Intelligent autonomous detection of man-made objects with irregular shapes in the maritime ecosystem: Technical Report-7: Images with man-made objects

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Index Terms

Maritime man-made object detection, HSV colour space, colour image processing, colour segmentation, ROC curve.

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1 EXAMPLES FOR IMAGES WITH MAN-MADE OBJECTS

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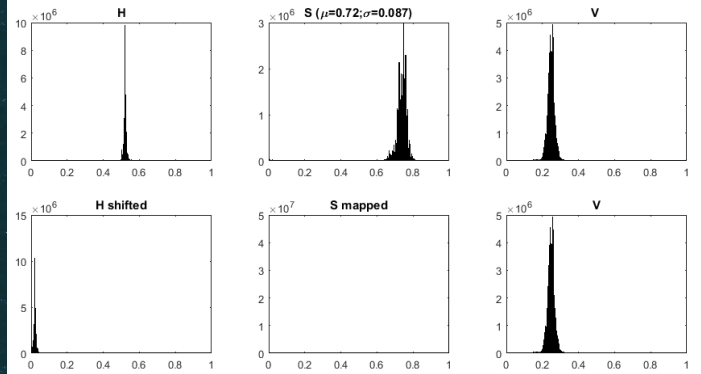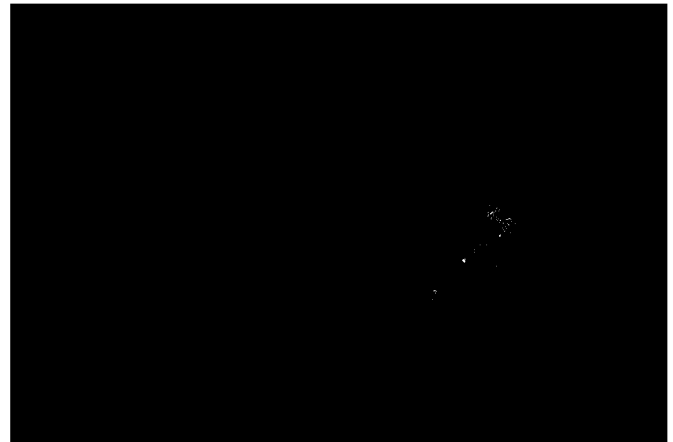
(a) Original image

(b) Histogram of H, S, V channels:first row original;second row new

(c) HSV conversion

(d) Use of threshold and mask

(e) Filling objects with closed boundaries

(f) Marking of the objects with green plus signs

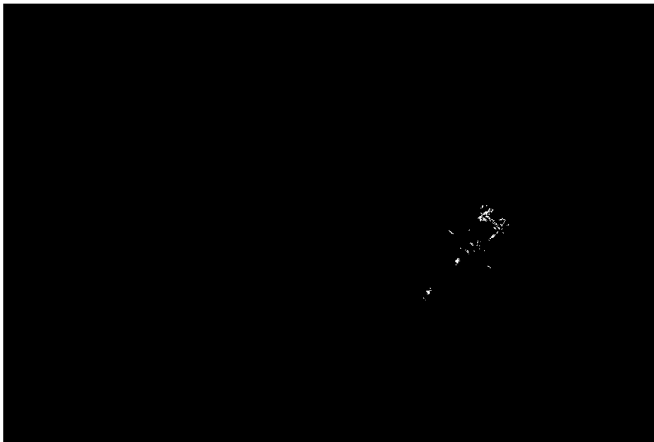Fig. 1: Example 121: Man-made object detection

(a) Original image

(b) Histogram of H, S, V channels:first row original;second row new

(c) HSV conversion

(d) Use of threshold and mask

(e) Filling objects with closed boundaries
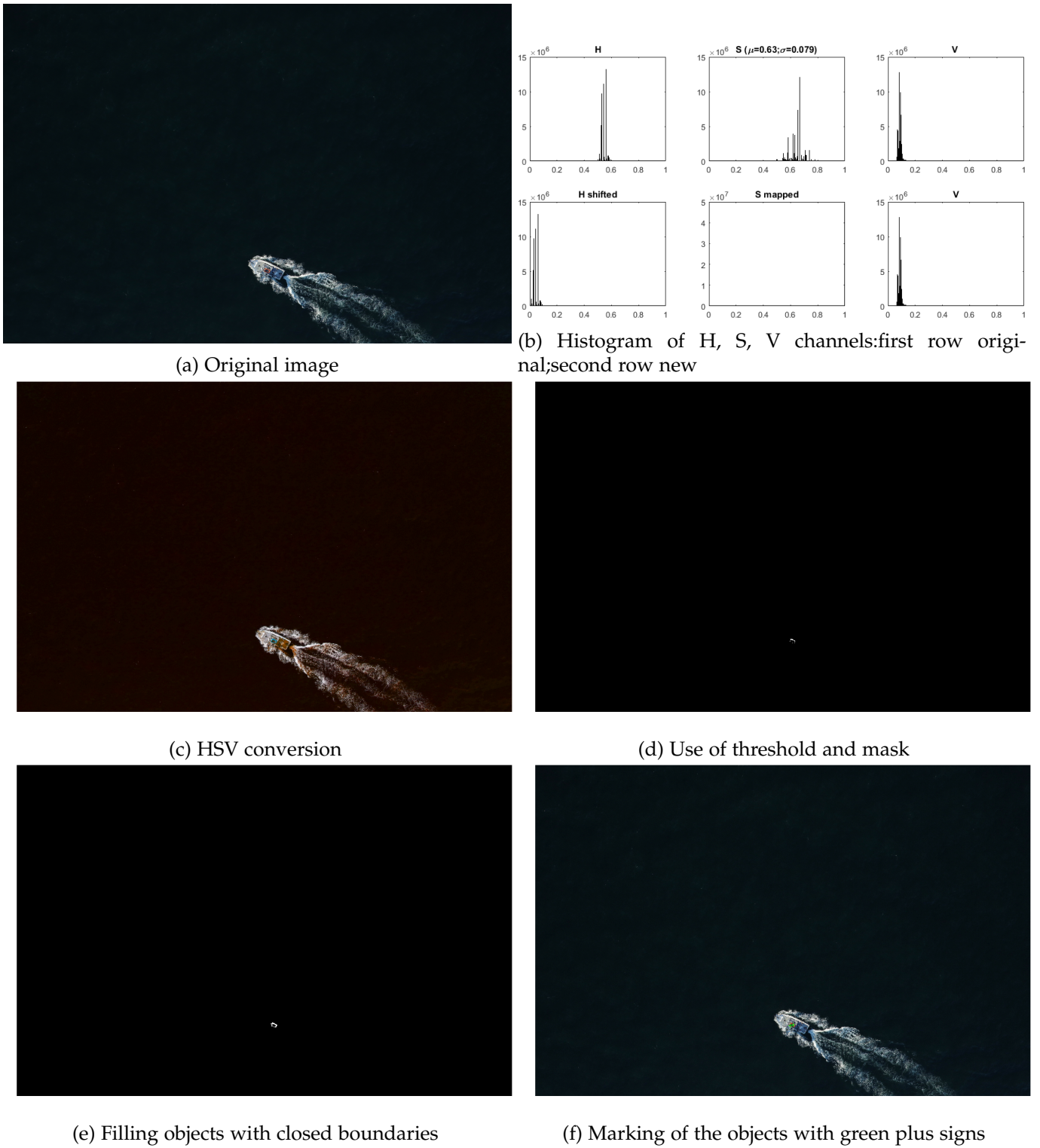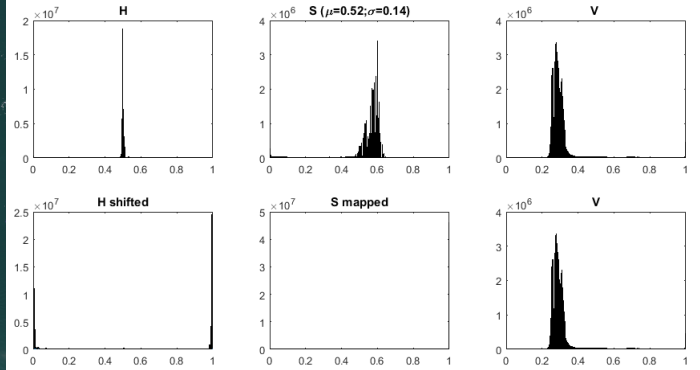
(f) Marking of the objects with green plus signs

Fig. 2: Example 122: Man-made object detection

(a) Original image

(b) Histogram of H, S, V channels:first row original;second row new

(c) HSV conversion

(d) Use of threshold and mask

(e) Filling objects with closed boundaries

(f) Marking of the objects with green plus signs
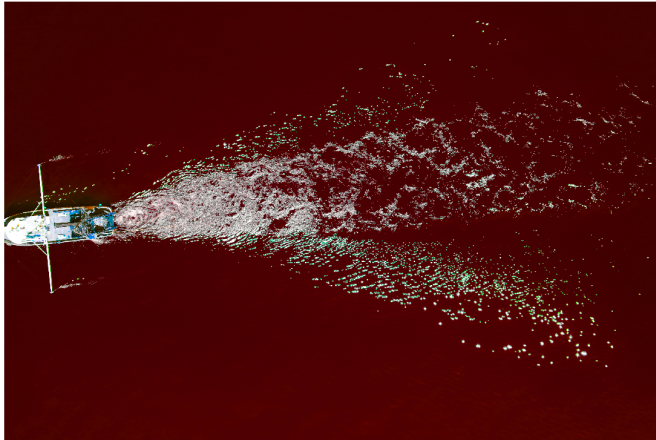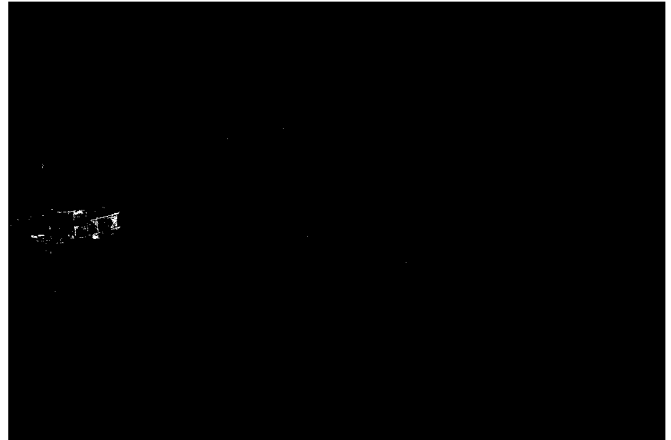
Fig. 3: Example 123: Man-made object detection

(a) Original image

(b) Histogram of H, S, V channels:first row original;second row new

(c) HSV conversion

(d) Use of threshold and mask
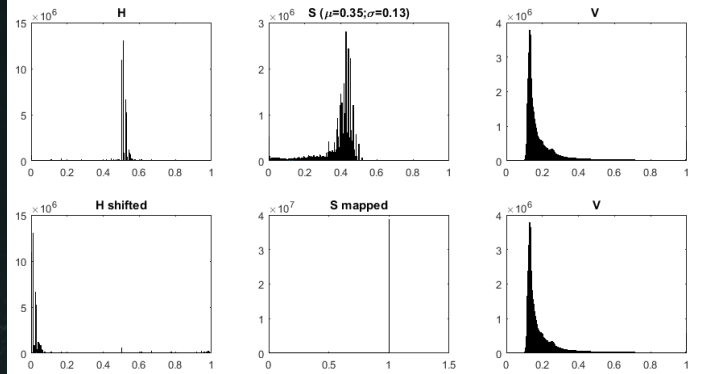

(e) Filling objects with closed boundaries

(f) Marking of the objects with green plus signs
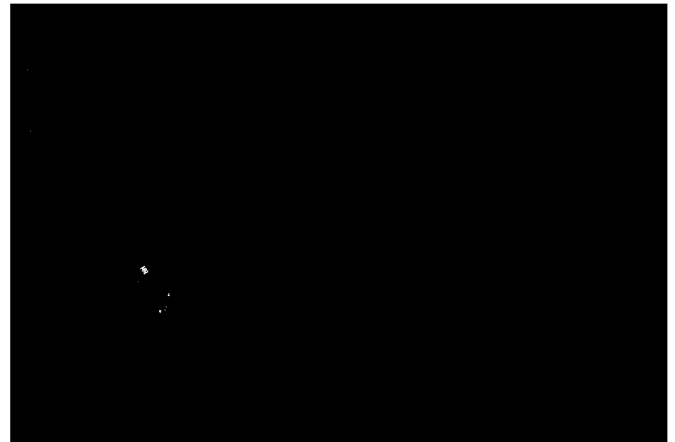
Fig. 4: Example 124: Man-made object detection

(a) Original image

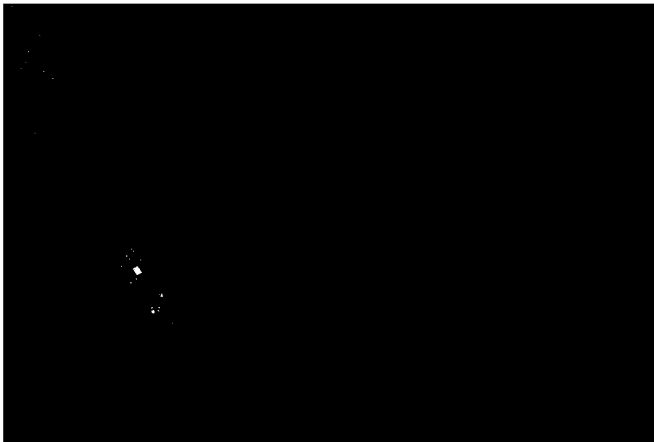(b) Histogram of H, S, V channels:first row original;second row new

(c) HSV conversion

(d) Use of threshold and mask

(e) Filling objects with closed boundaries

(f) Marking of the objects with green plus signs

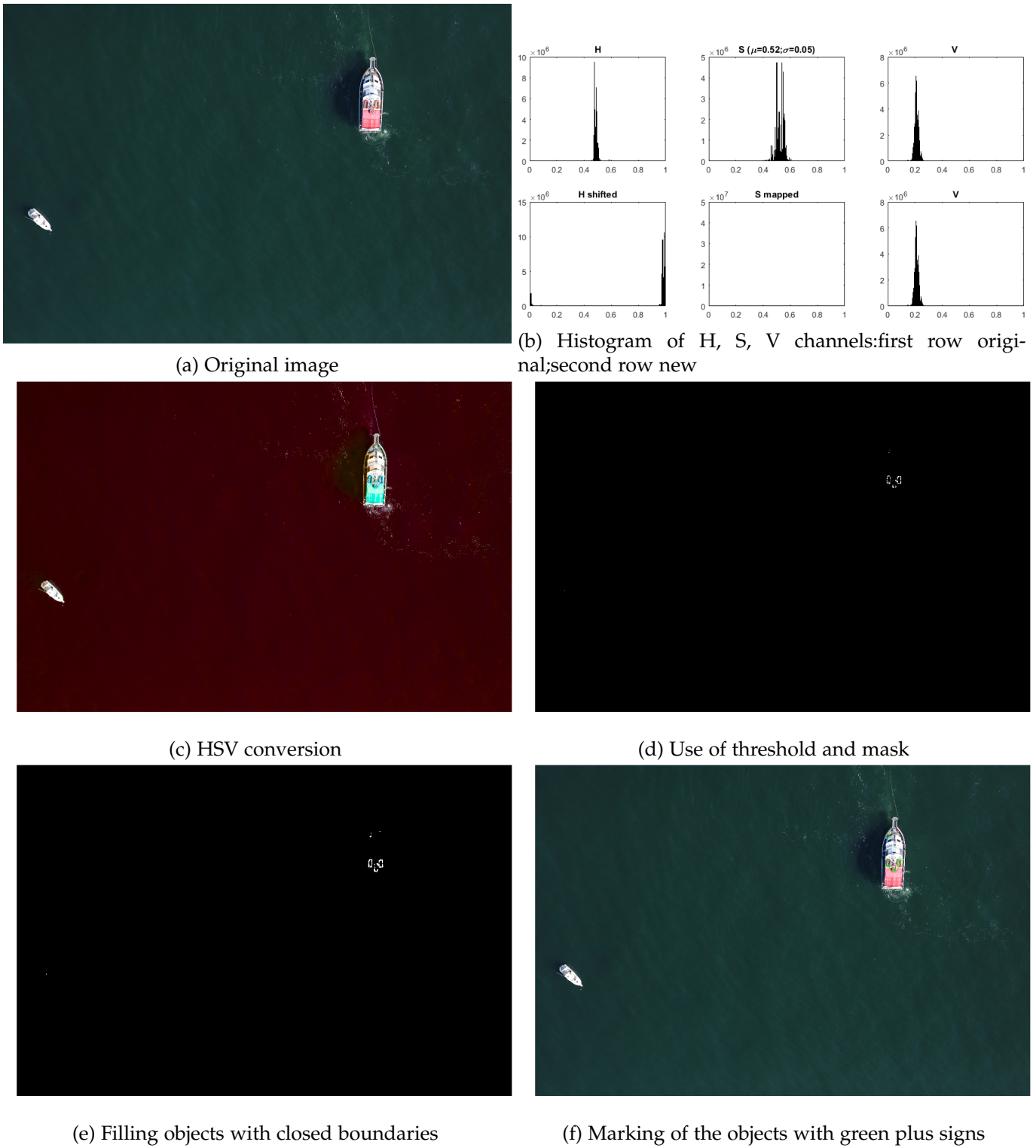Fig. 5: Example 125: Man-made object detection

REFERENCES

[1] Kuru, K., Clough, S., Ansell, D., McCarthy, J., & McGovern, S. (2023). Intelligent airborne monitoring of irregularly shaped man-made marine objects using statistical Machine Learning techniques. In Ecological Informatics (Vol. 78, p. 102285). Elsevier BV. https://doi.org/10.1016/j.ecoinf.2023.102285

[2] Kuru, K., Clough, S., Ansell, D., McCarthy, J., & McGovern, S. (2023). WILDetect: An intelligent platform to perform airborne wildlife census automatically in the marine ecosystem using an ensemble of learning techniques and computer vision. In Expert Systems with Applications (Vol. 231, p. 120574). Elsevier BV. https://doi.org/10.1016/j.eswa.2023.120574