

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.



1 EXAMPLES FOR IMAGES WITH MAN-MADE OBJECTS

ACKNOWLEDGEMENTS

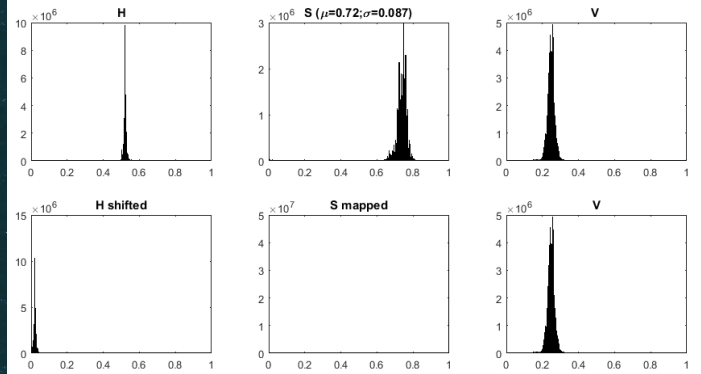
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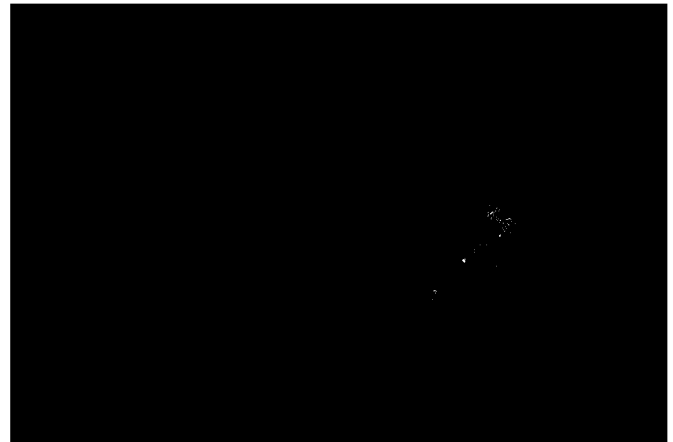
(a) Original image



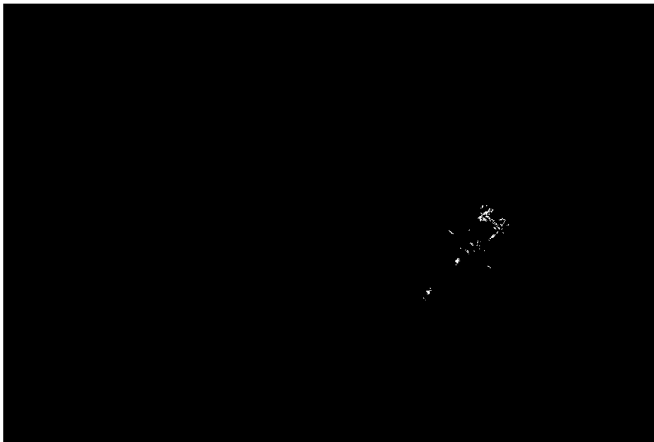
(b) Histogram of H, S, V channels: first row original; second row new



(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

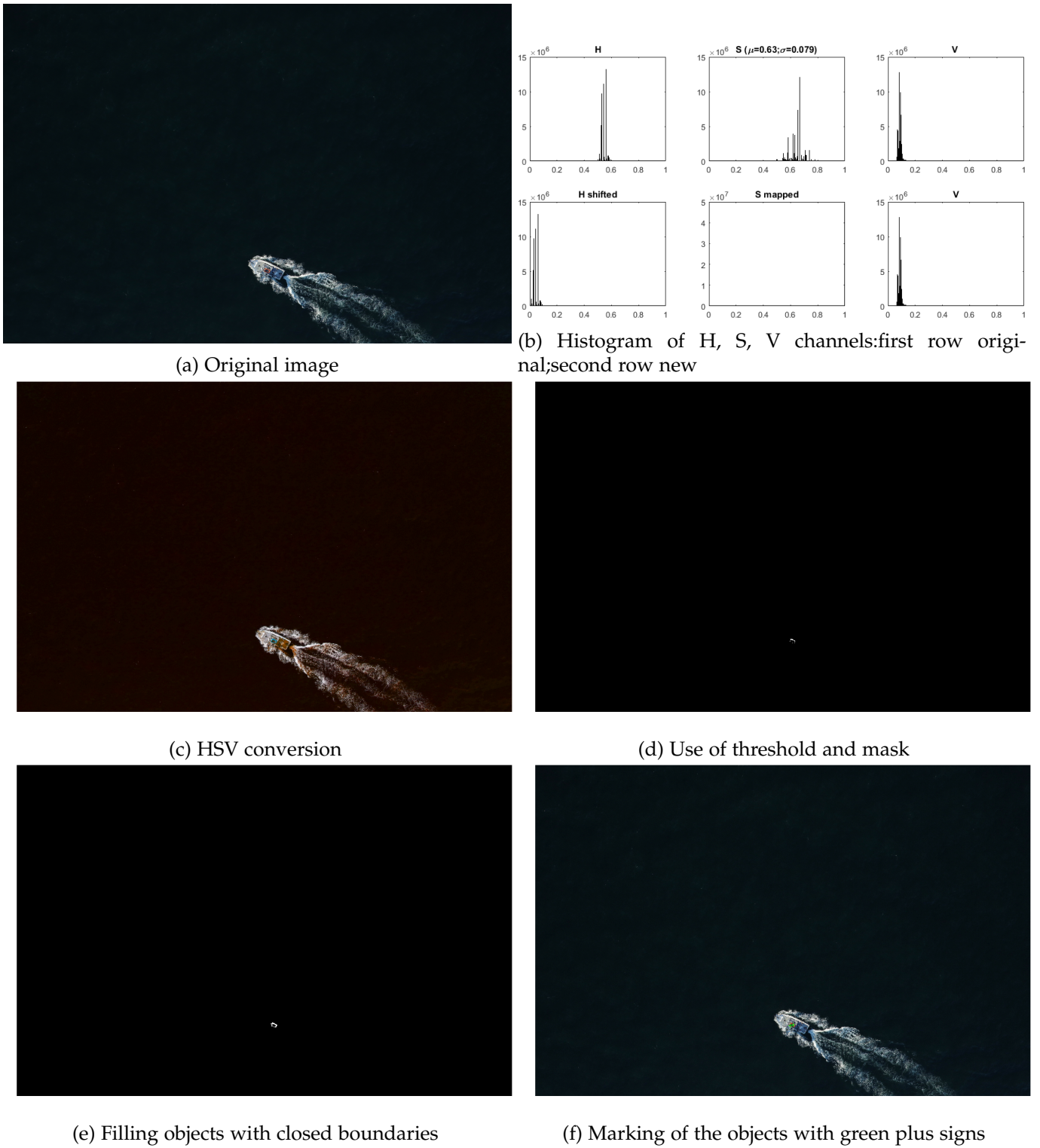
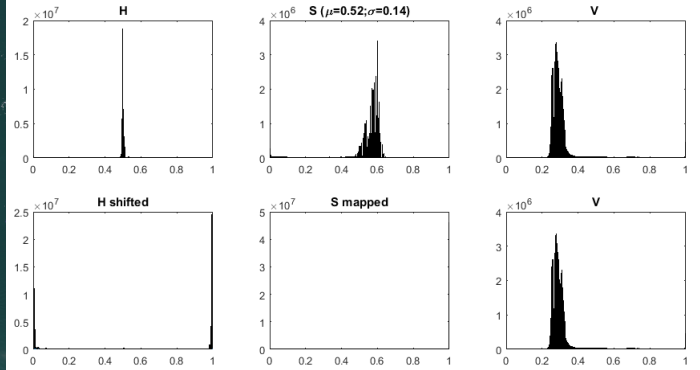


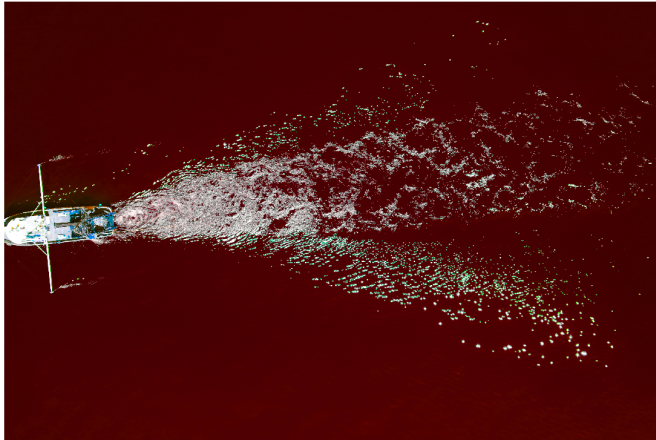
Fig. 2: Example 122: Man-made object detection



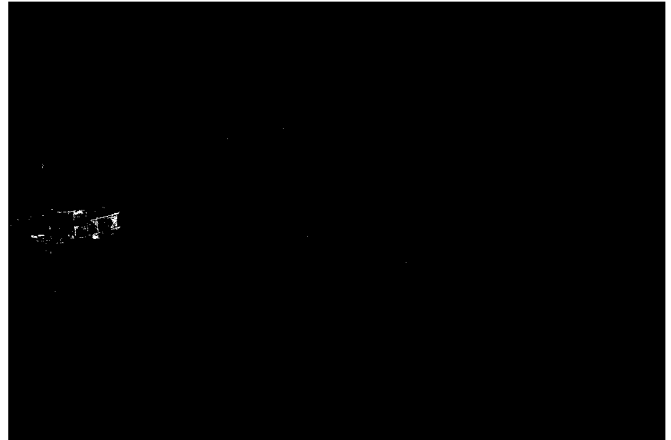
(a) Original image



(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

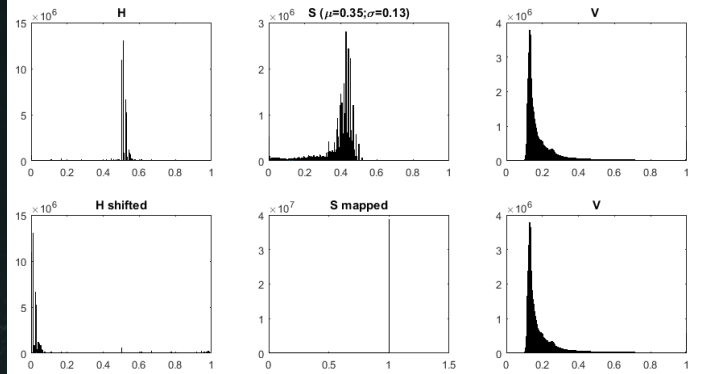


(f) Marking of the objects with green plus signs

Fig. 3: Example 123: Man-made object detection



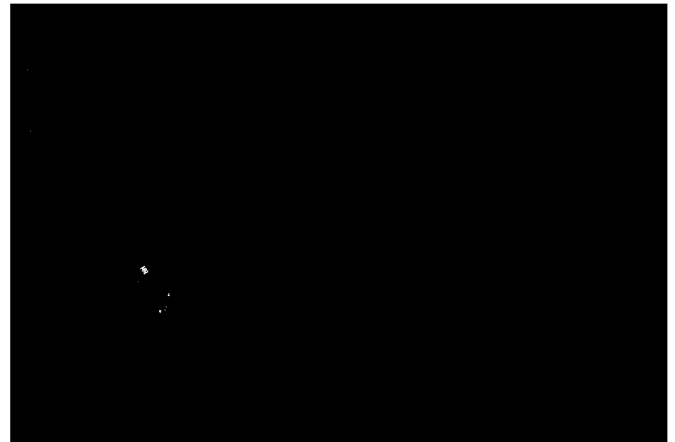
(a) Original image



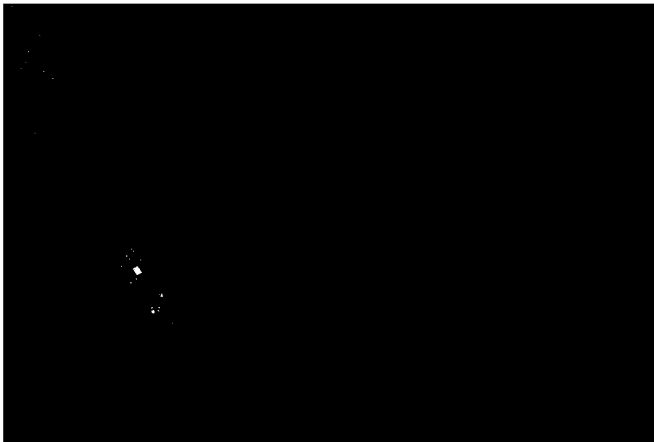
(b) Histogram of H, S, V channels: first row original; second row new



(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

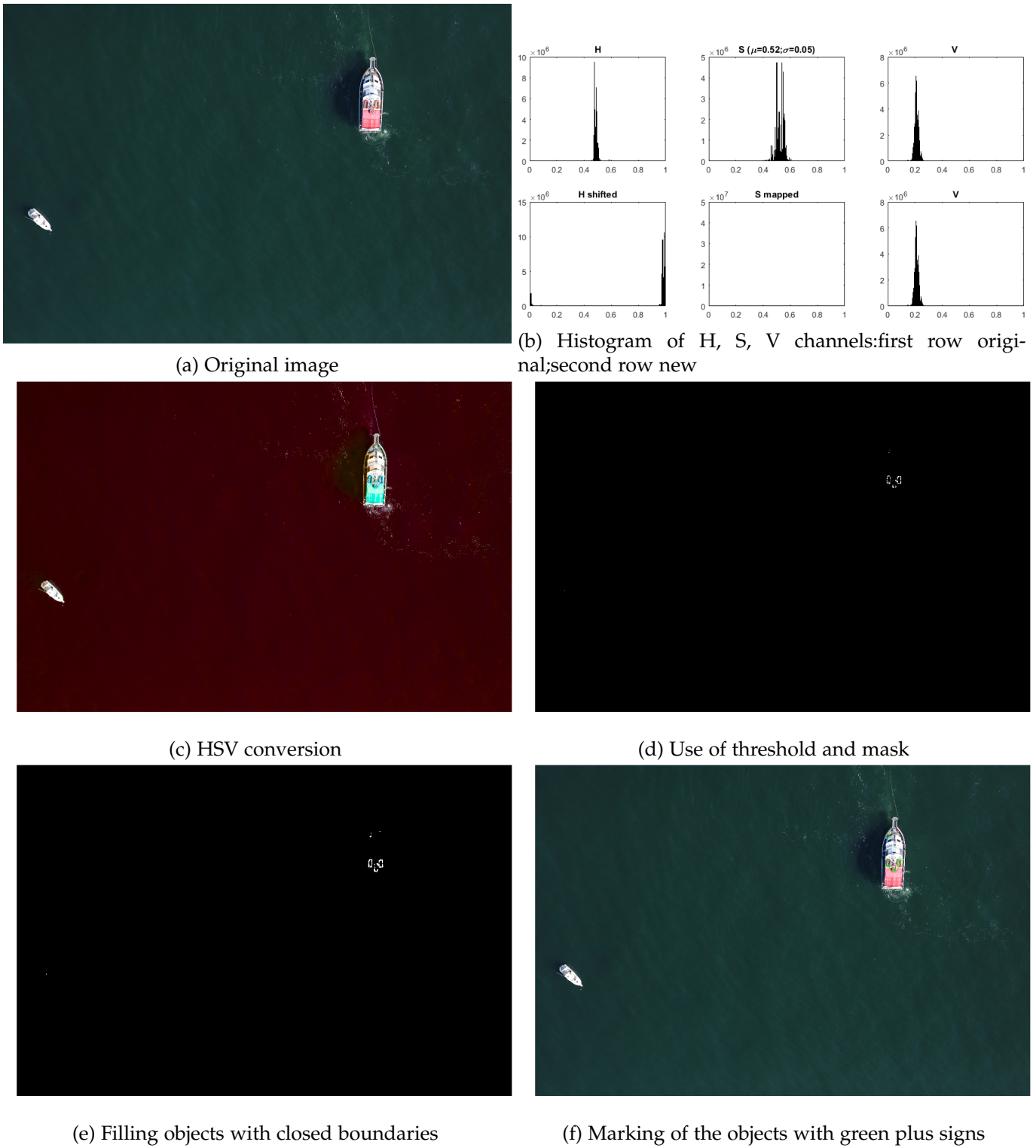


Fig. 5: Example 125: Man-made object detection

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>