

Remote sensing for crop detection

RESAS

Rural & Environmental Science
and Analytical Services



@SGRESAS

Pacioli 27



EDiNA



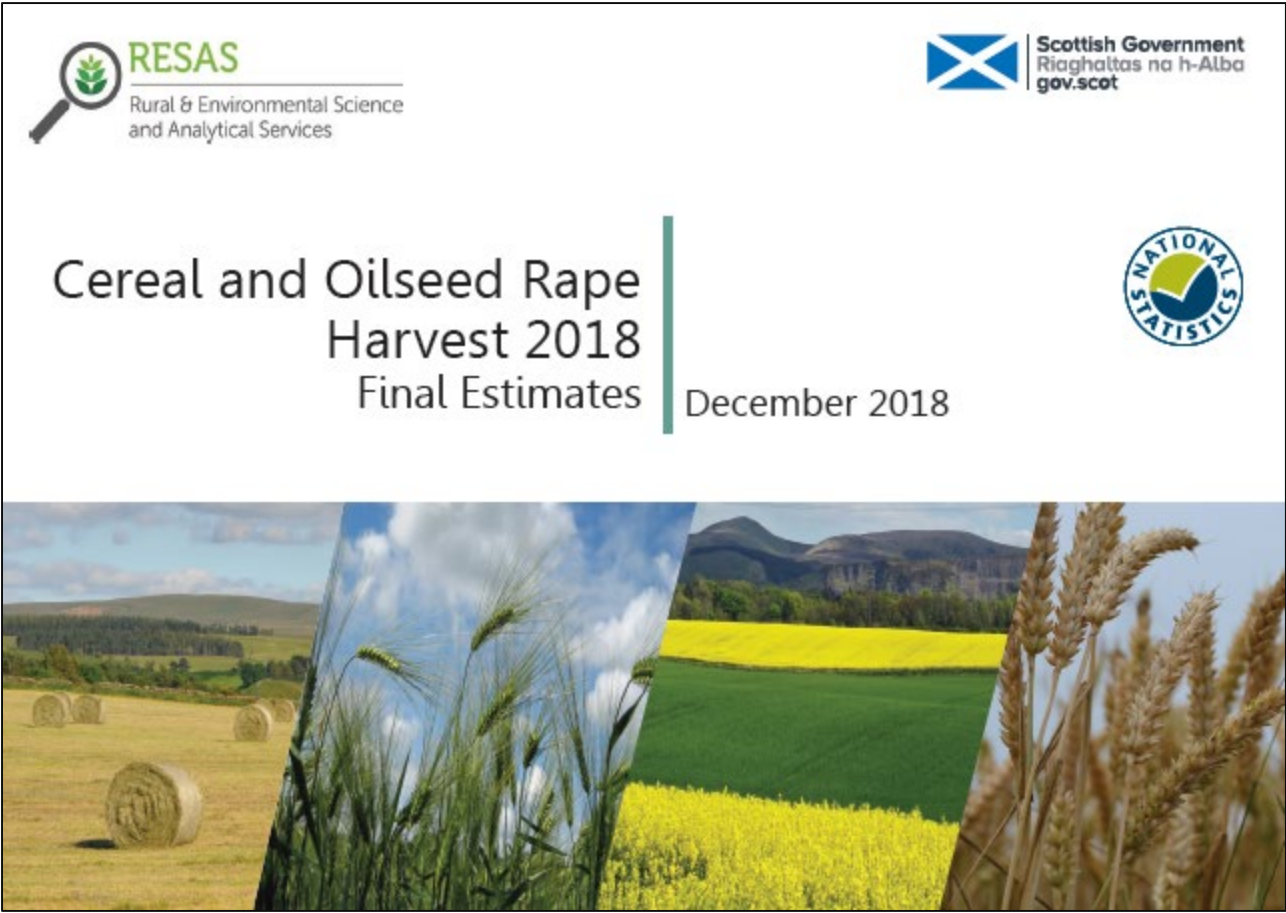
THE UNIVERSITY of EDINBURGH



Scottish Government
Riaghaltas na h-Alba
gov.scot

National Statistics – Crops in Scotland

Cereal and Oilseed Harvest 2018 – Final Estimates



Spring barley

Area: ↑ 3% to 250,500 hectares
Spring barley accounts for 55% of Scotland's cereal area

Yield: ↓ 6% to 5.5 tonnes per hectare
Possibly due to poor performance of spring barley sown early in the year

Production: ↓ 3% to 1.3 million tonnes
About a half of barley produced is used for the drinks industry, with most of the rest used for animal feed

Wheat

Area: ↓ 9% to 99,800 hectares
Yield: ↓ 16% to 6.8 t/ha
Production: ↓ 23% to 681,000 tonnes

Wheat accounts for 26% of Scotland's cereal production. Most wheat is used for distilling or in animal feed

Winter barley

Area: ↓ 21% to 37,500 ha
Yield: ↓ 4% to 7.1 t/ha
Production: ↓ 24% to 268,100t

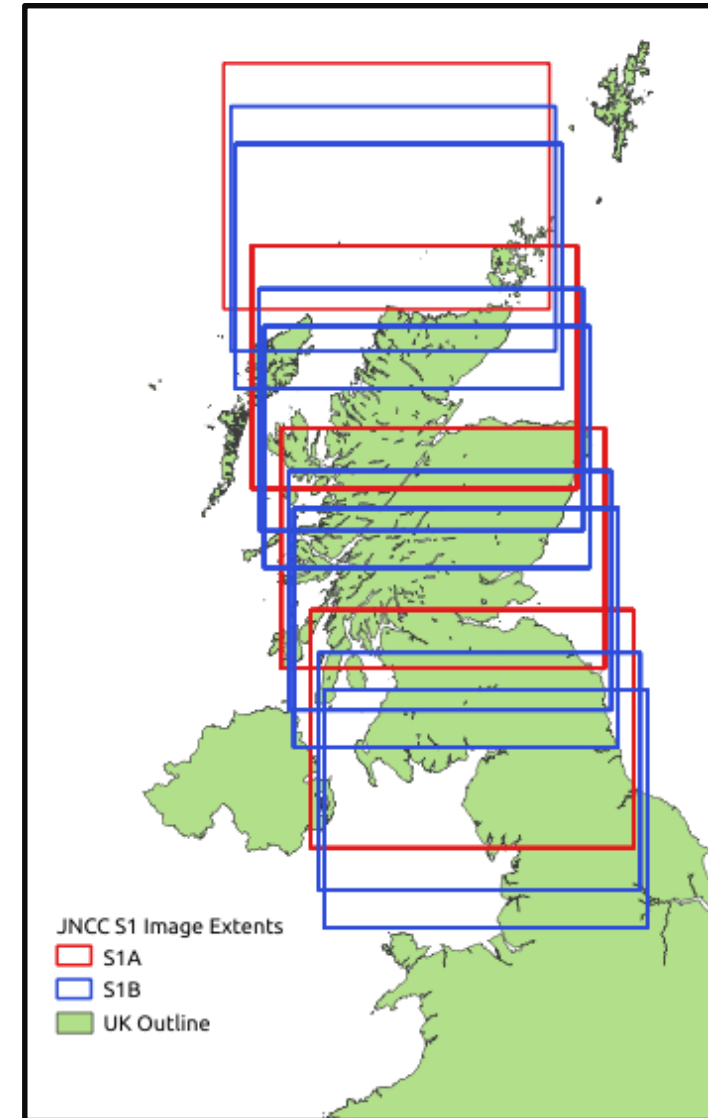
Oats

Area: ↓ 2% to 32,100 ha
Yield: ↓ 3% to 5.5 t/ha
Production: ↓ 5% to 175,800t

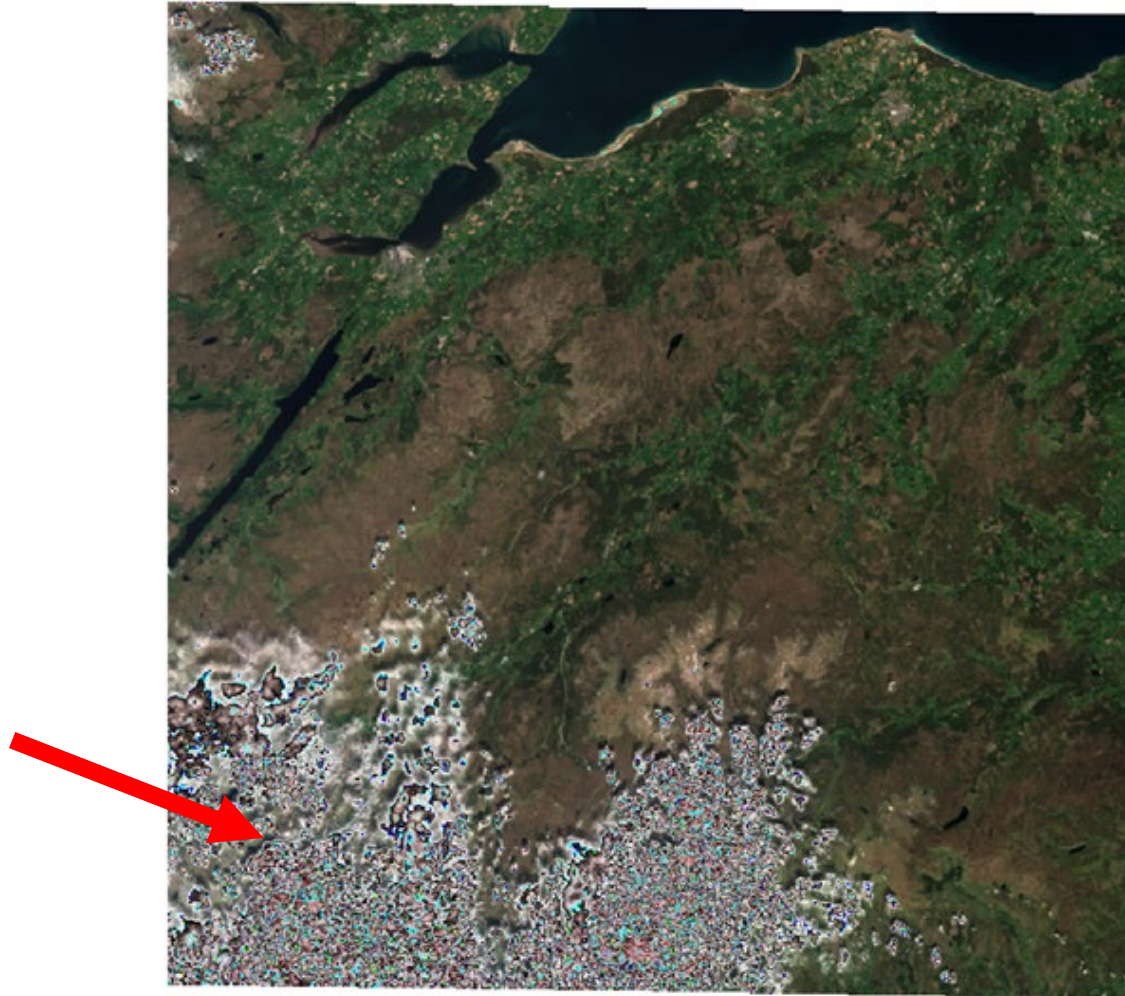
Oilseed

Area: ↓ 4% to 32,700 ha
Yield: ↓ 8% to 3.9 t/ha
Production: ↓ 12% to 126,300t

Sentinel Earth Observation



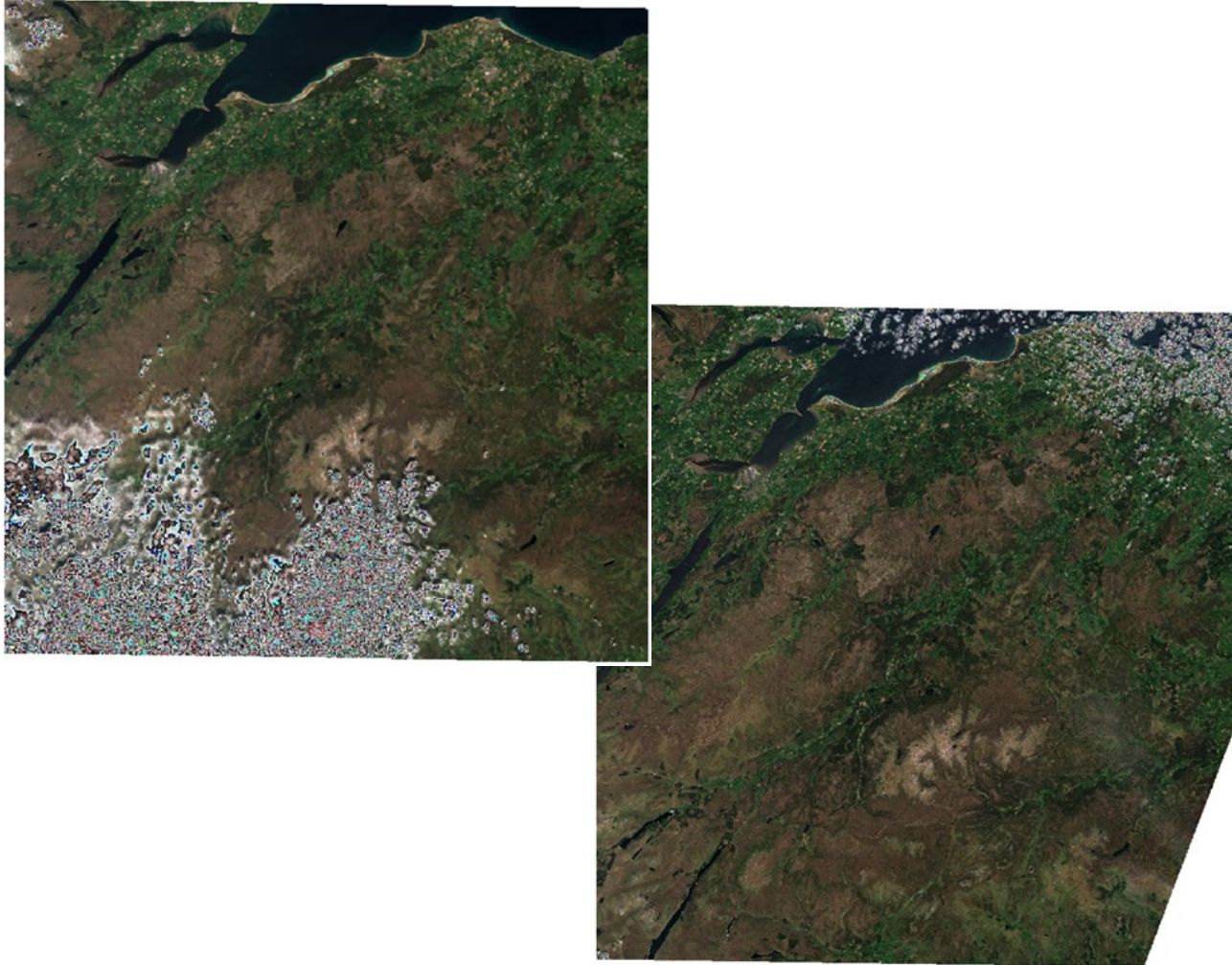
Scotland is cloudy



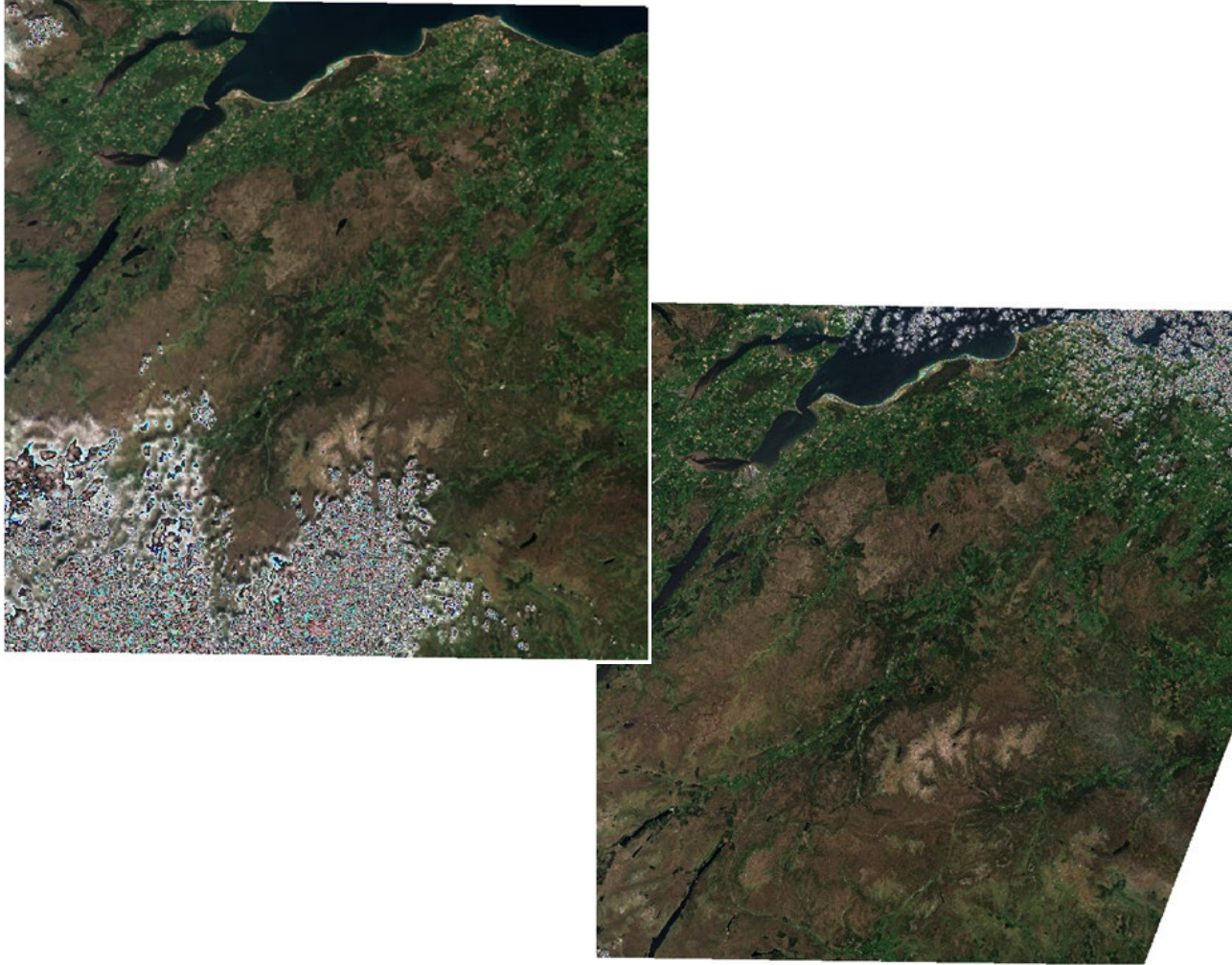
Sentinel Radar Images



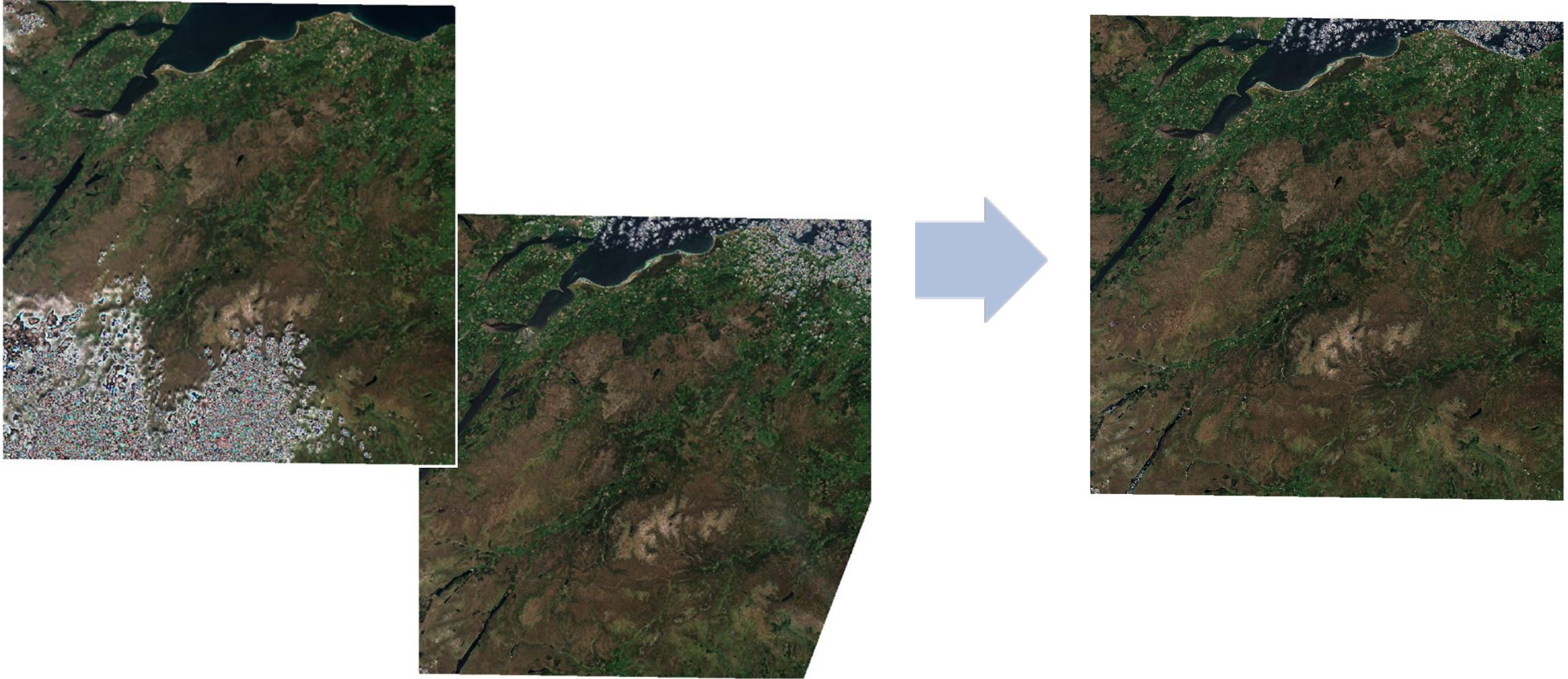
Scotland is cloudy



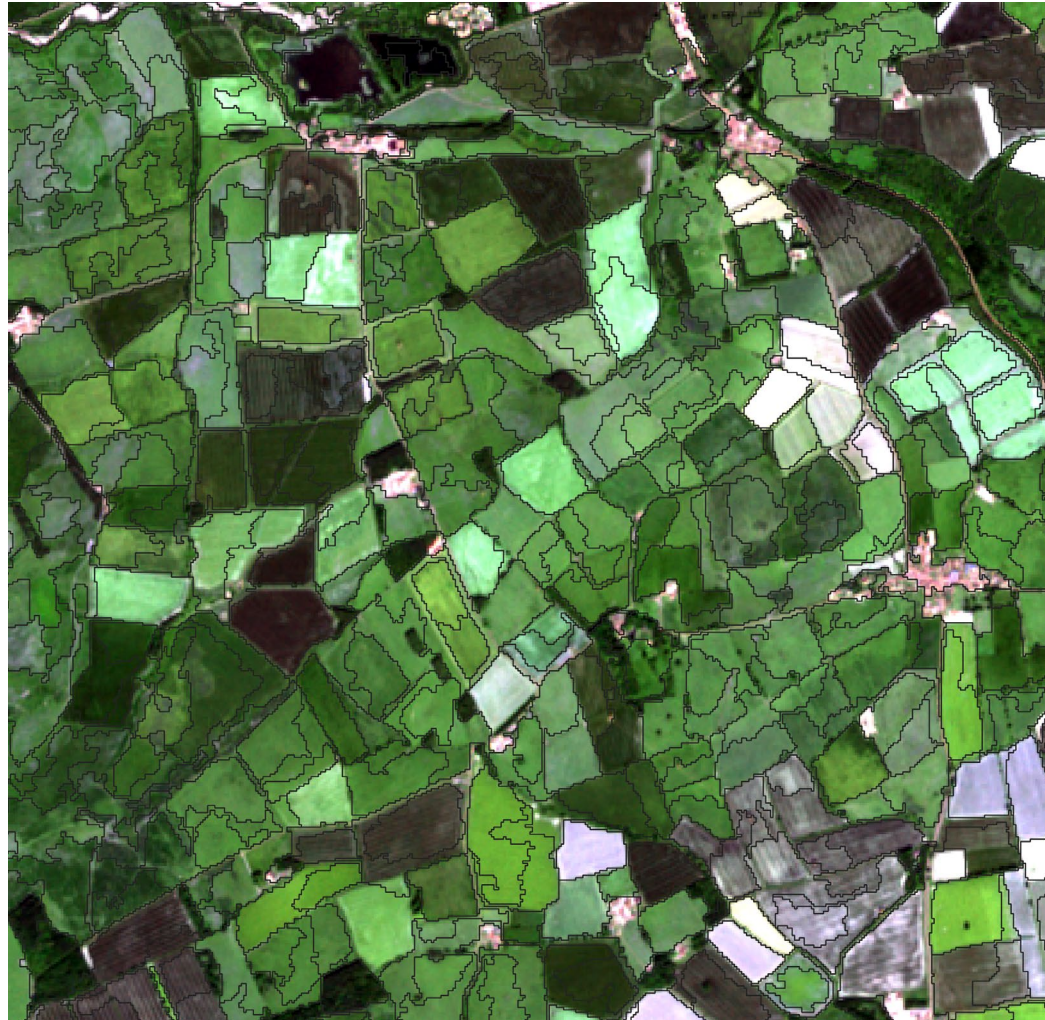
Scotland is cloudy – but we do need some images



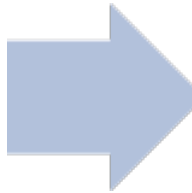
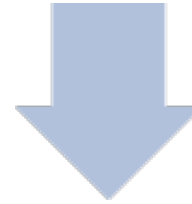
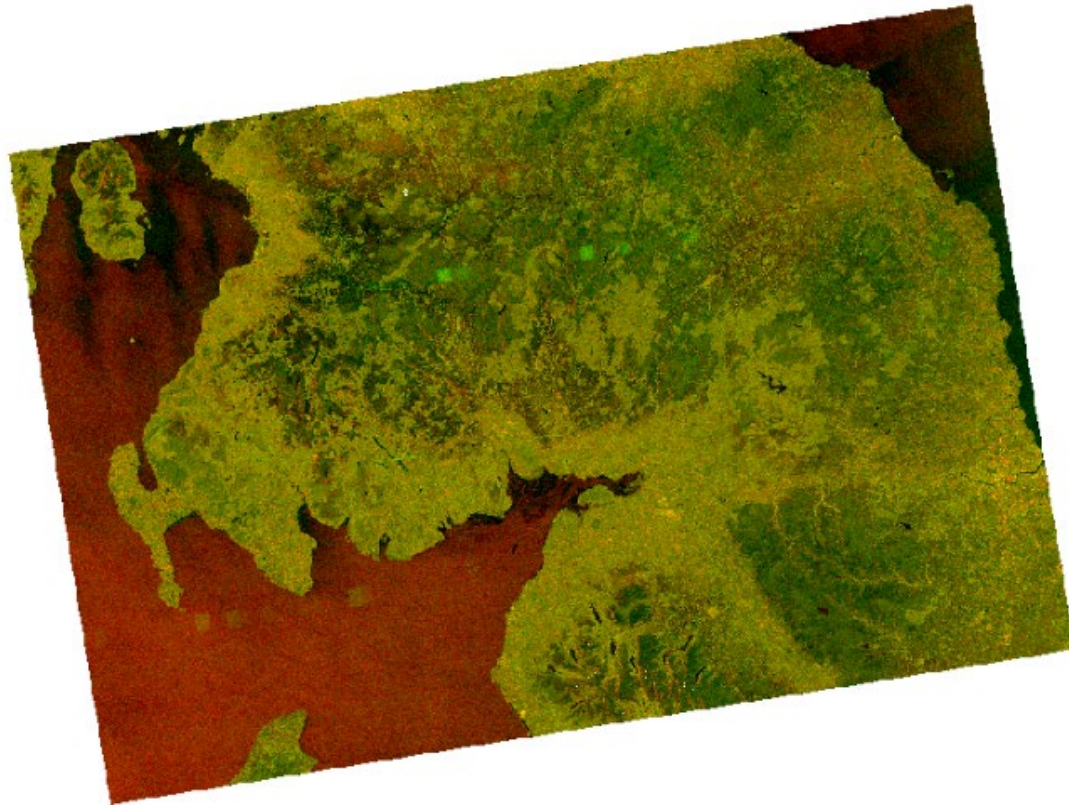
Creating a cloud free composite



Finding the fields



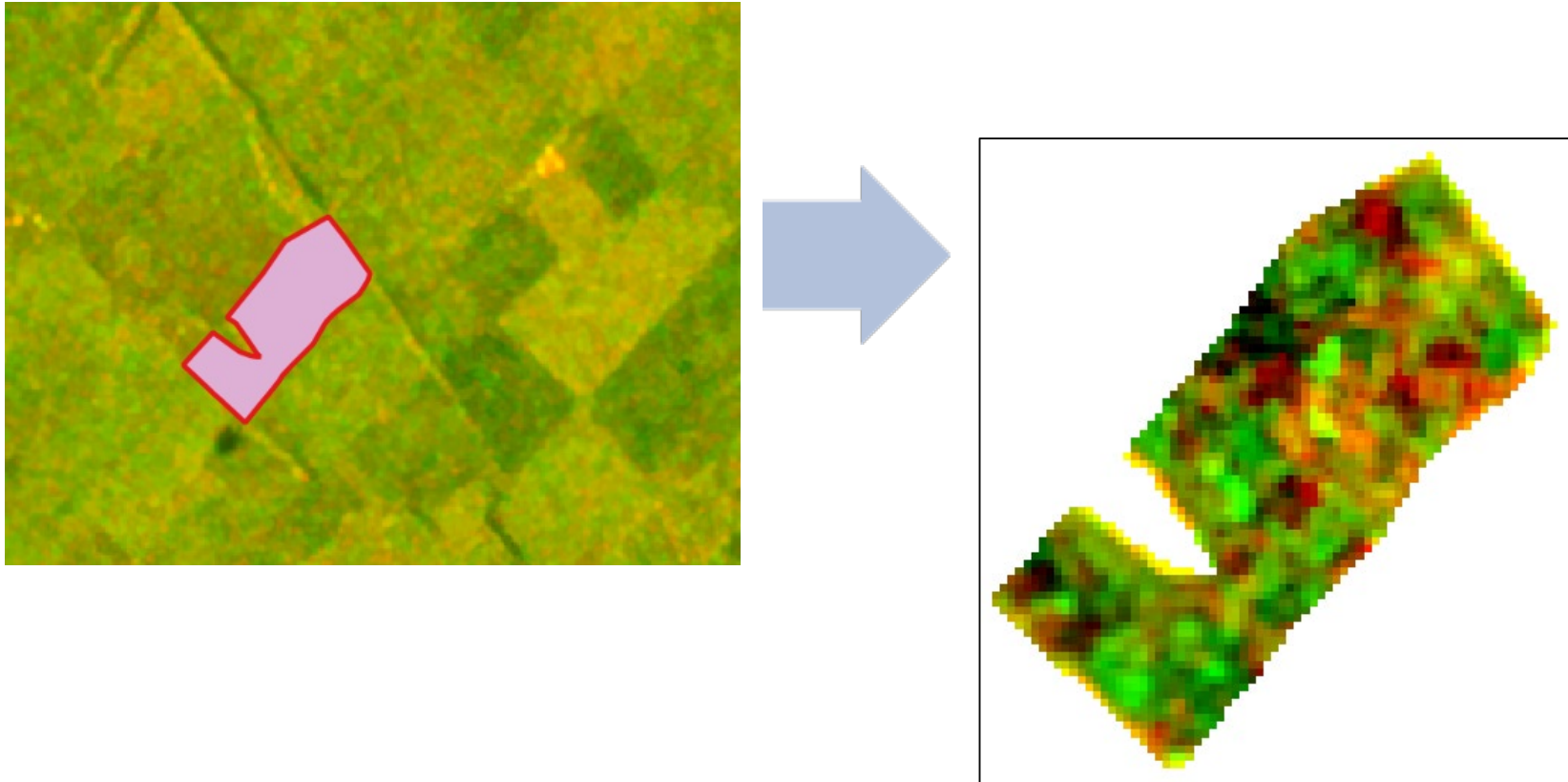
Selecting each field



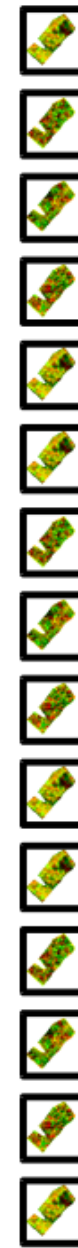
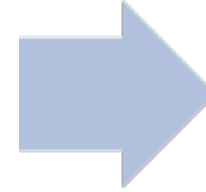
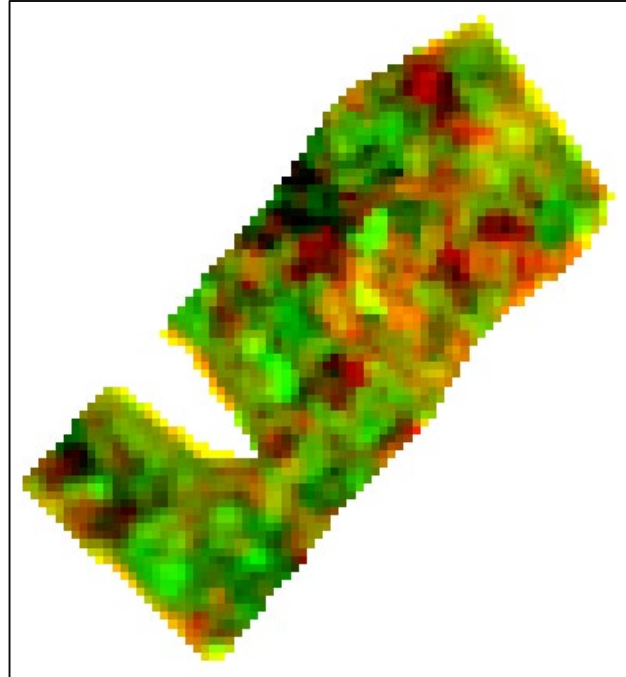
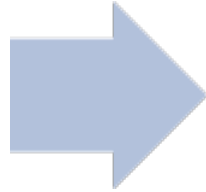
Calculating statistics for that field



Calculating statistics for that field

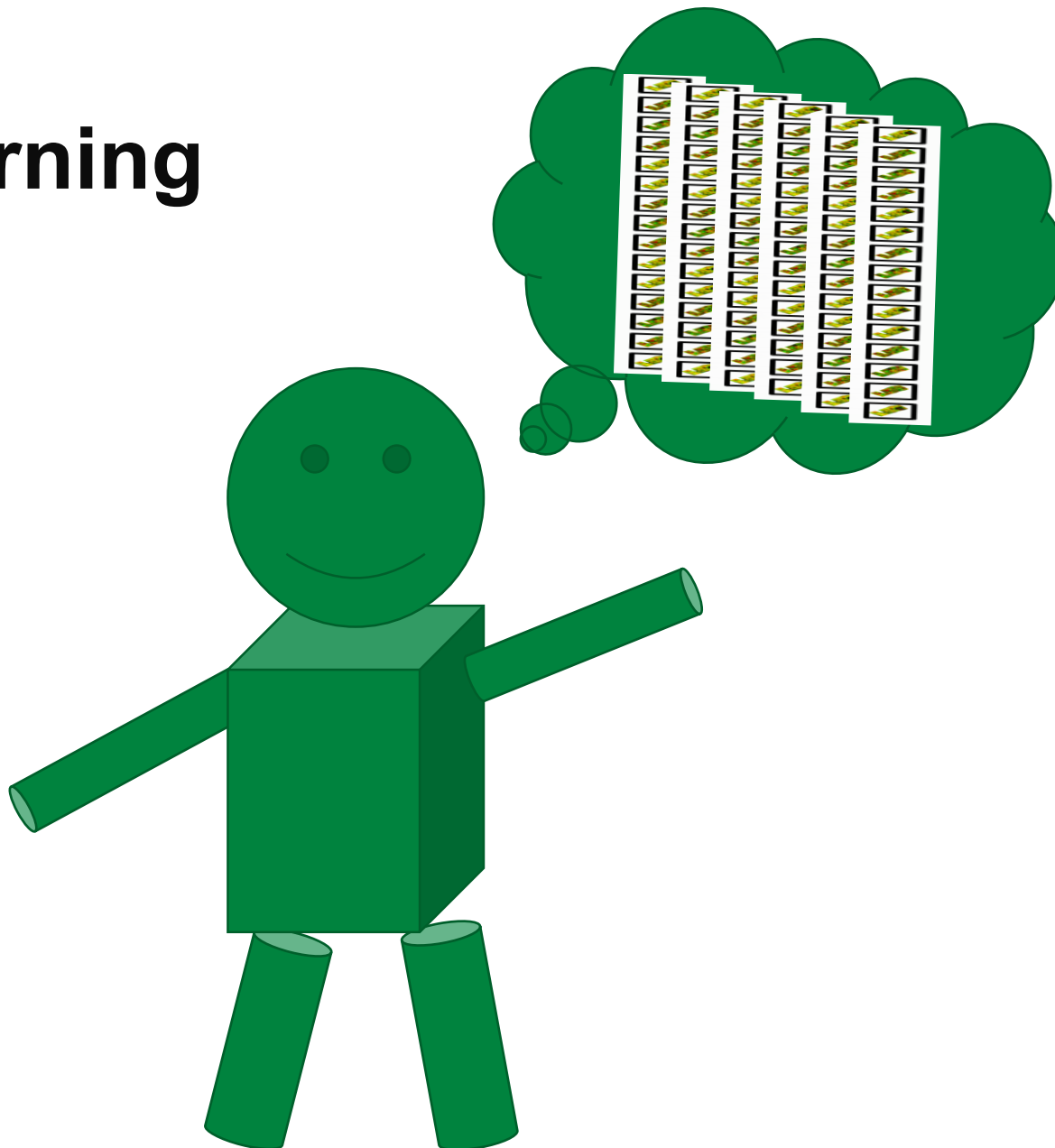


Producing a series of values throughout the growing season

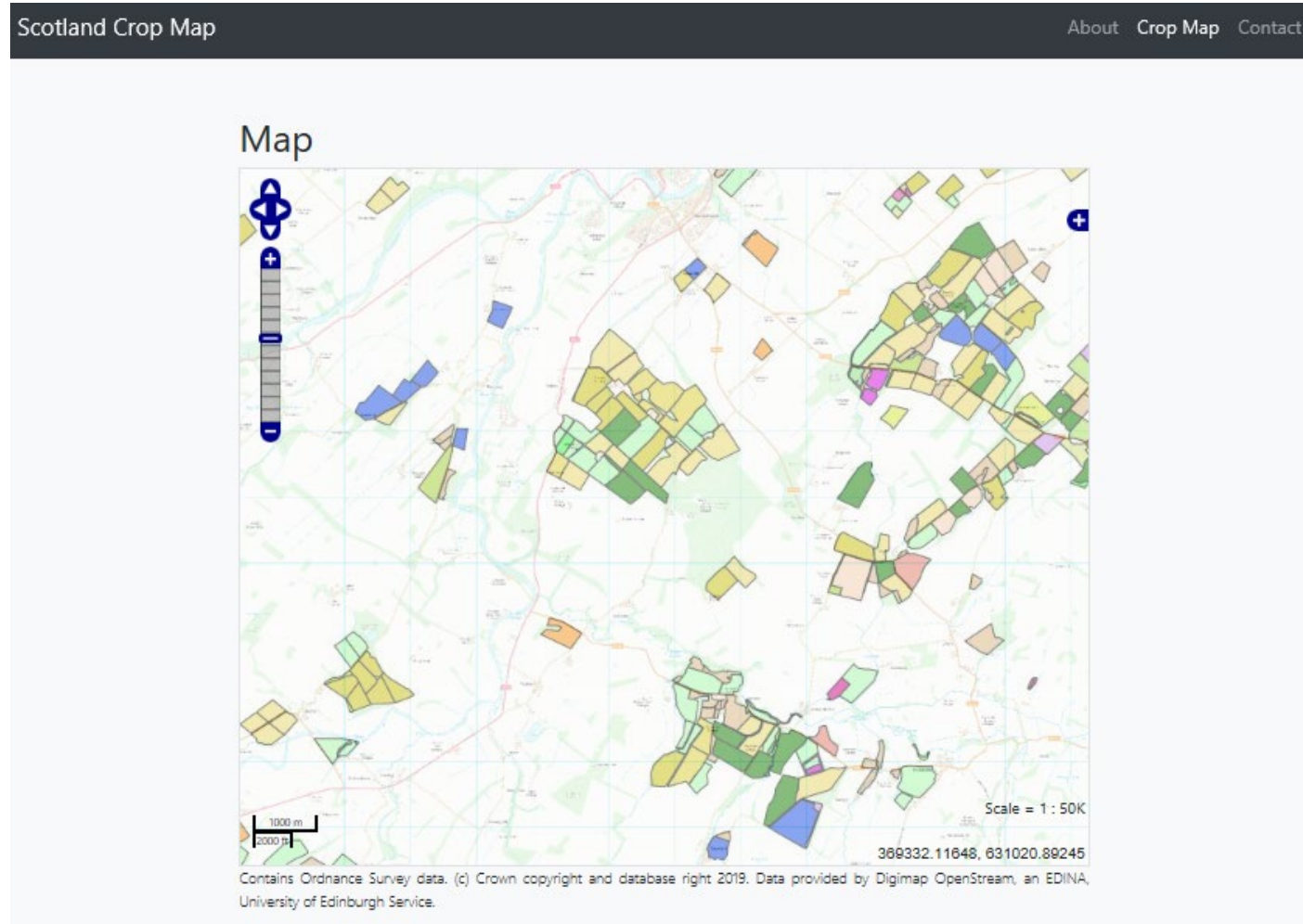




Machine Learning



An interactive crop map for Scotland



Thank you for listening