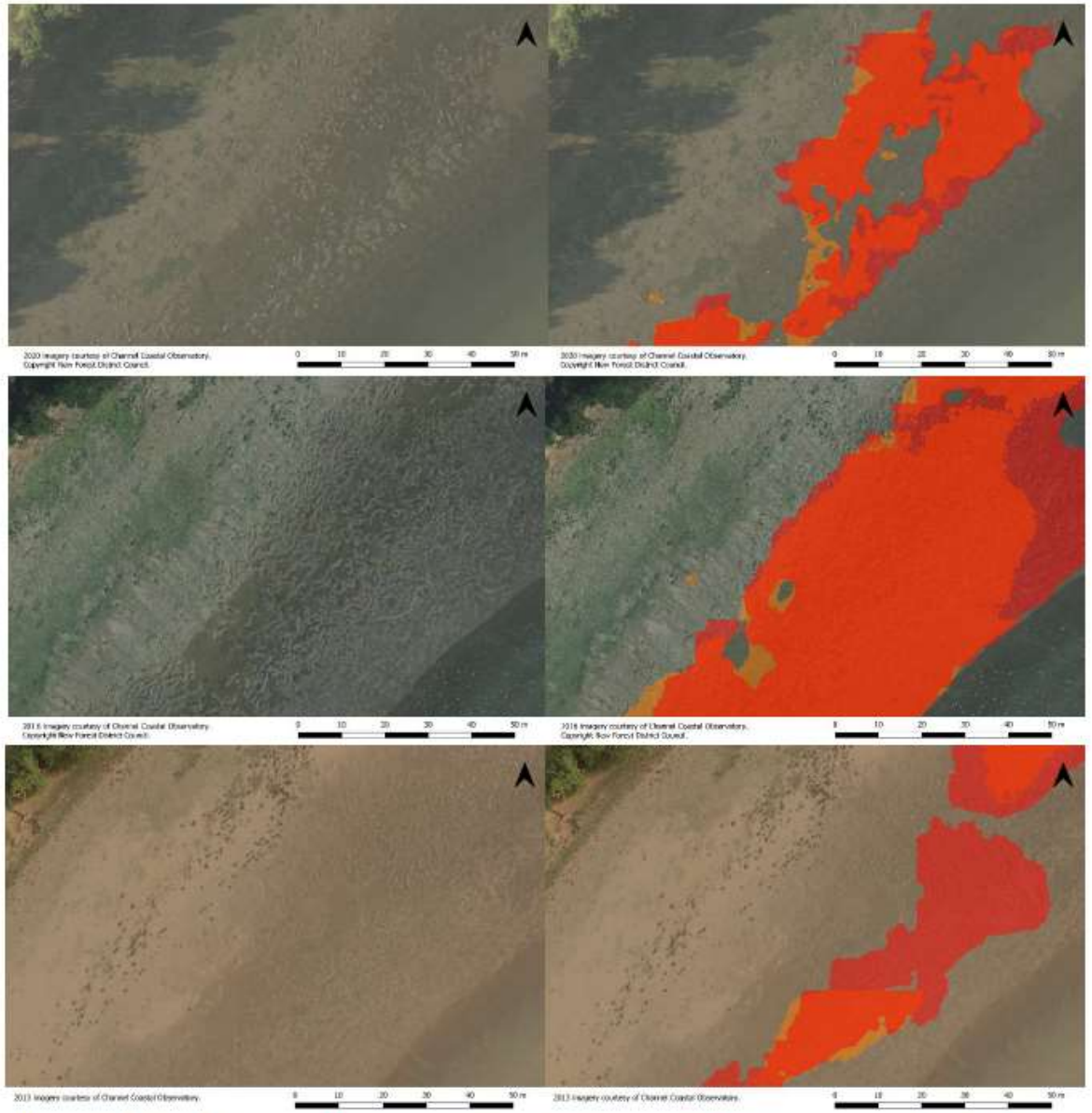


Figure 3. Digging detections by Models A (orange) + B (red) combined for the same location in different years, showing factors that can contribute to variability in model performance and comparability among years (lighting, digging morphology, tidal cover obscuring sediments). Imagery courtesy of Channel Coastal Observatory.

Temporal evolution

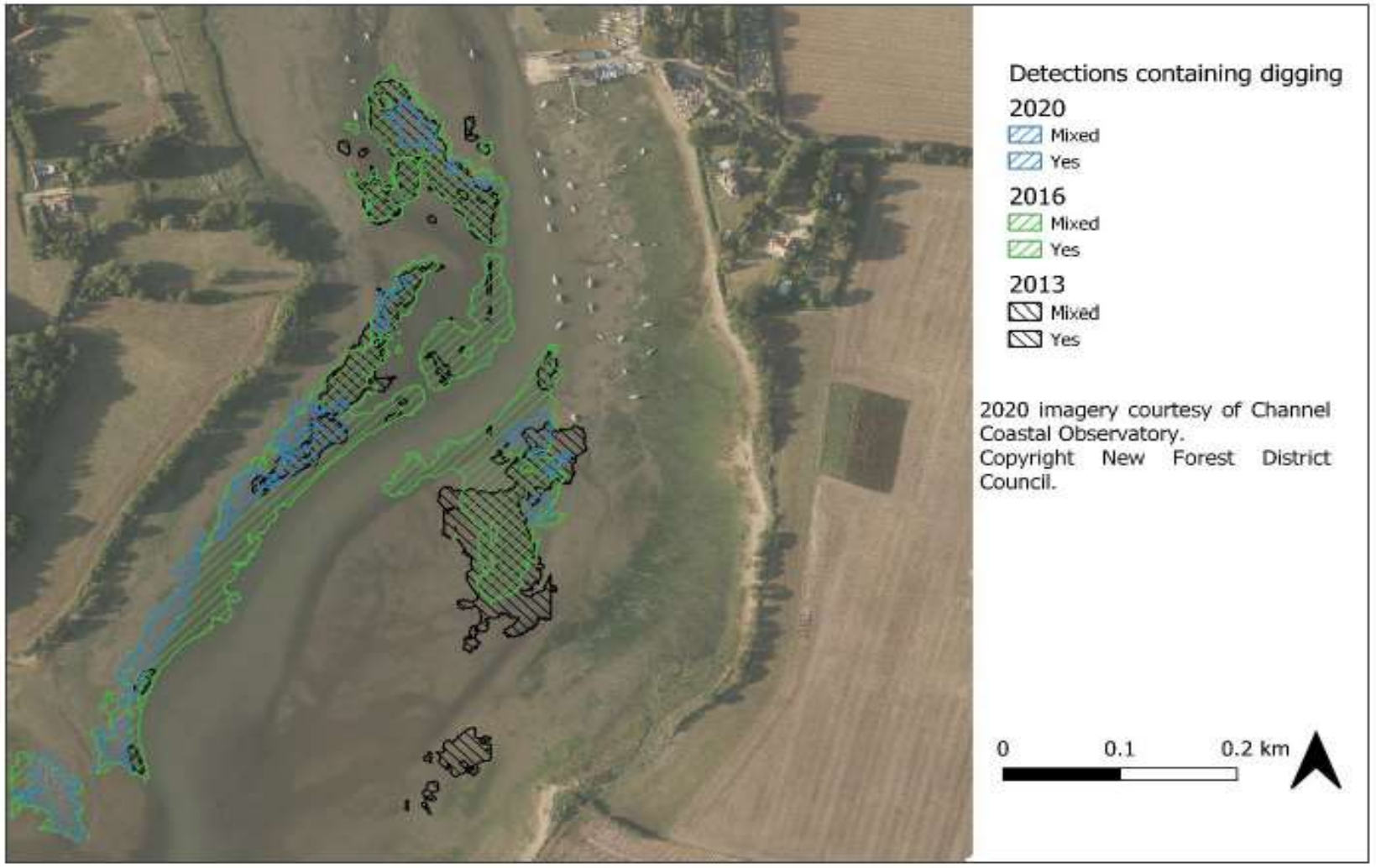


Figure 9. Distribution of Model A+B detections (for the three years) assessed as 'Mixed' and 'Yes' for containing features consistent with digging.

Temporal evolution

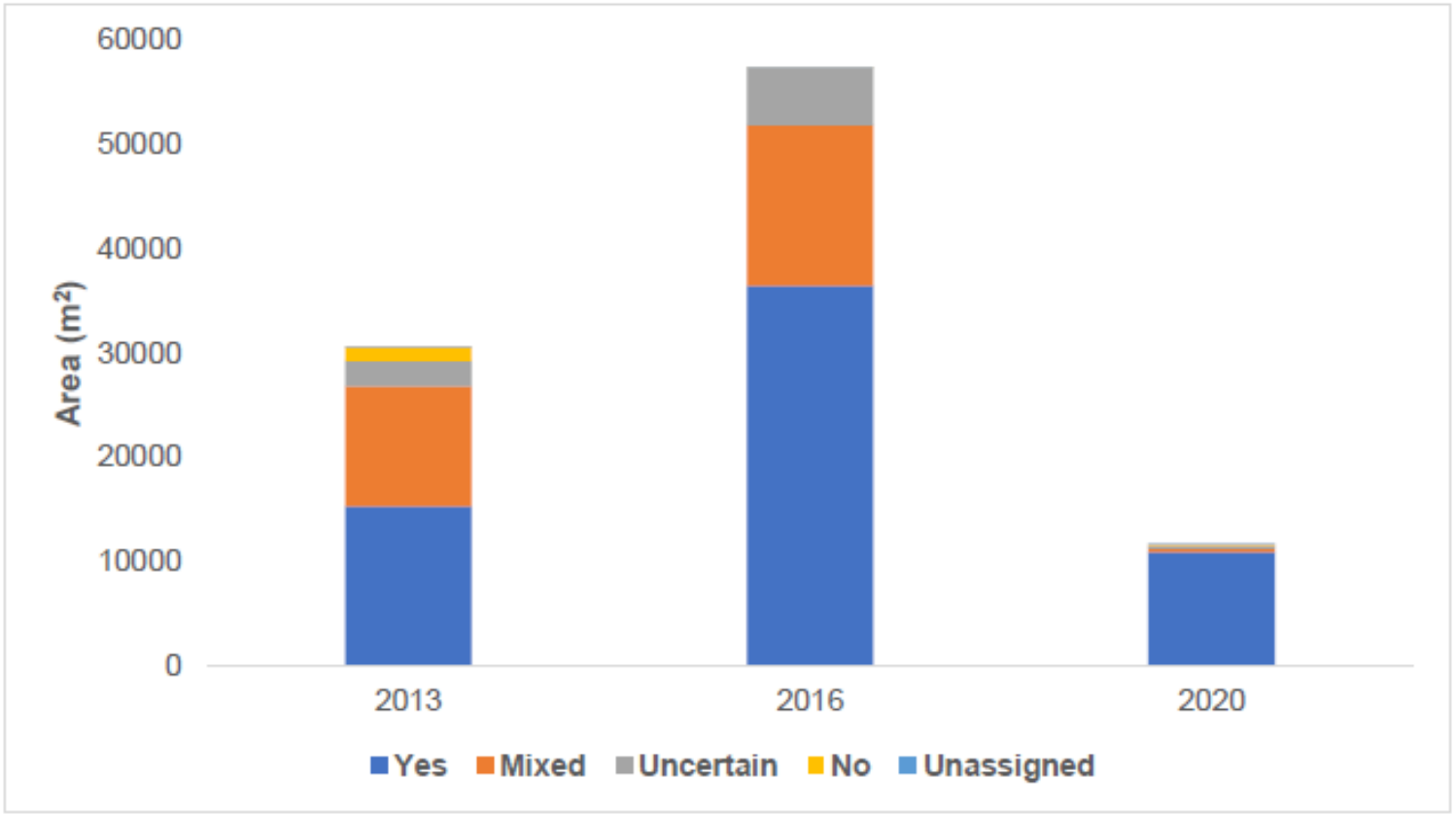


Figure 7. Area of coverage for each assessed category (Table 7) of the Model A+B classifications by year.

Output: management map

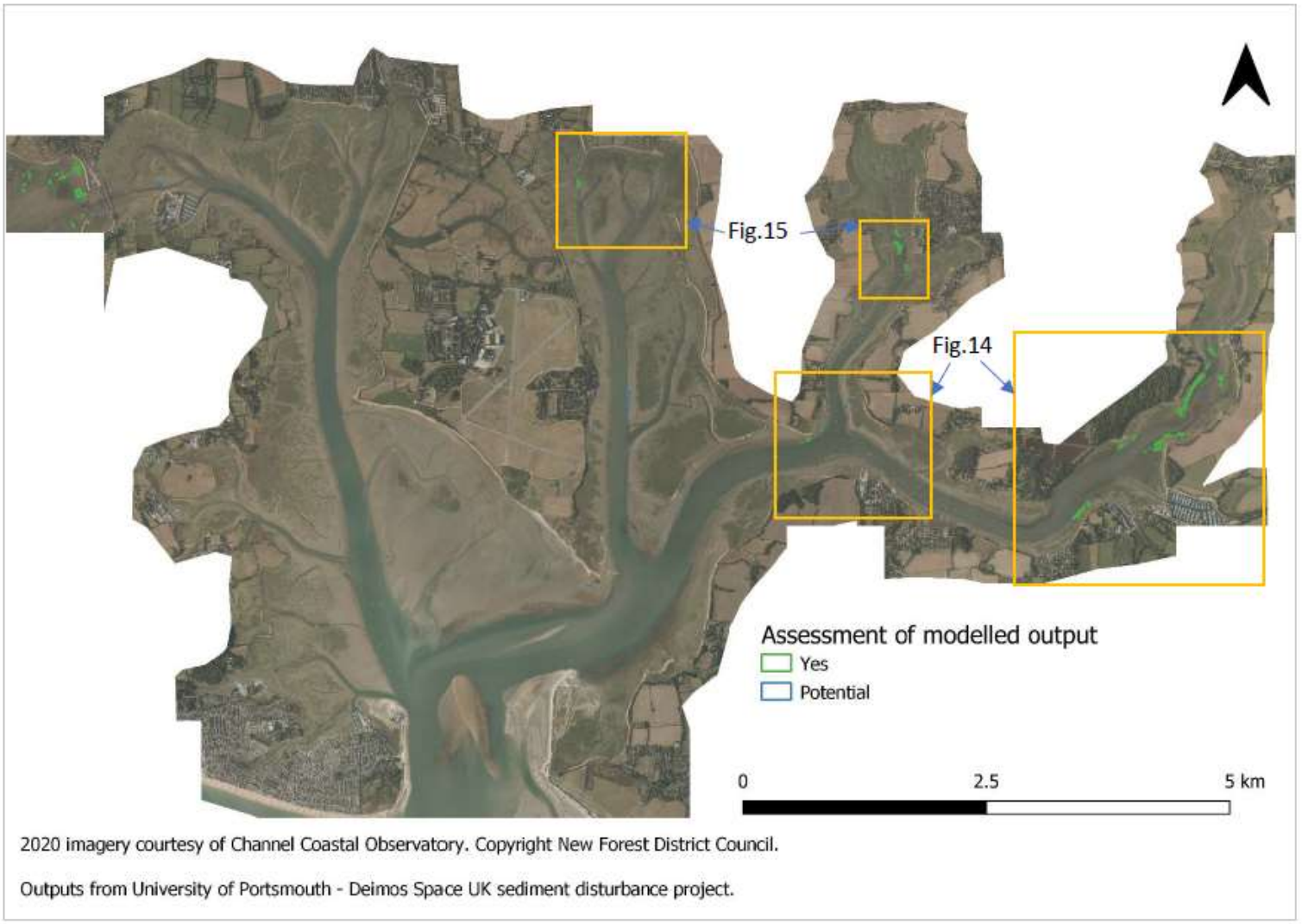


Figure 11. Assessment of Model A+B classifications for Chichester Harbour in 2020 for the detections of highest confidence as consistent with digging disturbance (Yes) and those that are potentially consistent with digging appearance (Potential), but with uncertainty. The yellow boxes flag the areas with 'Yes' detections and correspond with locations presented in Figures 14 and 15.

Summary and next steps

- TEMITH CNN model detects digging at broad scales
  - More data/training
- ARIA 3 project
- MSc projects on hand gathering
- iFRAMS: Integrated Fisheries Reporting & Monitoring Solution
  - Recreational and intertidal fisheries