Remote sensing for monitoring shipping

Andrew Fleming, BAS, June 2018
Context

• Current initiatives

• EO for monitoring MPA - focus on ship activity

• Methods and limitations
EO options

- Fisheries monitoring services based on AIS/VMS
- Satellites - low earth orbit
- Optical satellites
- SAR satellites
Fisheries monitoring services

Global Fishing Watch

Project Eyes on the Seas

Google

SKYTRUTH

OCEANA

CATAPULT

Satellite Applications

PEW
Each point indicates the start of a gap in AIS signals from a fishing vessel lasting more than 24 hours.
Synthetic Aperture Radar

EU Copernicus Sentinel 1 SAR imagery of South Georgia and South Sandwich Islands
Optical - MODIS

NASA Terra MODIS imagery - South Sandwich Islands
Optical - MODIS

NASA Terra MODIS imagery - South Sandwich Islands
The 'dark fleet': Global Fishing Watch shines a light on illegal catches

Low light imaging data being used to expose unregulated and unreported fishing on the high seas
NOAA VIIRS Boat Detection
Iceberg detection from satellite radar altimetry