

AIRBORNE GEOSPATIAL TECHNOLOGIES – FITNESS FOR PURPOSE OF USE

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Supporting the airborne data acquisition and mapping industries



To view in full screen in Adobe Acrobat press the Ctrl + L key on your computer. Press Esc to return to normal view

Fitness for Purpose of Use



- Application requirements
- Ability of human eye to resolve detail (*product specifications*) and systems used to capture and process data (*process specifications*)
- Cost effectiveness of solution
- Timeliness of solution
- Operator experience and expertise

Fitness for Purpose of Use – Map Production

The average human eye can resolve a point 0.1mm in diameter

For paper map production or digital viewing purposes at a pre-specified scale, the estimated ground sampled distance “fit for purpose of plotting or viewing” is:

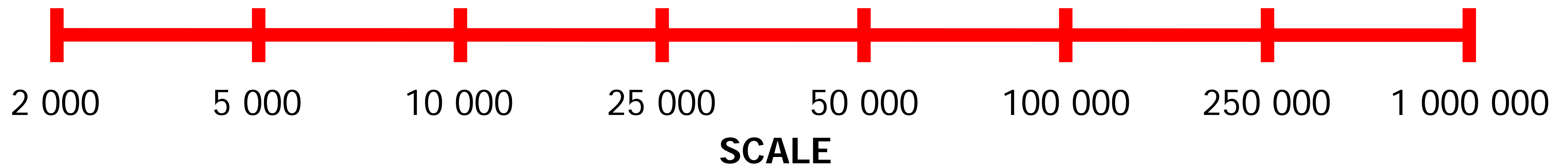
$0.1\text{mm} \times \text{scale number} = \text{estimated ground sampled distance}$

Example: for 1/500 scale plot, $0.1\text{mm} \times 5000 = 500\text{mm}$

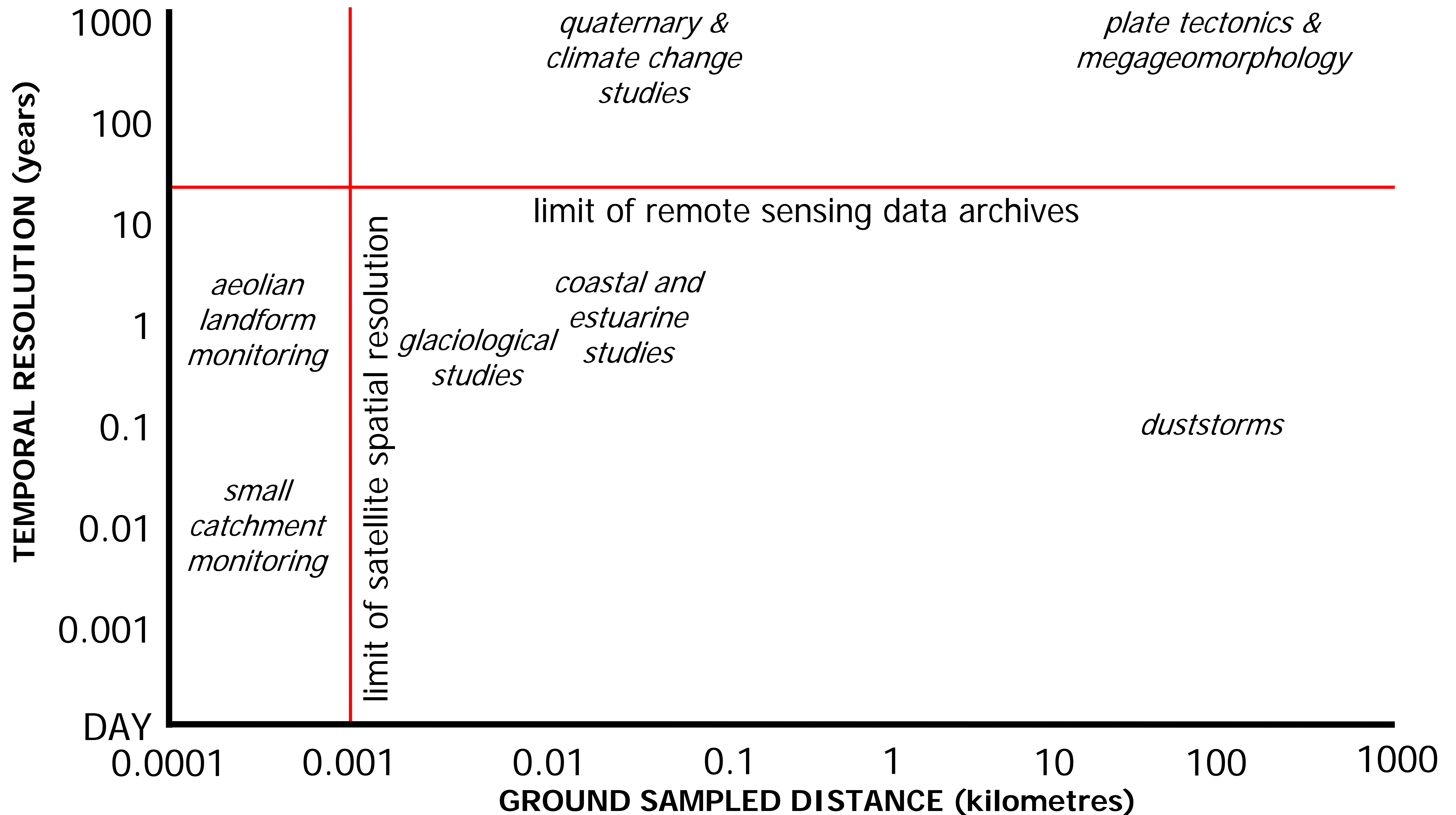
A colour image at 0.5m GSD will be 1.2 Gb for a 10km by 10km area of interest at 8-bits per channel.

The colour image at 0.25m GSD will be 4.8 Gb for a 10km by 10km area of interest at 8 bits per channel.

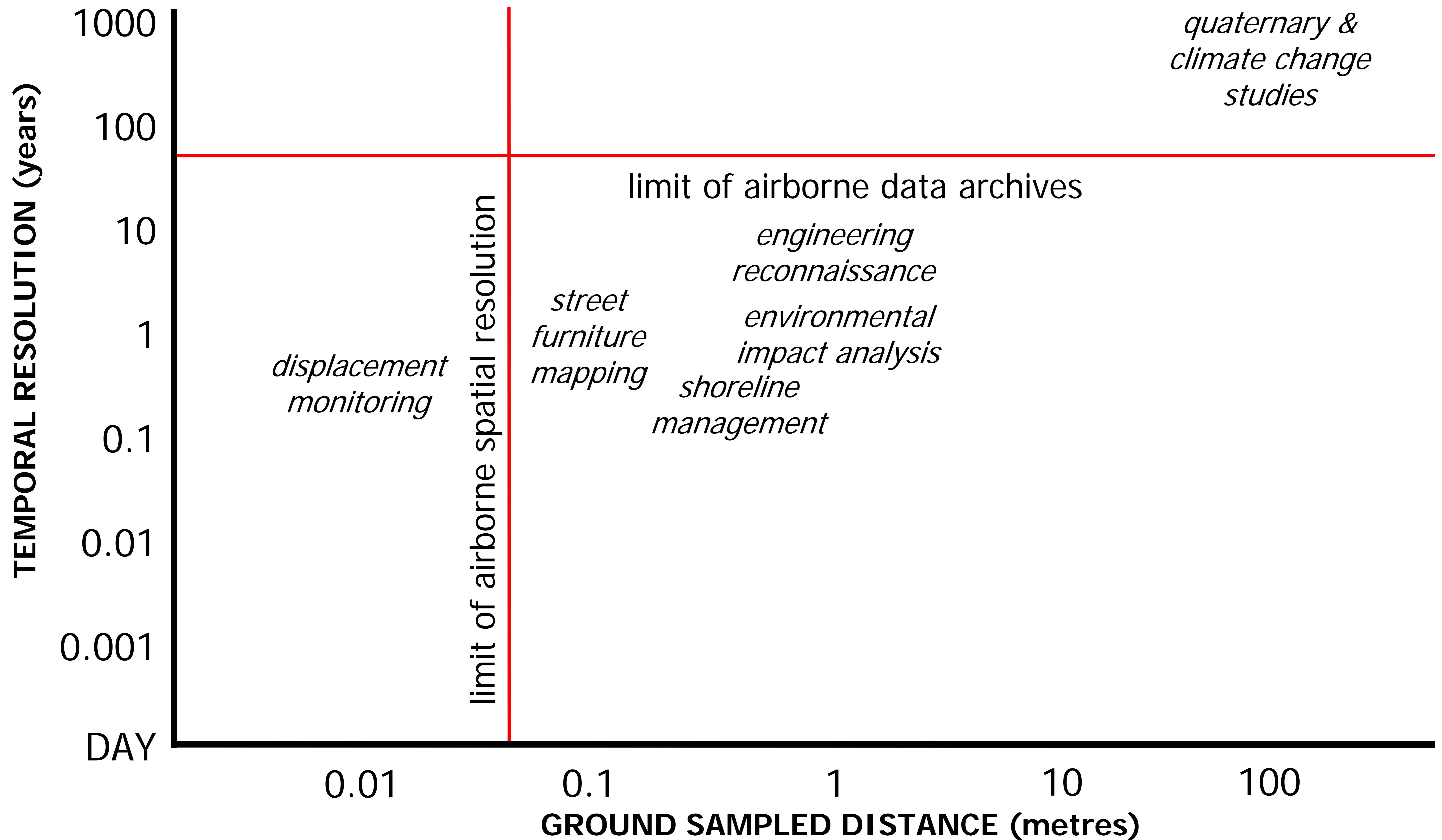
Map Scales and Fitness for Purpose of Use



Spatial, Temporal Resolutions and Suitability of Satellite Data



Spatial, Temporal Resolutions and Suitability of Airborne Data



Slope Angle Thresholds

| Slope Angle | Acceptable Use Without Application of Specialised Equipment or Techniques |
|-------------|---|
| < 1° | Airports, High speed rail transport, Surface irrigation, Sports facilities |
| < 3° | Expressways, Airstrips, Canals |
| < 5° | Major Roads, Railways, Industrial sites, Limit of standard heavy agricultural machinery |
| < 11° | Site development, Housing development, Limit of standard wheeled tractors |