#### Mapping the Frozen Continent of Antarctica

14<sup>th</sup> May 2025 IMIA Mapping Leaders Forum Laura Gerrish, GIS and Mapping Specialist







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# British Antarctic Survey

BAS's vision:

To be a world-leading centre for polar science and polar operations, addressing issues of global importance and helping society adapt to a changing world.



### Antarctica

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# Published maps

- Scale of maps vary from 1:10k to 1:10m
- Covering both poles
- Maps sold all around the world







#### Antarctica and the Arctic – 1:10m



Contours, spot heights, rock outcrop, research stations, ice shelf extents, bathymetry



Contours on ice, spot heights, rivers, lakes, towns, roads, railways, airports, bathymetry





# South Georgia

#### 1:200 000





#### The Shackleton Crossing

1:40 000 and 1:25 000



# Polar cartography

Is anything specifically different in polar cartography?

- North arrows
- Limits of satellites
- Darkness
- Everything keeps melting
- Projections



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# Updating a map

• Antarctica is a continuously changing environment, meaning the maps never stay up-to-date for long

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- Maps are typically updated every 2-4 years
- You have both real changes and changes in the data accuracy and availability

# Updating a map

- Elevation
  - Has the area dropped much in elevation?
- Coastline
  - Are there any changes in ice shelf or ice coast extent?
- Background imagery
  - Do we have better/more recent/higher res. imagery?
- Rock outcrop
  - Has ice melted to reveal more rock?
- Research stations?
  - Are there new ones? Have they moved or changed status?





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#### Delineating the coast... not so simple



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# **Operational mapping**



Screenshot from our internal web map



Dash-7

### Icebergs

- Work to track and monitor icebergs
- A23 currently grounded





50°W

Falkland

Islands

South

America





### UAVs

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## Thank you

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