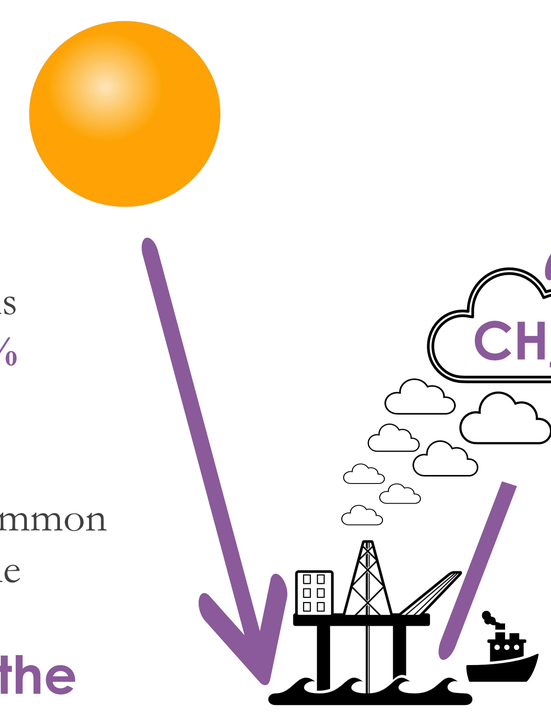
Mapping Methane Emission Plumes with Sunglint-configured Imagery for Offshore Oil and Gas Monitoring

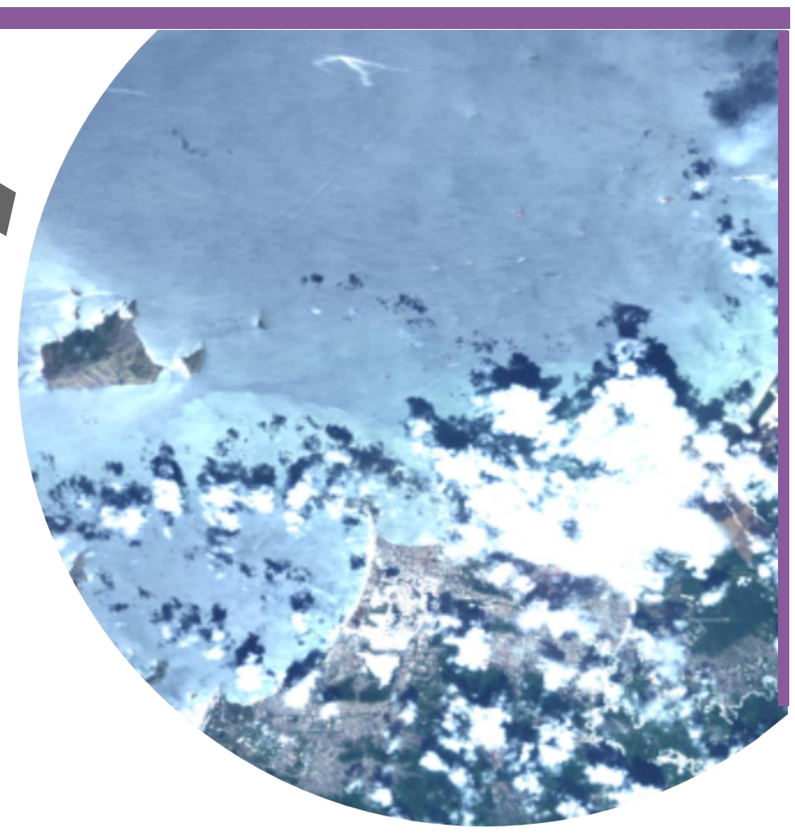
Why Map Methane?

Methane (CH_4) warms the atmosphere **84x** more efficiently than carbon dioxide

1/3rd of anthropogenic methane emissions come from oil and natural gas activity, **30%** of which is produced offshore

Inefficient flaring or **cold venting** are common processes for operators which emit methane



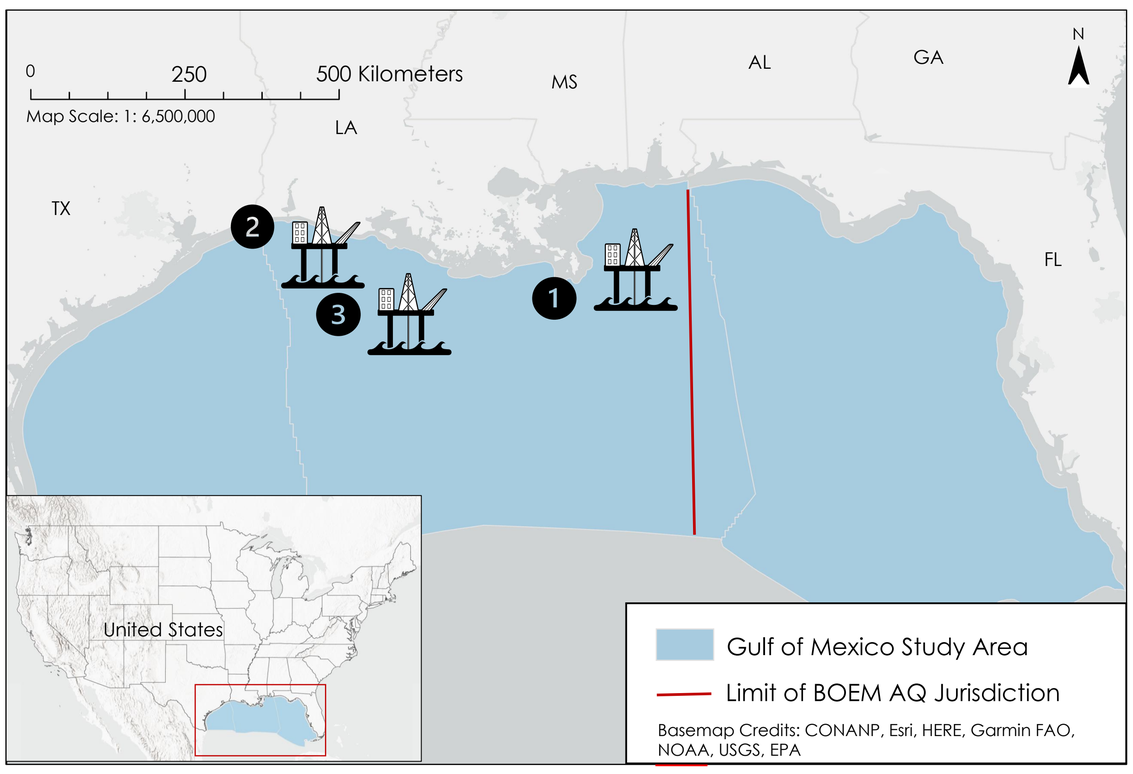


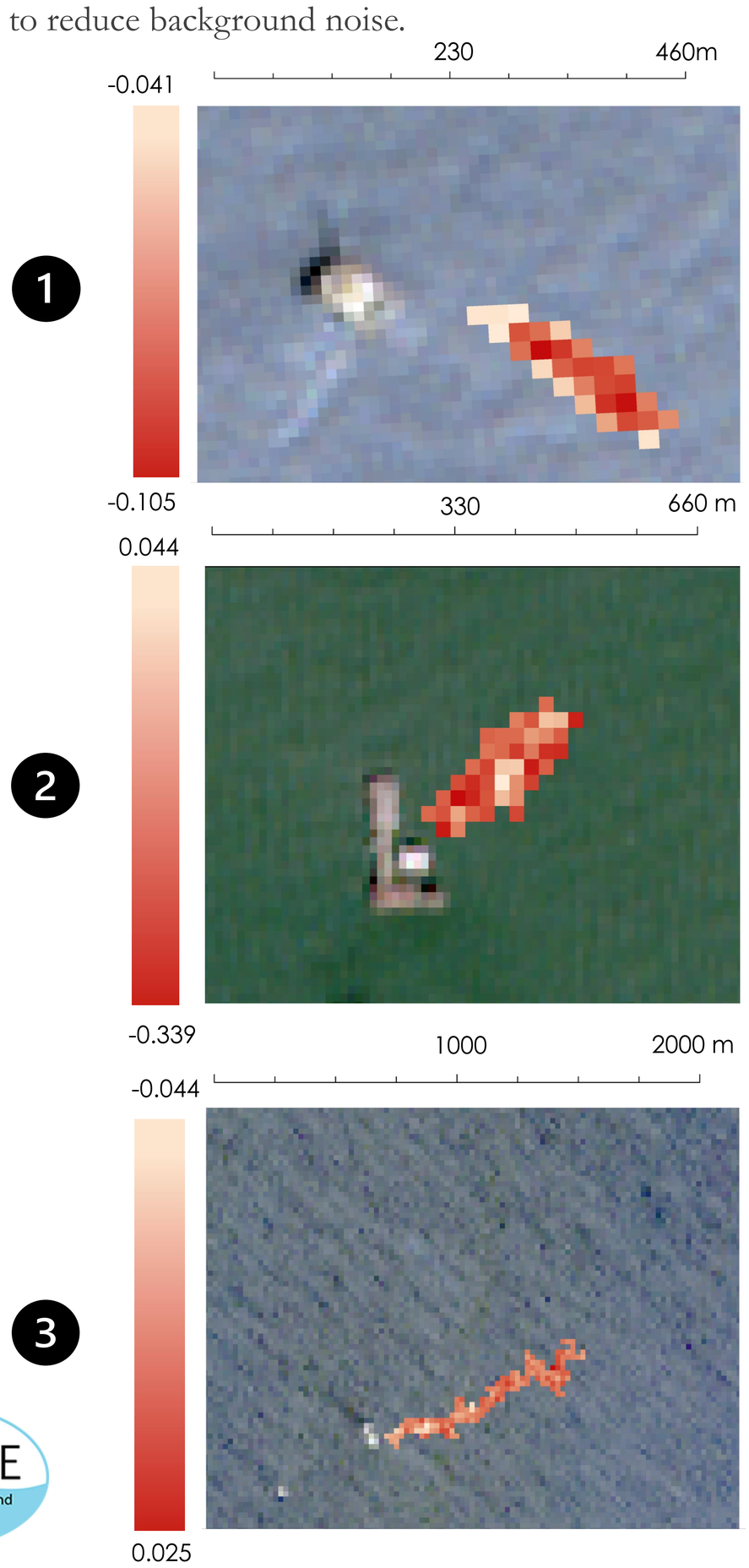
NASA DEVELOP is demonstrating the capacity of existing satellite data to identify and quantify methane plumes.

Currently, bottom-up monitoring and emission estimates are self-reported by operators

Inspections are infrequent, and offshore methane sensors are non-existent

Imperceptible to the human eye, methane can be picked up by remote sensors, such as Landsat 8&9, Sentinel-2 and PRISMA used in this project. Sun glint conditions on water, though rare, create enough illumination to reduce background noise.





Remote sensing is a viable solution to the gap in monitoring oil and gas activity, even in ambiguous offshore environments.

Gulf of Mexico Health & Air Quality

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Acknowledgements

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This material is based upon work supported by NASA through contract NNL16AA05C. Any mention of a commercial product, service, or activity in this material does not constitute NASA endorsement. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Aeronautics and Space Administration and partner organizations.