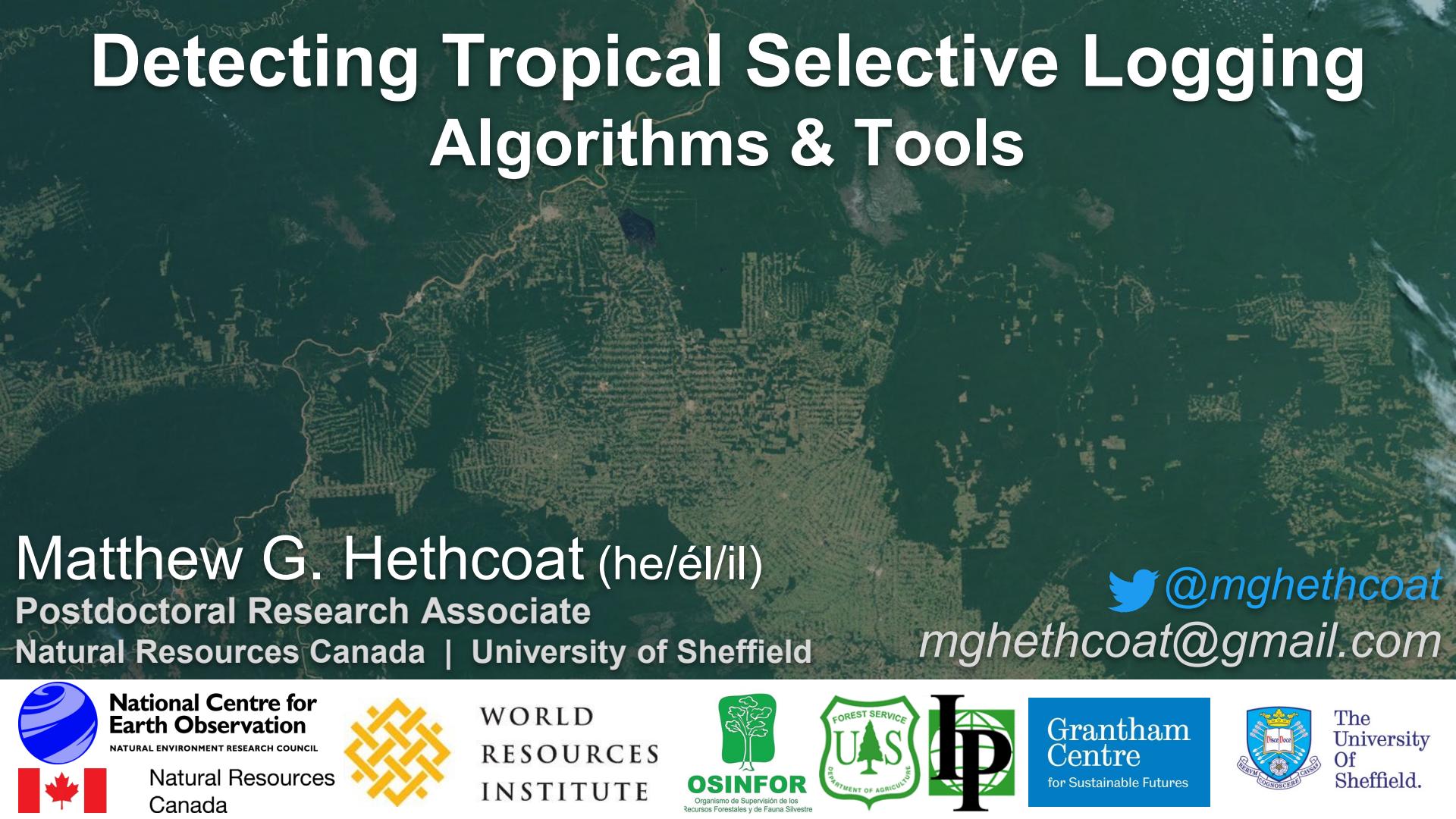


Detecting Tropical Selective Logging Algorithms & Tools



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Tropical Forest

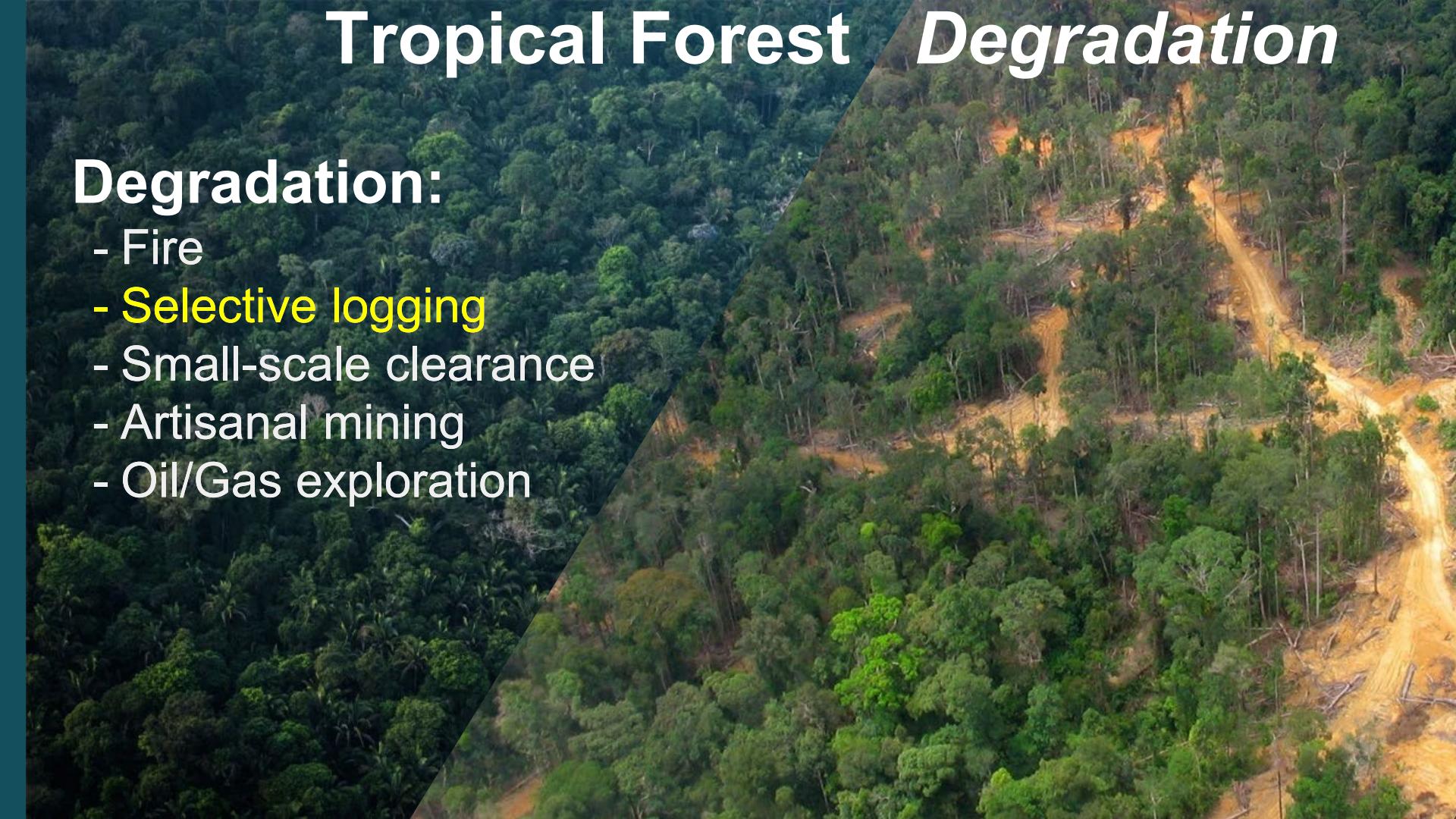
- Carbon & Hydrologic cycles
- Ecosystem Functions & Services
- Biodiversity
- Local livelihoods & economy
- Global

Tropical Forest Losses

> 2.2 million km² since 1990



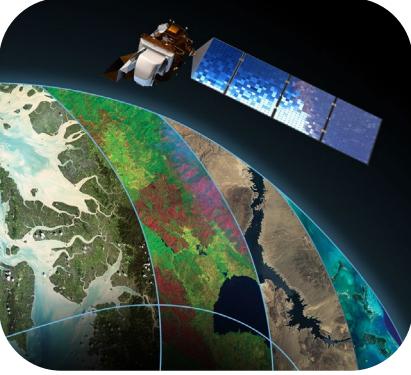
Tropical Forest *Degradation*

An aerial photograph of a tropical forest landscape. The left side of the image shows dense green forest covering a hillside. The right side shows a large area where the forest has been cleared, revealing bright yellow-orange soil. A winding dirt road cuts through the cleared land. Some remaining trees stand as isolated sentinels in the degraded areas.

Degradation:

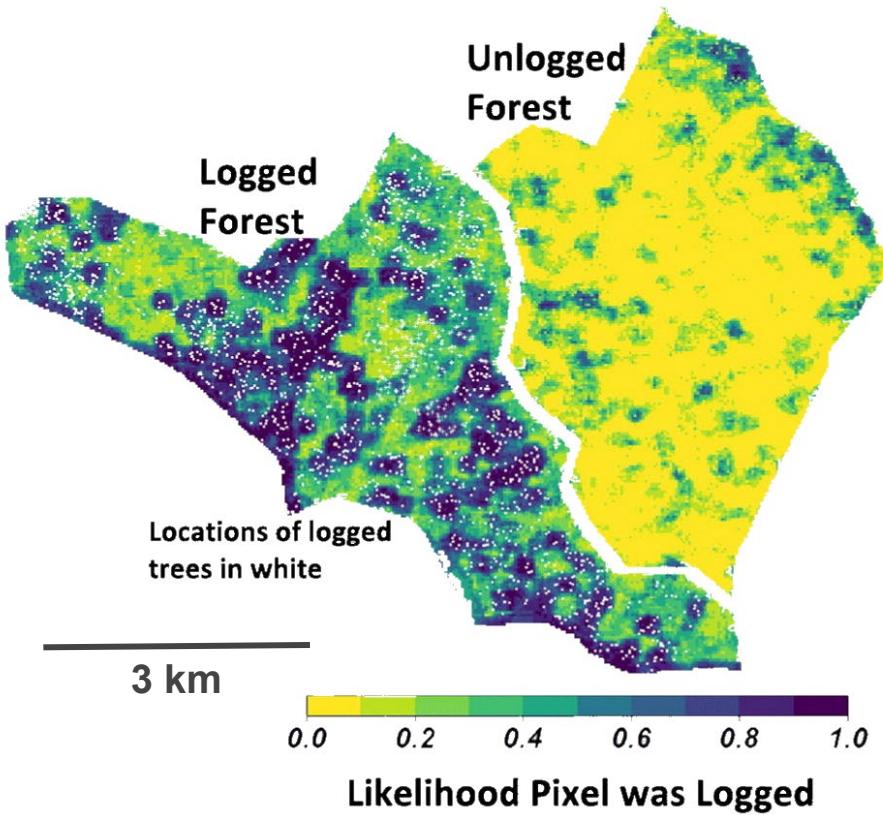
- Fire
- Selective logging
- Small-scale clearance
- Artisanal mining
- Oil/Gas exploration

Improving the detection & mapping of tropical selective logging



Hethcoat et al. 2019, *Remote Sensing of Environment*
Hethcoat et al. 2020, *Environmental Research Letters*
Hethcoat et al. 2021, *Remote Sensing of Environment*
Hethcoat et al. 2022, *Remote Sensing*

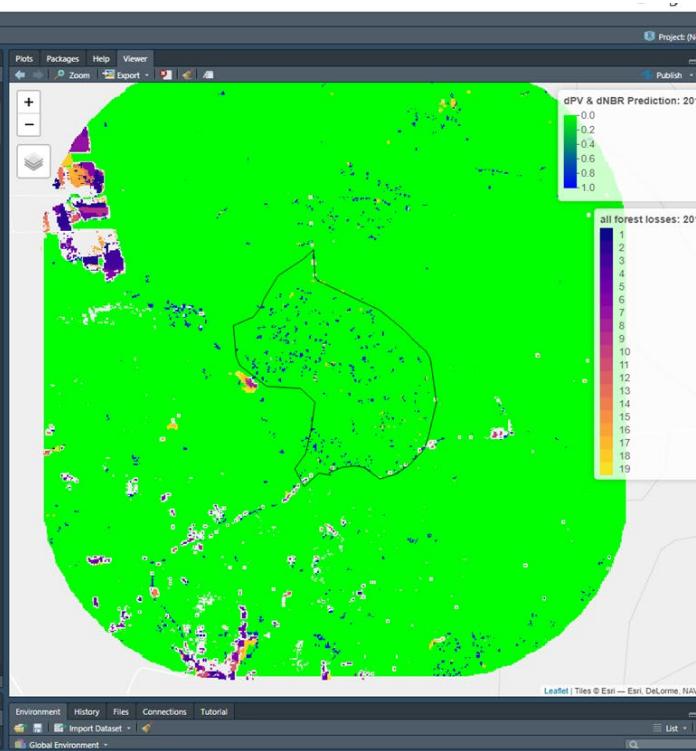
Improving the detection & mapping of tropical selective logging



Hethcoat et al. 2019, *Remote Sensing of Environment*
Hethcoat et al. 2020, *Environmental Research Letters*
Hethcoat et al. 2021, *Remote Sensing of Environment*
Hethcoat et al. 2022, *Remote Sensing*



Initially there was too much coding...



We have developed 2 web-based apps:

Landsat - Optical imagery

Basically an expensive digital camera
(40+ year history - 30 meter pixels)

Earth Engine Apps

OSINFOR
Supervisión Remota de La Tala Selectiva

Enlace a instrucciones (en español)

Inicio del período:
2021-11-01

Final del período:
2022-03-31

Selección de mapa forestal:
Global Forest Watch (2000 - 2021)

Año del mapa forestal (1985 - 2021):
2019

Ingrese la región de interés (con geoJSON o dibujar polí):
copia geoJSON y pega aquí (NOTA: en lat/long)

<https://mghethcoat.users.earthengine.app/view/osinfortestv2>

Sentinel-1 - Radar imagery

Transmits energy and records returned signal
(penetrates clouds - 10 meter pixels)

Earth Engine Apps

OSINFOR - SAR (todavía beta)

Enlace a instrucciones (en español)

Seleccionar órbita (Descendente o Ascendente)
Descendente

Inicio del período:
2021-11-01

Final del período:
2022-03-31

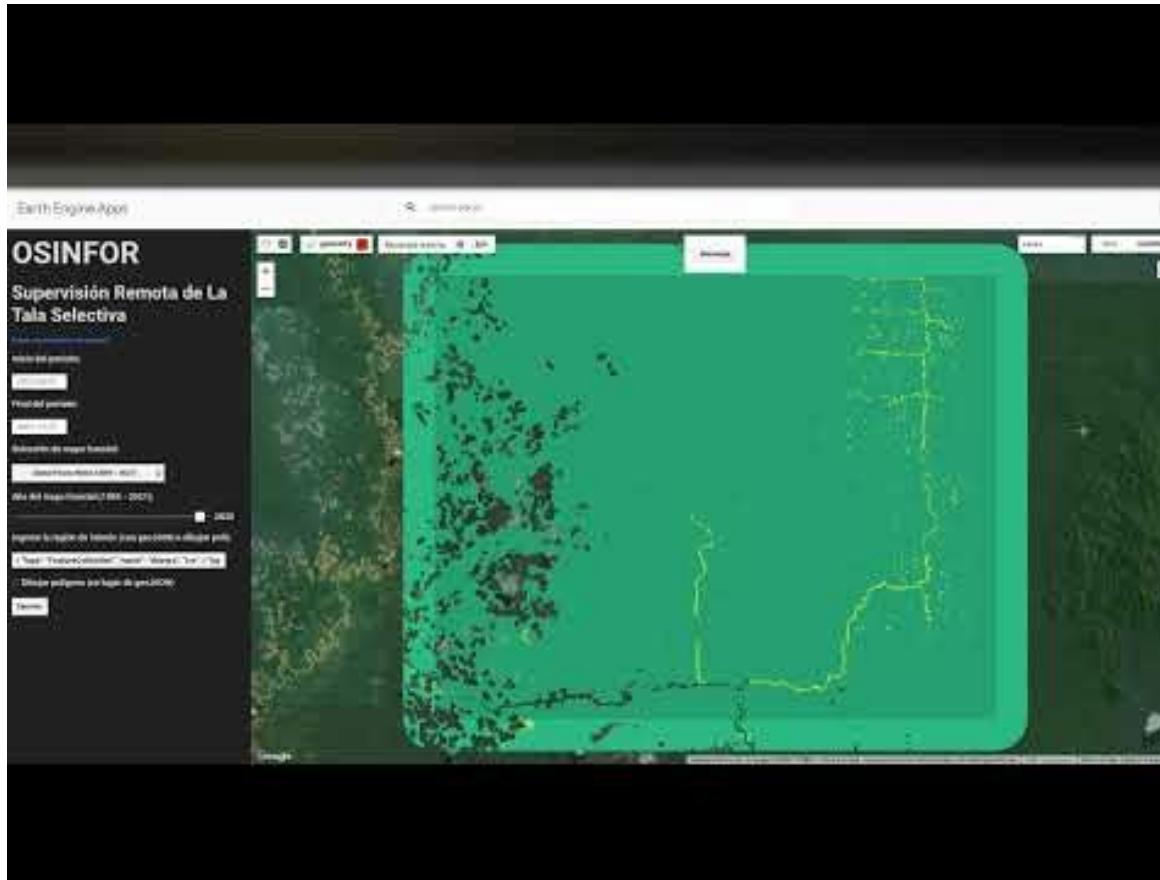
Selección de mapa forestal:
Global Forest Watch (2018 - 2021)

Año del mapa forestal (2018 - 2021):
2021

Ingrese la región de interés (con geoJSON o dibujar polí):

<https://mghethcoat.users.earthengine.app/view/osinfor-sarv1>

Example near Pucallpa, Peru



<https://www.youtube.com/watch?v=B0YJCAyqZSg>

The Future of Earth Observation

An impending tsunami of data

