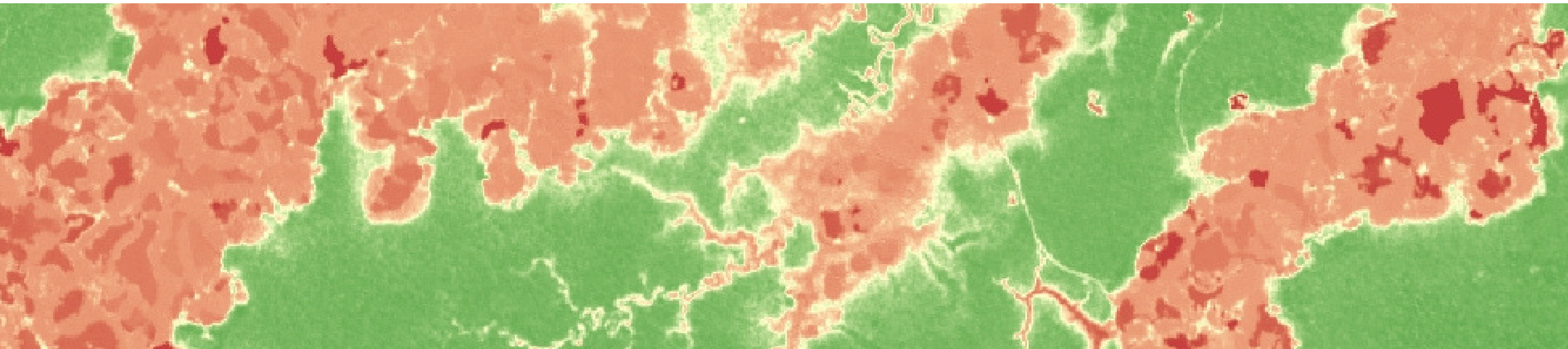


WYKORZYSTANIE METOD TELEDETEKCYJNYCH W ANALIZIE STANU ŚRODOWISKA PRZEKSZTAŁCONEGO NA SKUTEK NIELEGALNEGO WYDOBYCIA ZŁOTA W AMERYCE POŁUDNIOWEJ

KATARZYNA ADAMEK



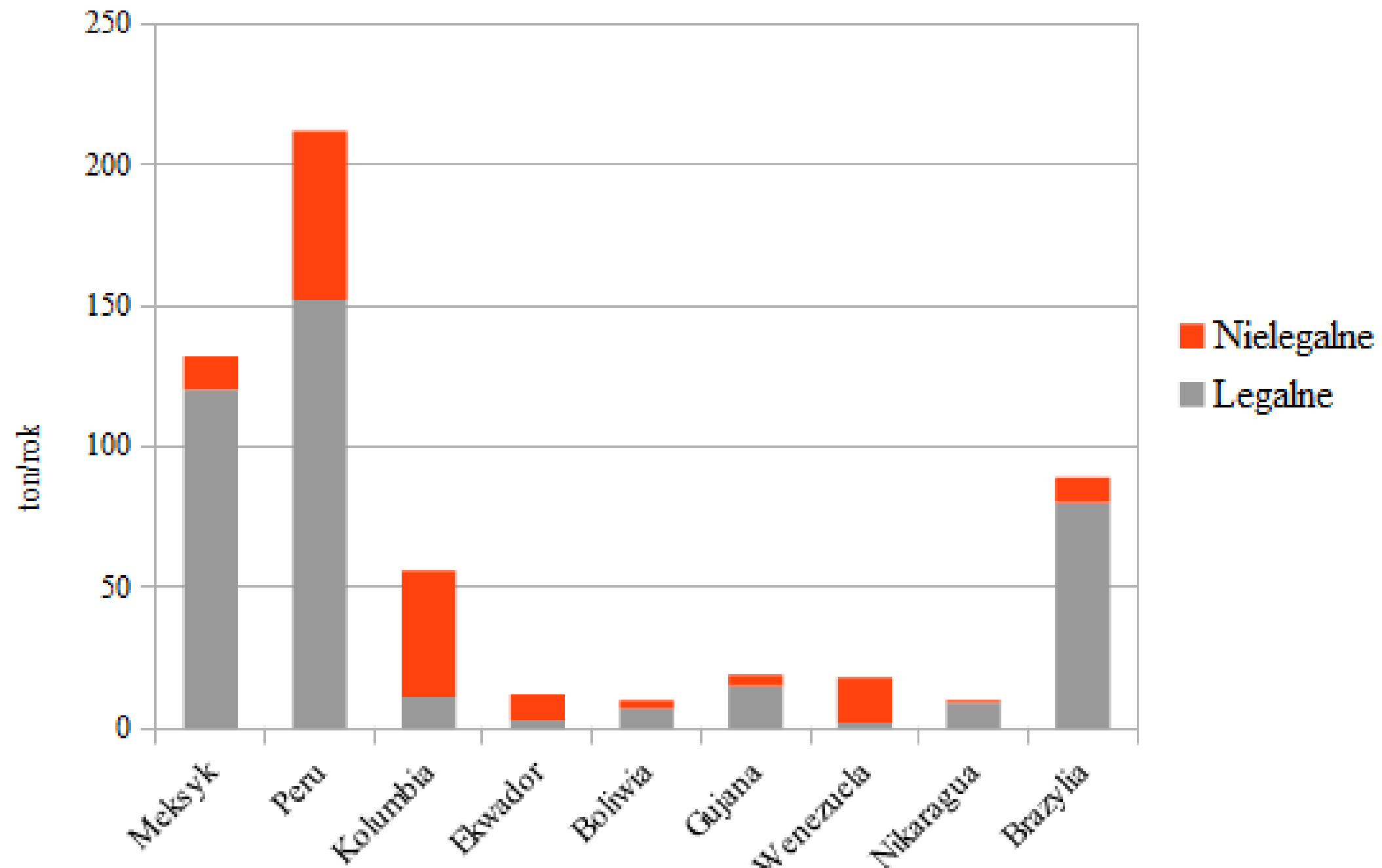
AKADEMIA GÓRNICZO-HUTNICZA IM. STANISŁAWA STASZICA W KRAKOWIE
WYDZIAŁ GEOLOGII, GEOFIZYKI I OCHRONY ŚRODOWISKA
KATEDRA GEOINFORMATYKI I INFORMATYKI STOSOWANEJ



NIELEGALNE WYDOBYCIE ZŁOTA

Wydobycie złota

stan na rok 2013



Źródło: Wagner L., 2016: *Organized Crime and Illegally Mined Gold in Latin America*.
The Global Initiative against Transnational Organized Crime.

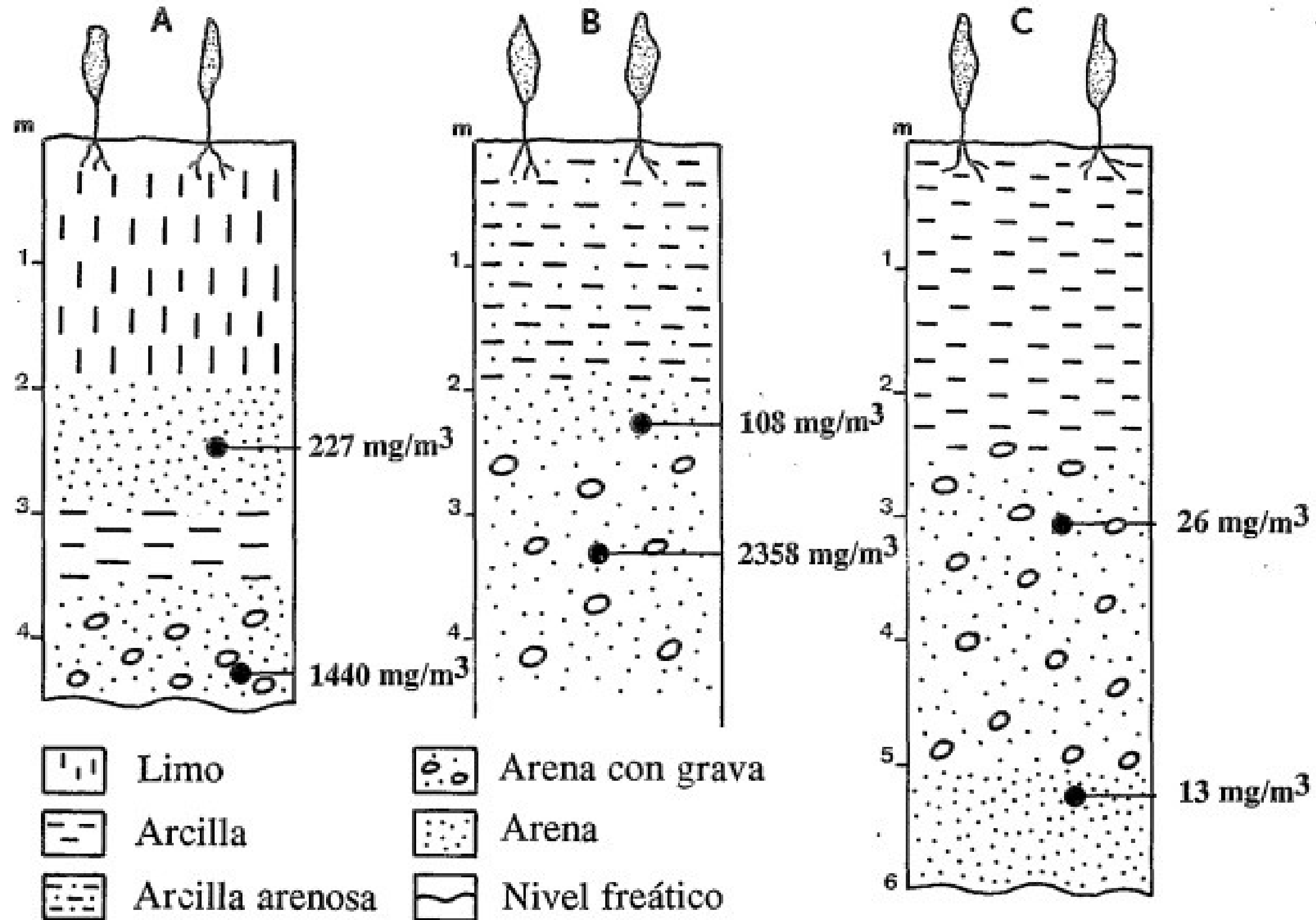
An aerial photograph of a quarry or construction site. The ground is a mix of dirt and gravel. In the center, there are two Volvo excavators, one at the top and one at the bottom, both with their buckets raised. To the left, a yellow wheel loader is visible. The right side of the image shows a large pile of grey gravel. The text is overlaid in the center in a bold, green, sans-serif font.

**CZYM JEST WYDOBYCIE
NIEFORMALNE, CZYM
NIELEGALNE A CZYM
KRYMINALNE?**

OBSZAR BADAŃ - PERU, MADRE DE DIOS



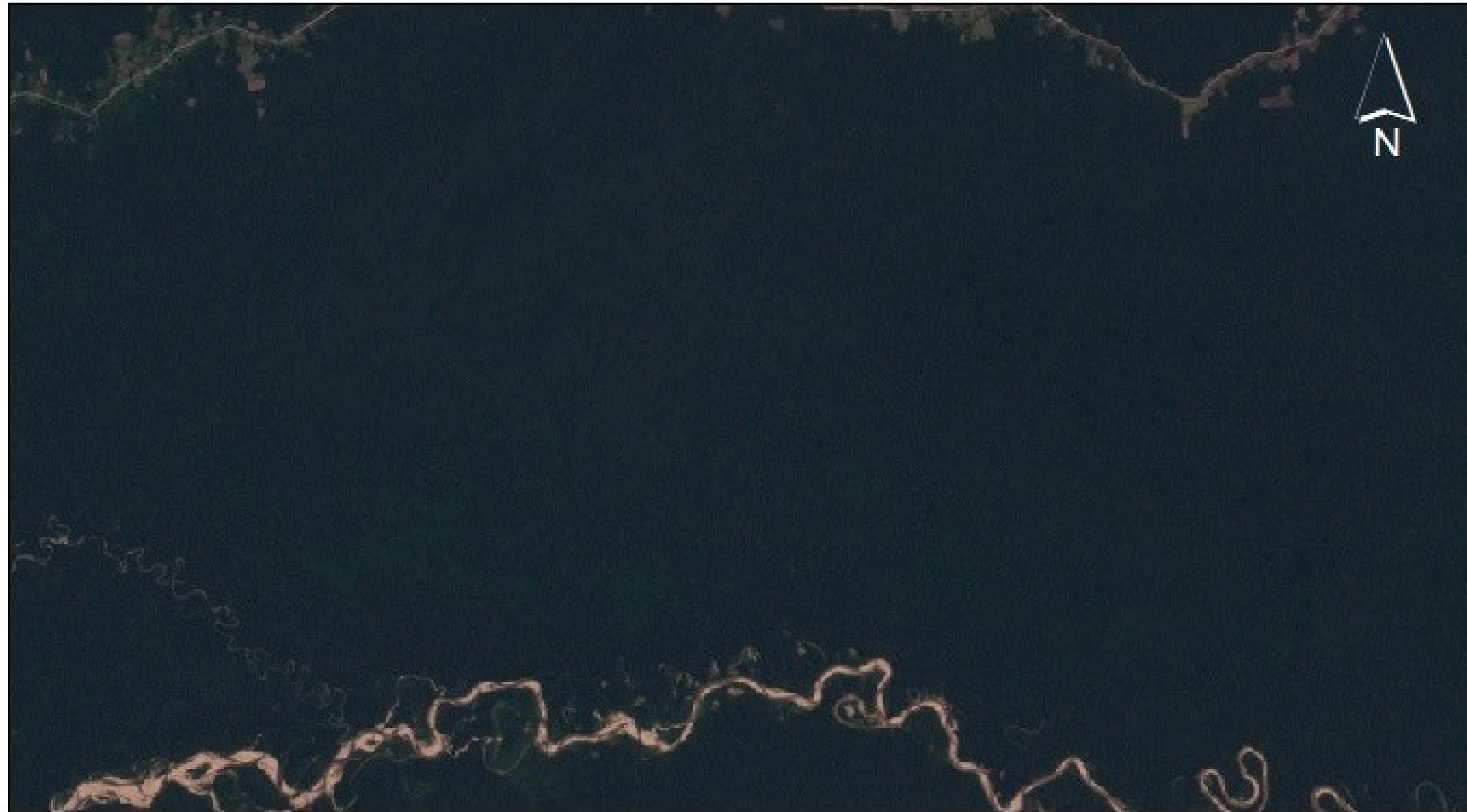
PROFILE Z REJONU MADRE DE DIOS



Limo - muł, Arcilla - glina, Arcilla arenosa - glina zapiaszczona, Arena con grava - piaski ze żwirami, Arena - piaski, Nivel freático - zwierciadło wód podziemnych

SIERPIEŃ 2001

Zobrazowanie dostarczone przez satelitę Landsat 7



0 2 4 8 km


A horizontal scale bar with four major tick marks labeled 0, 2, 4, and 8 km. The bar is divided into eight equal segments, each representing 1 km.

LIPIEC 2017

Zobrazowanie dostarczone przez satelitę Sentinel-2



0 2 4 8 km

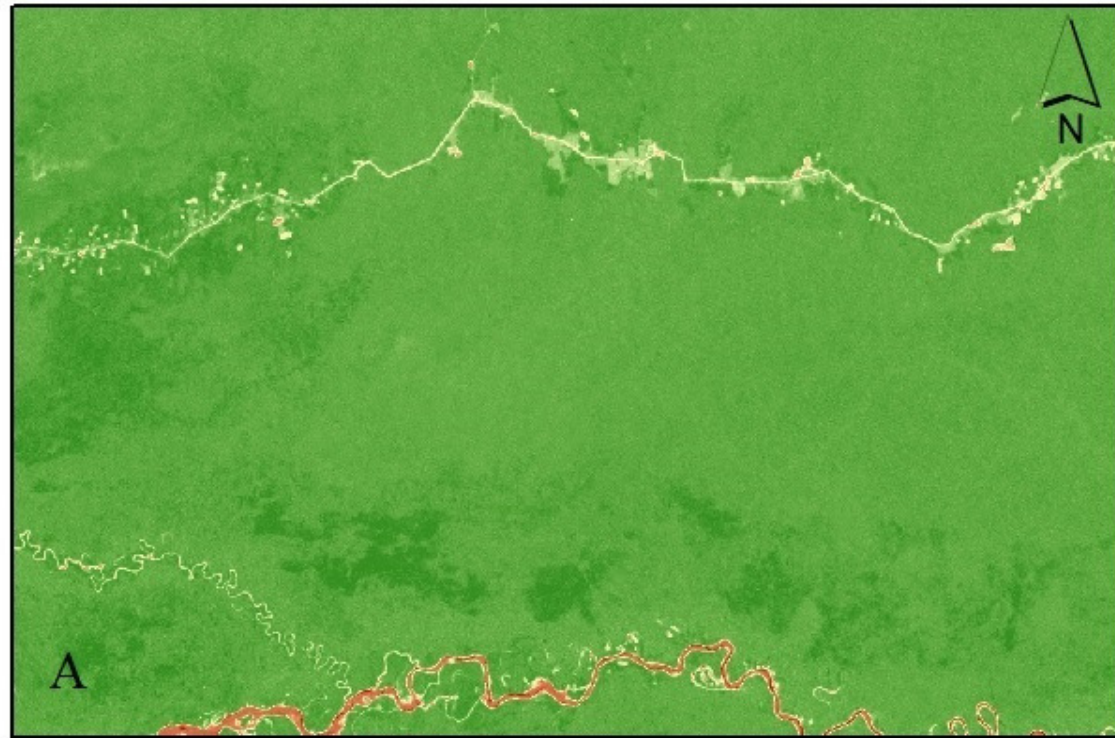




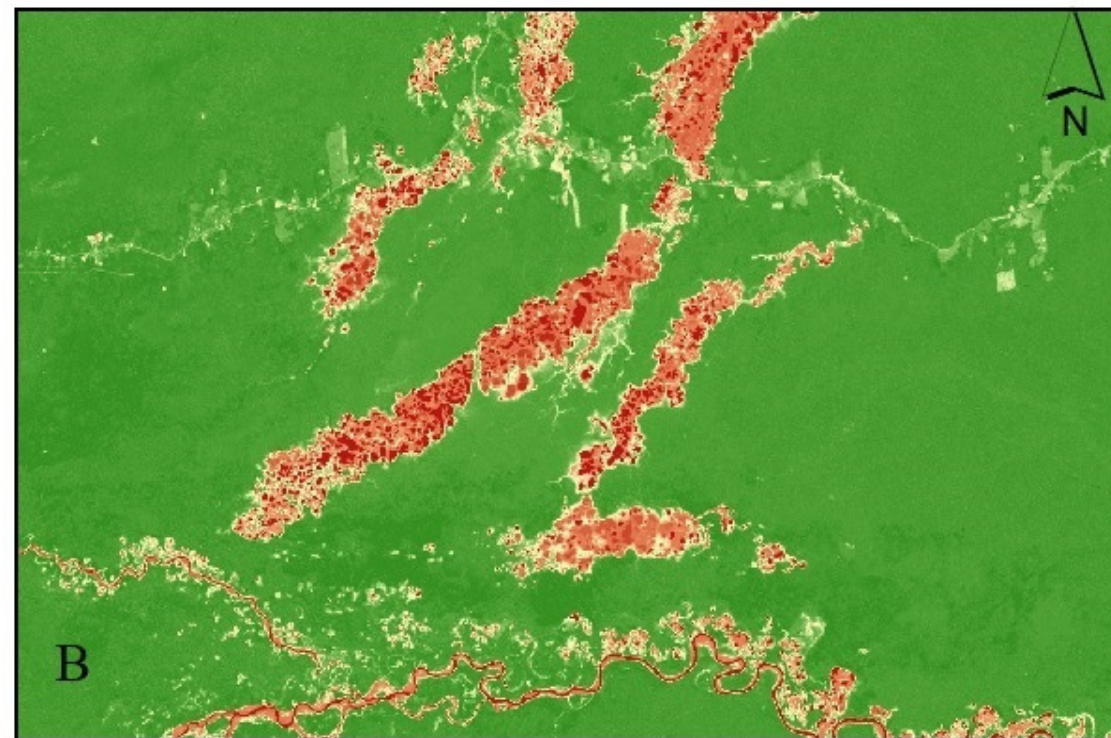
**NDVI - NORMALIZED
DIFFERENCE
VEGETATION INDEX**

NDVI - OBSERWACJA EKSPANSJI KOPALNI

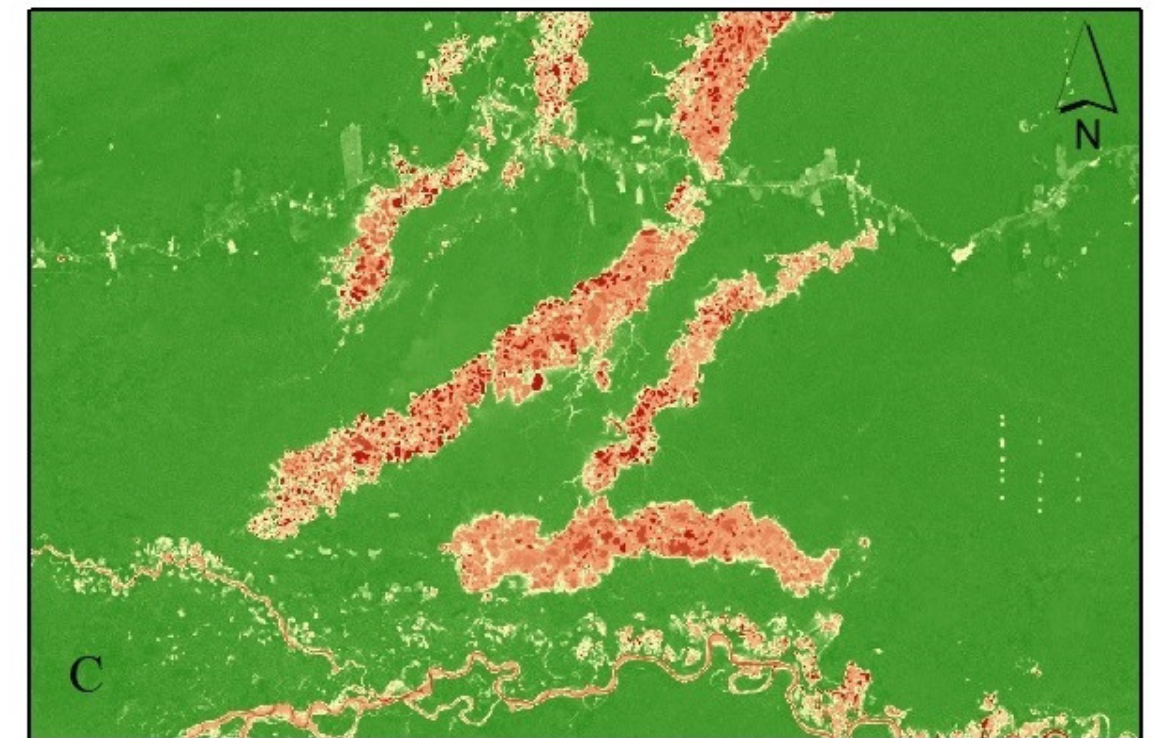
Sierpień 2001



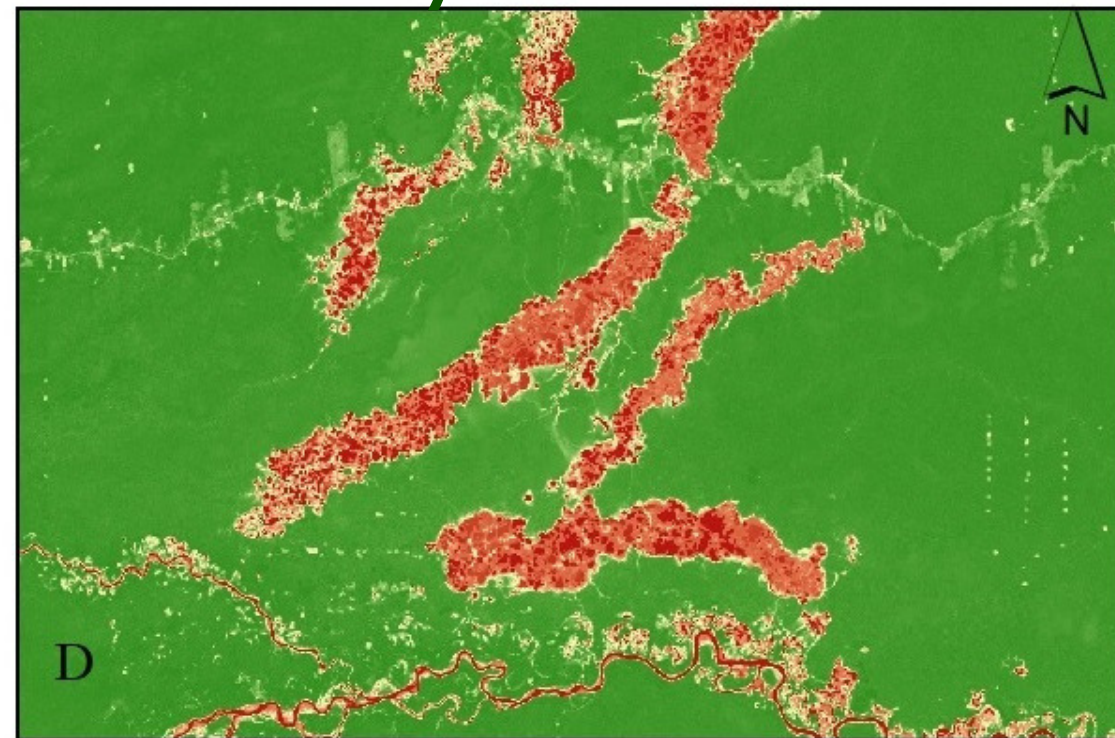
Sierpień 2014



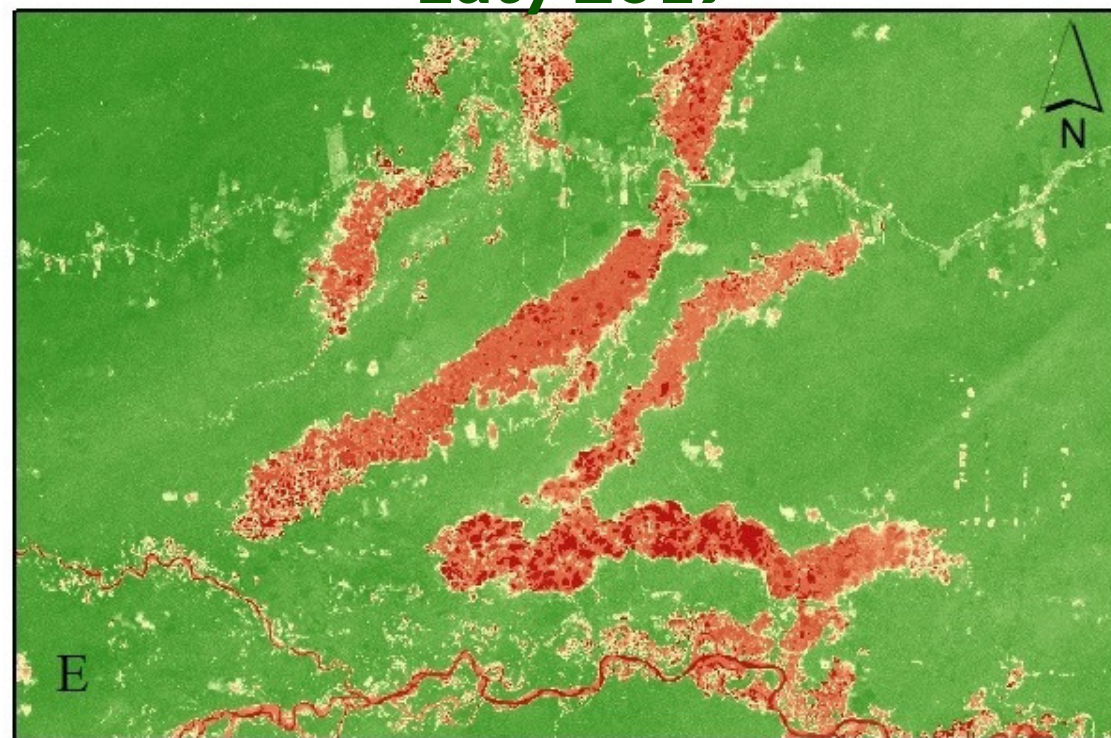
Sierpień 2015



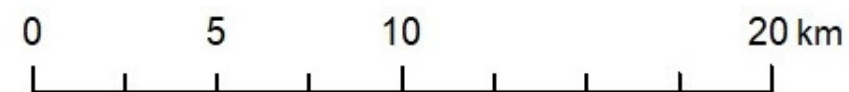
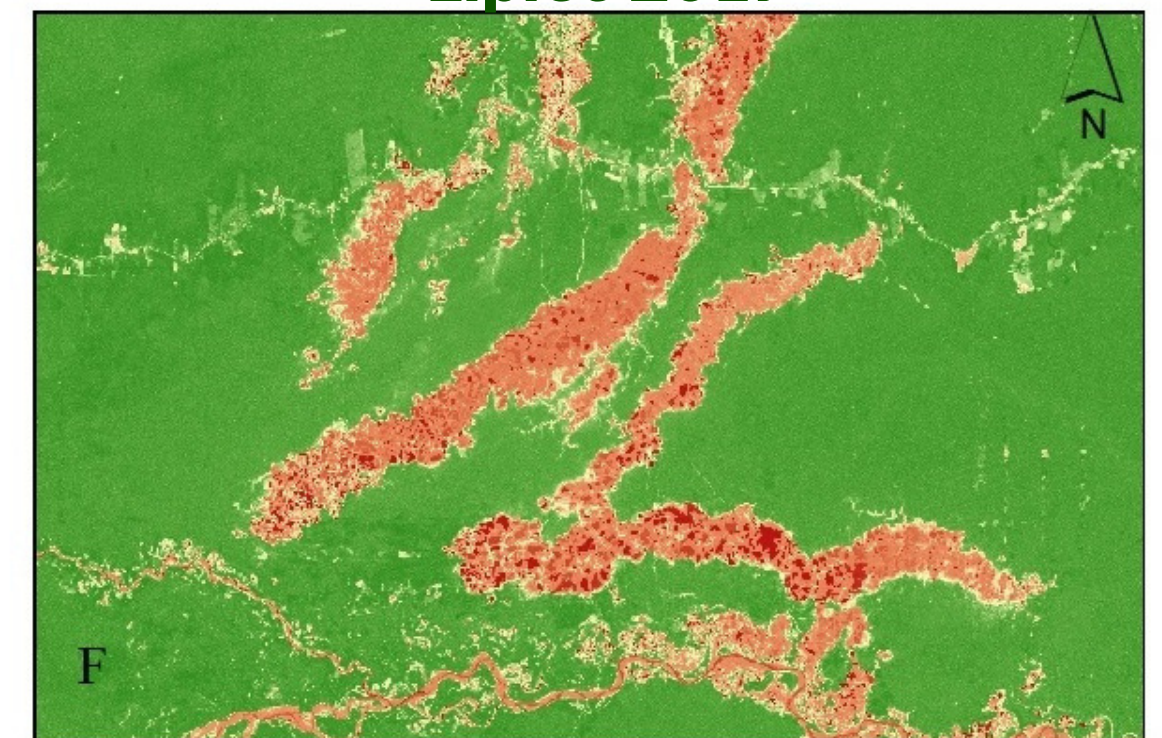
Styczeń 2016




Luty 2017

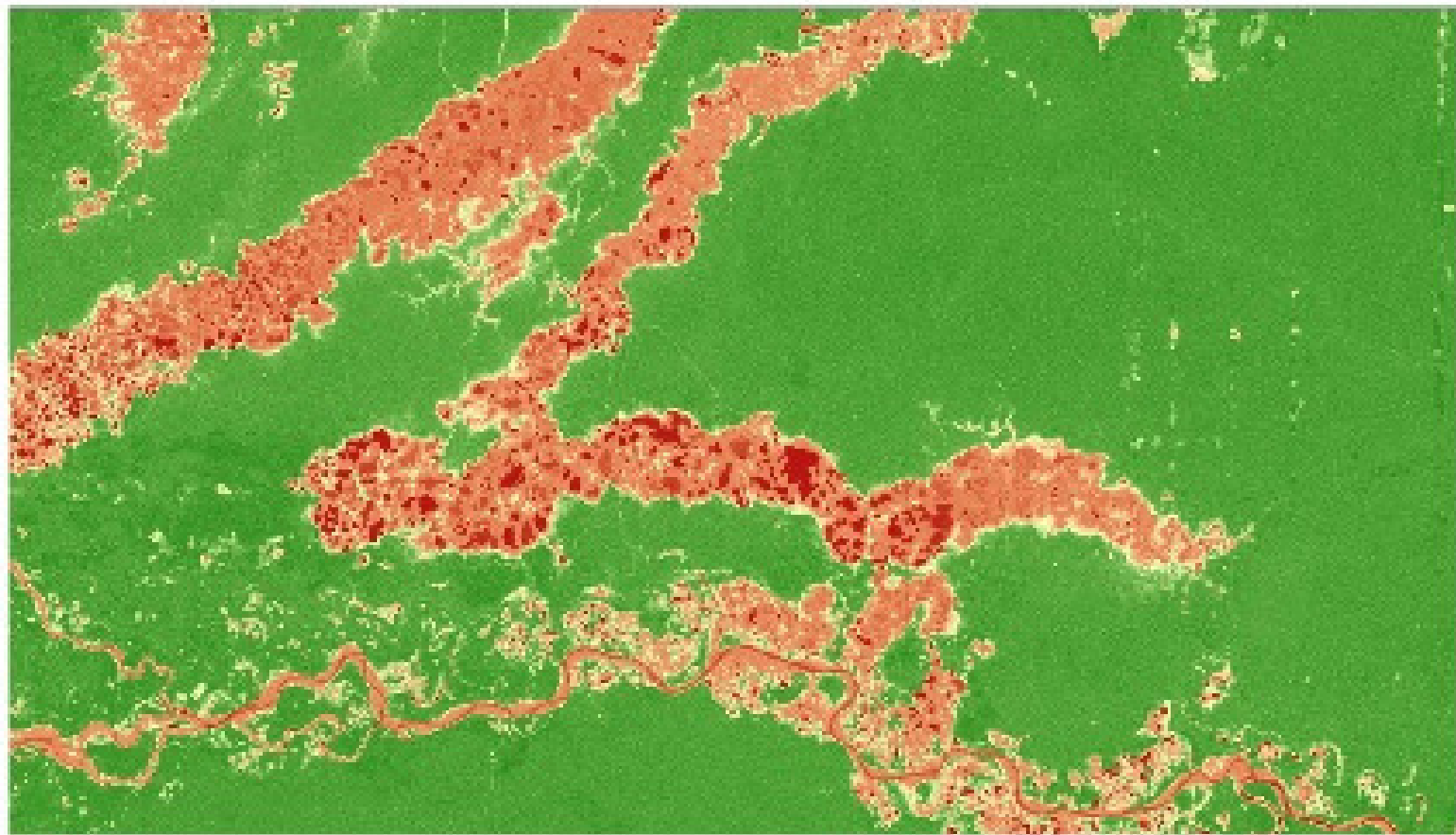
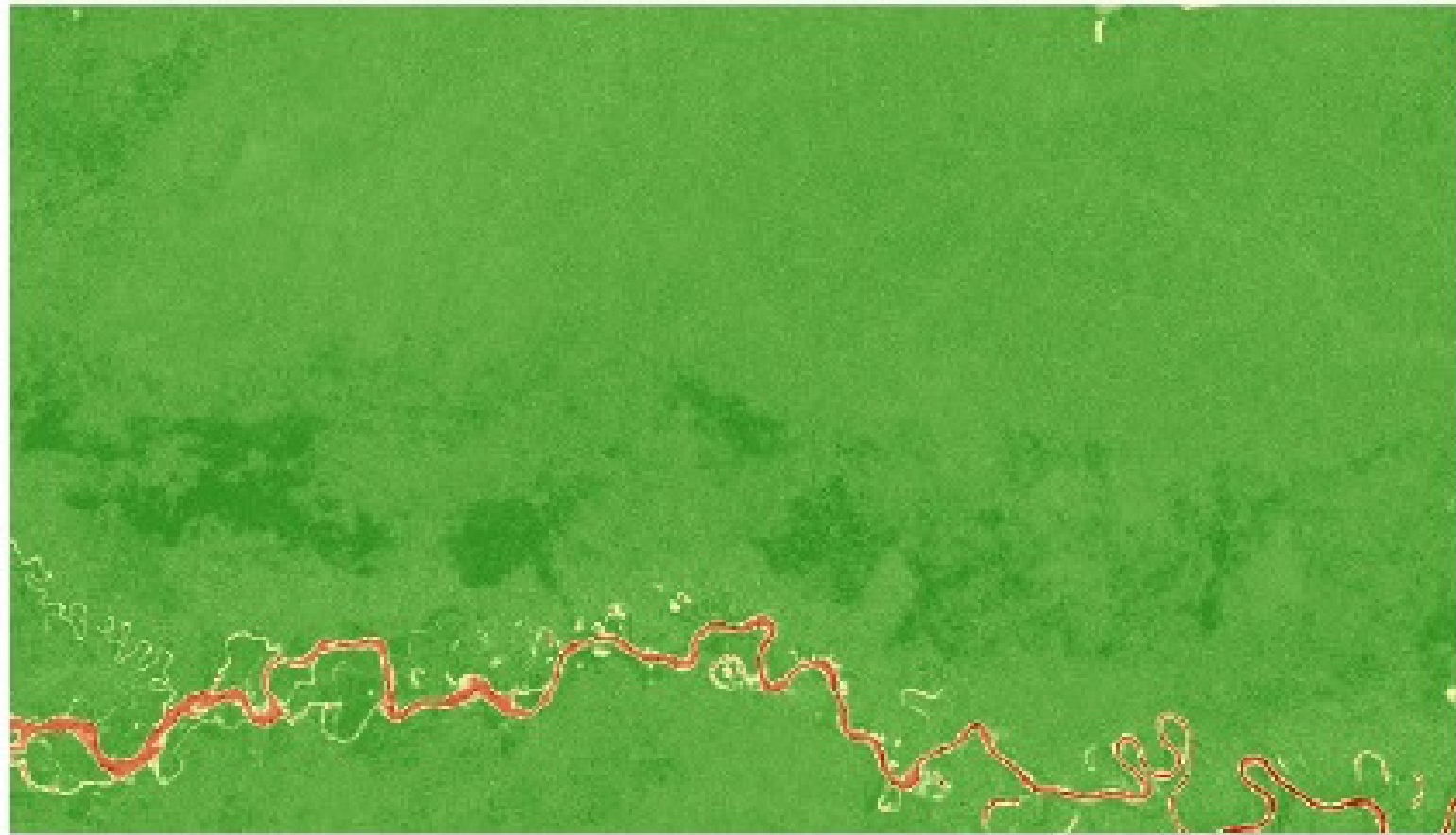


Lipiec 2017





**NDVI pozwala śledzić
wielkość deforestacji**

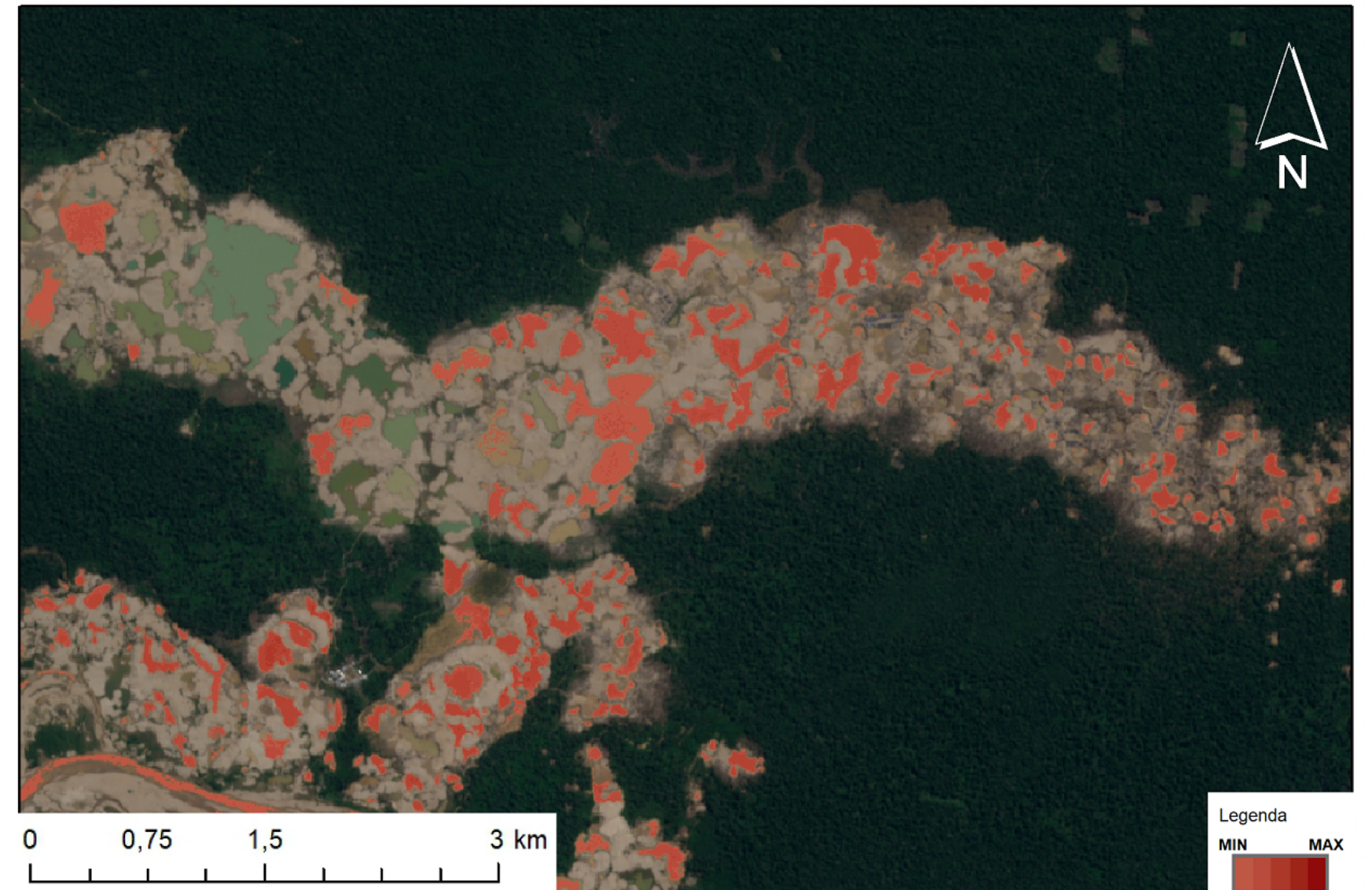
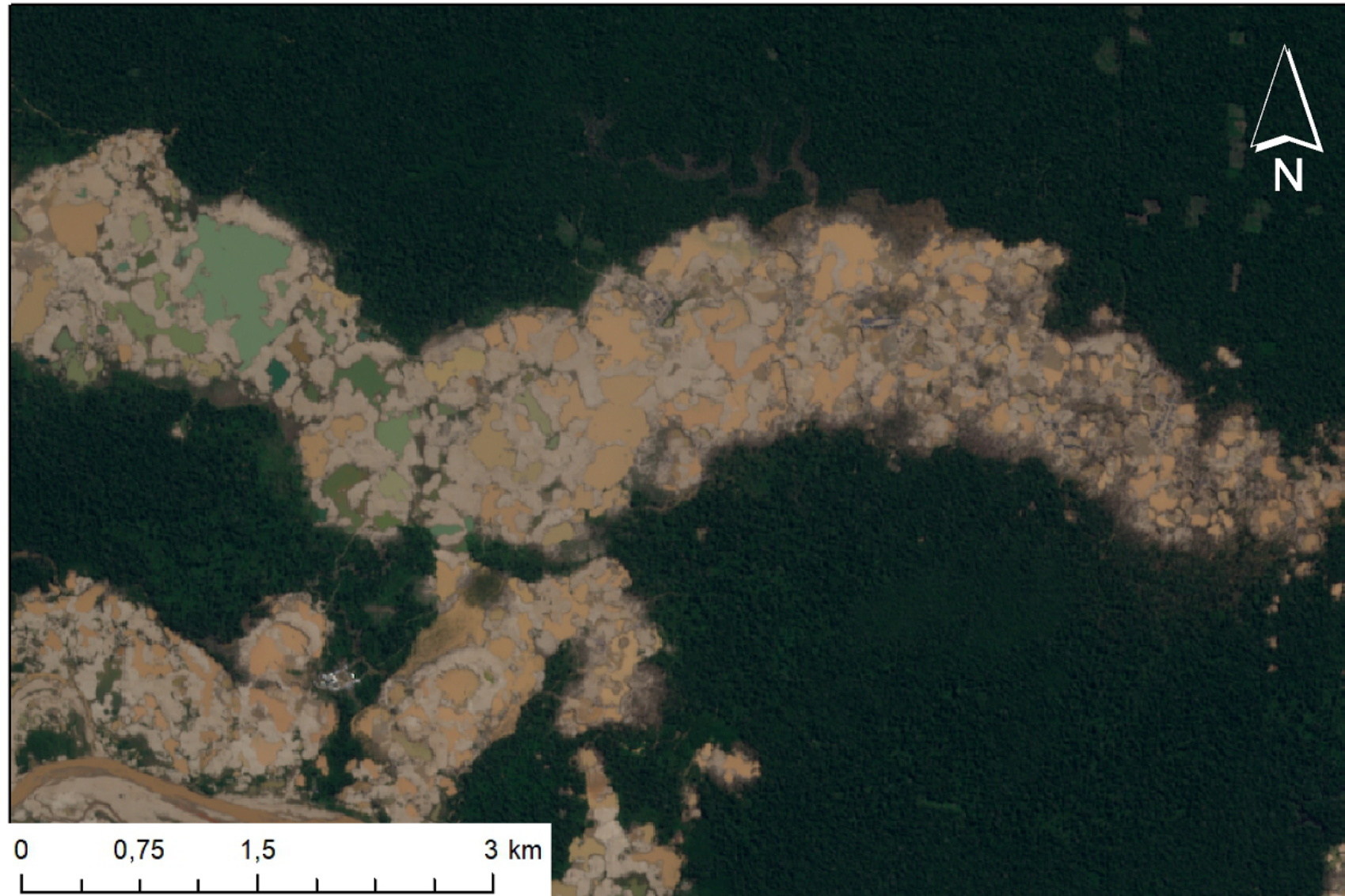


9 5 k m²

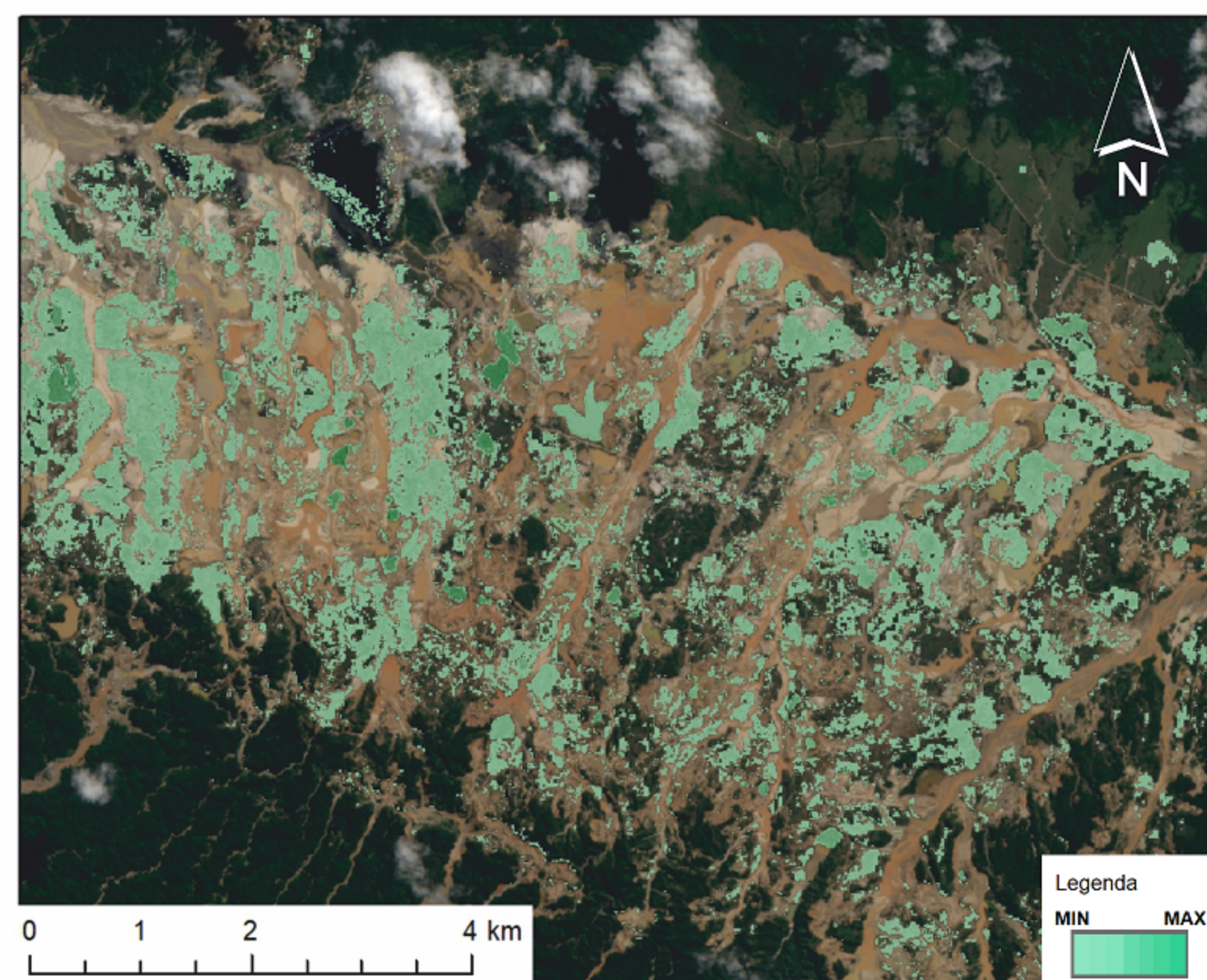
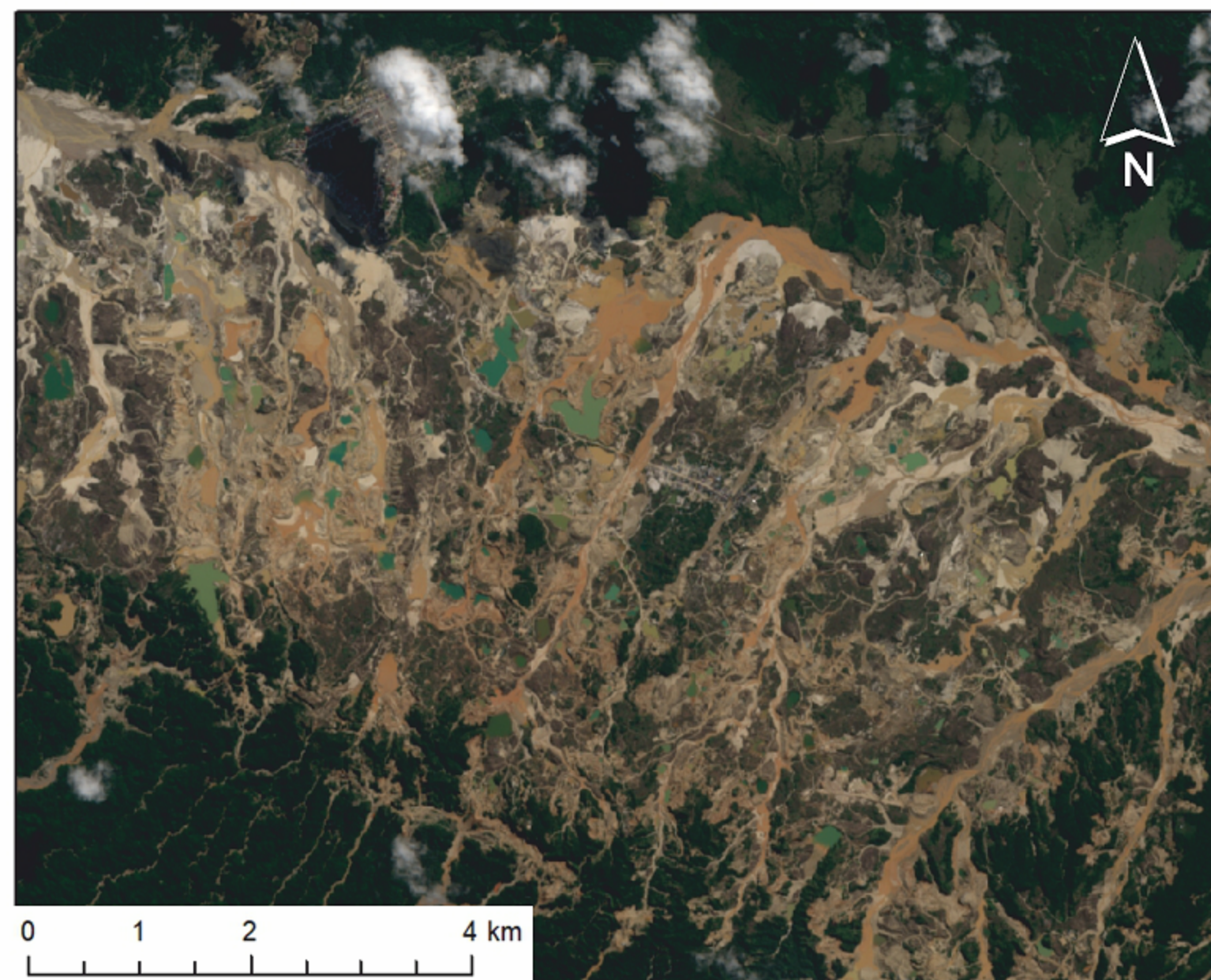
INDEKSY GEOLOGICZNE

- **Fe^{3+} (Ferric)**
- **Fe^{2+} (Ferrous)**
- **Minerały ilaste & siarczany**

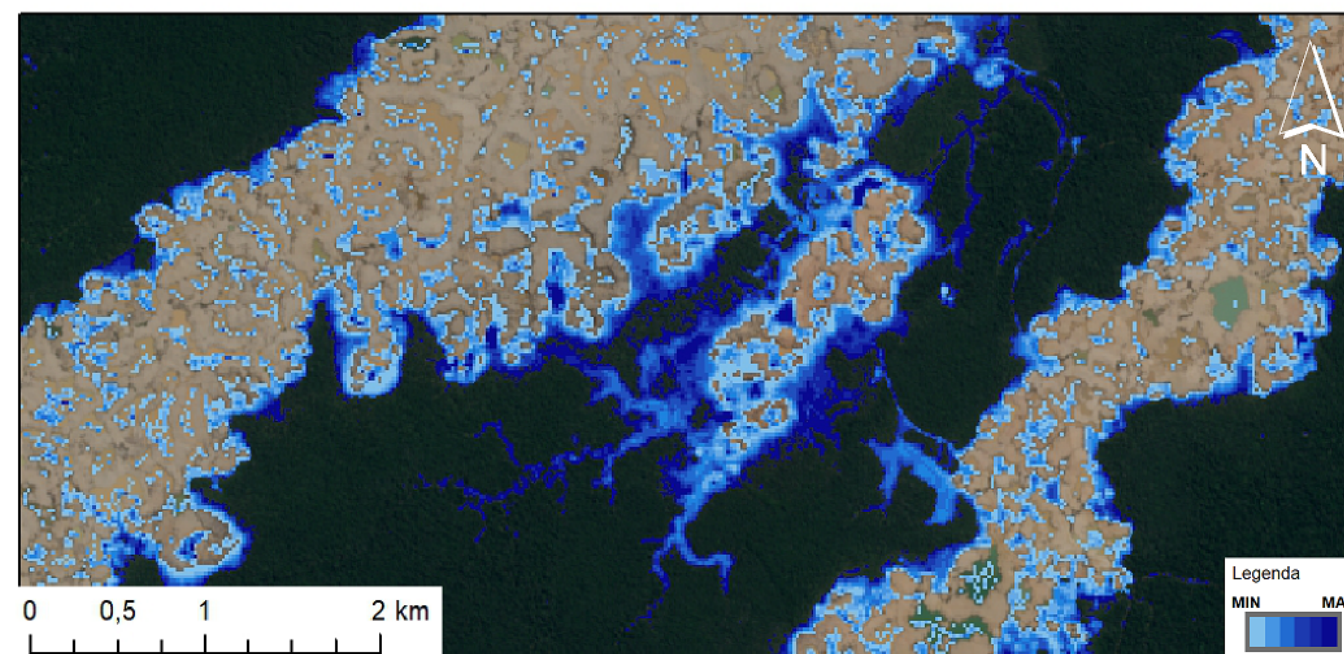
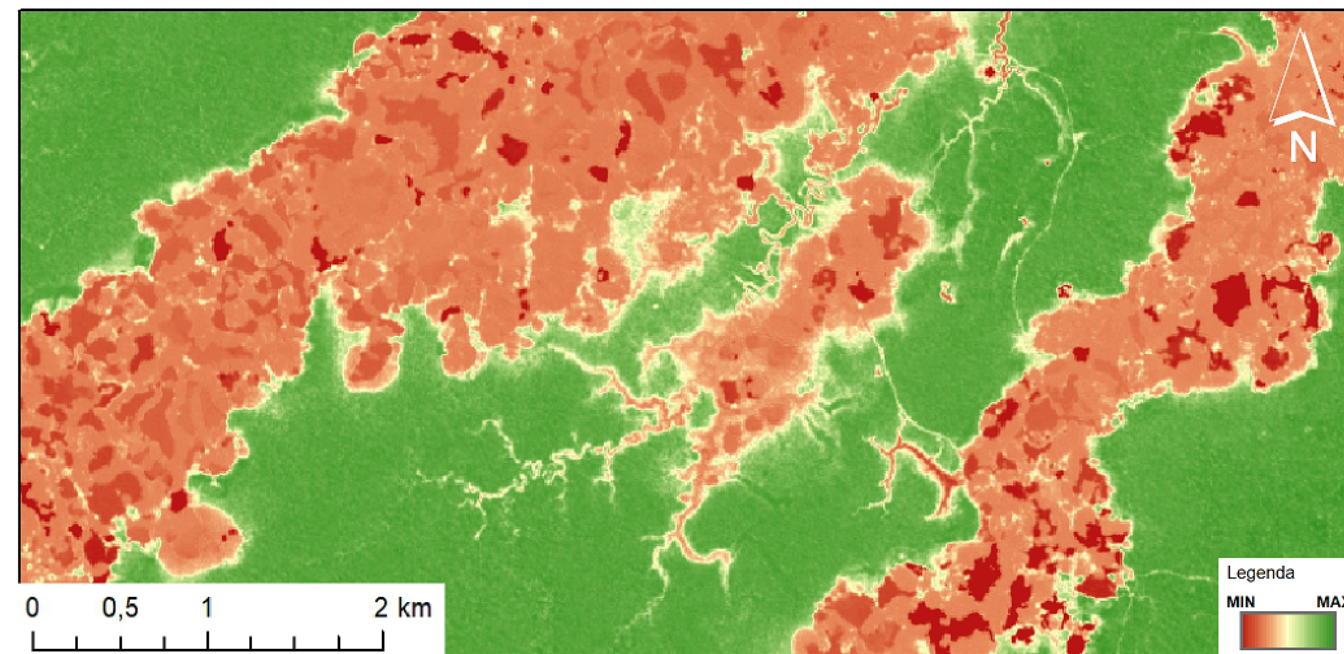
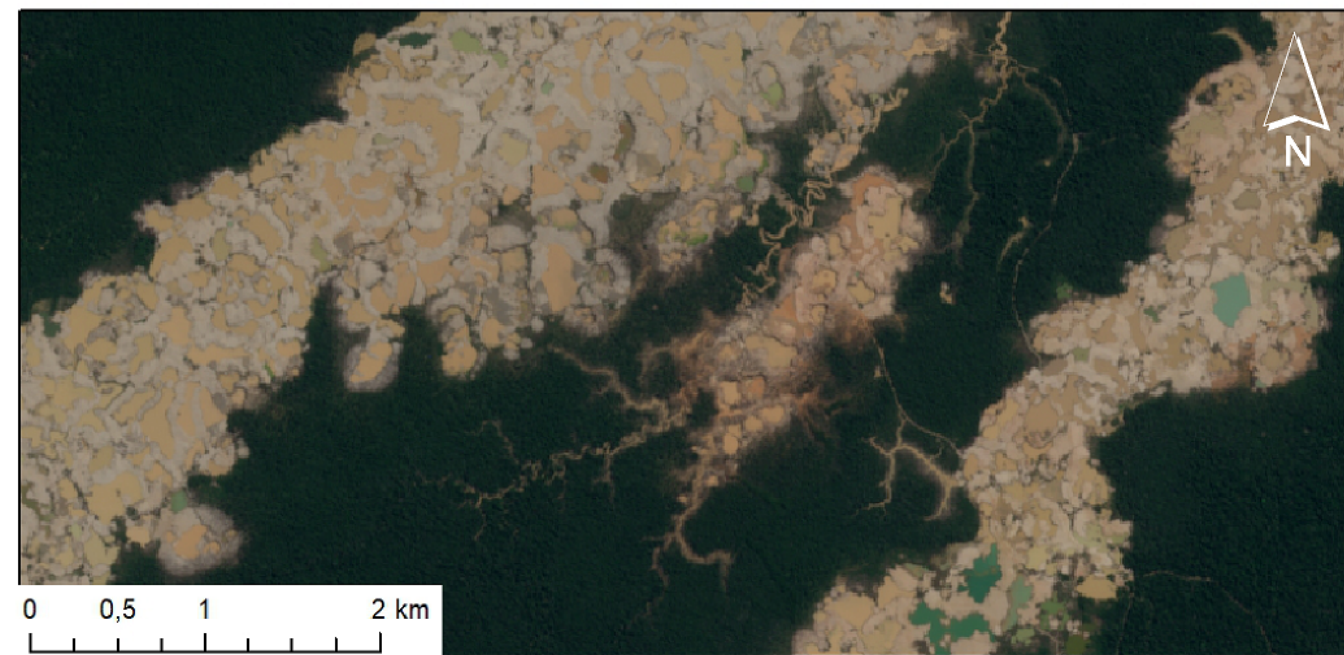
Fe^{3+} (Ferric)



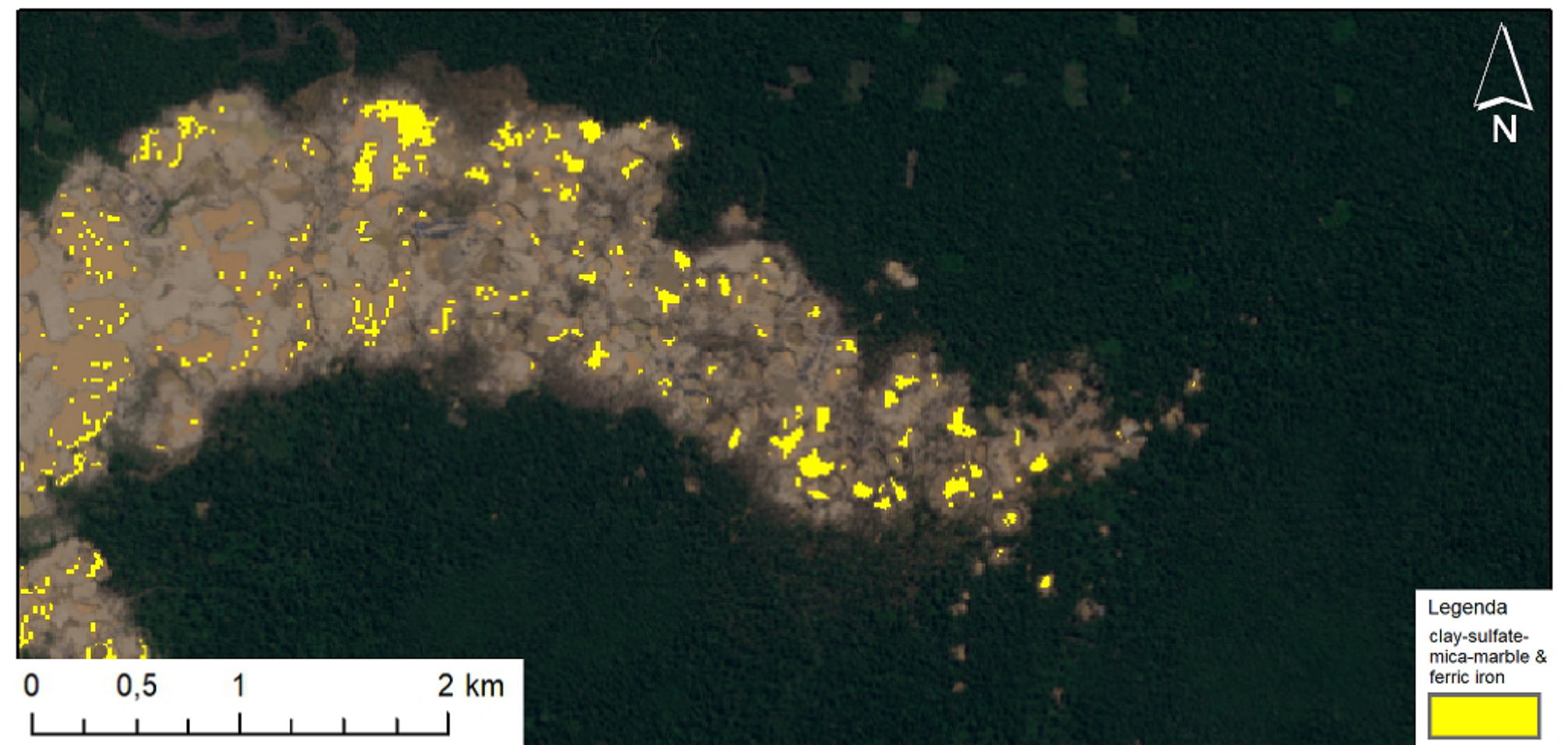
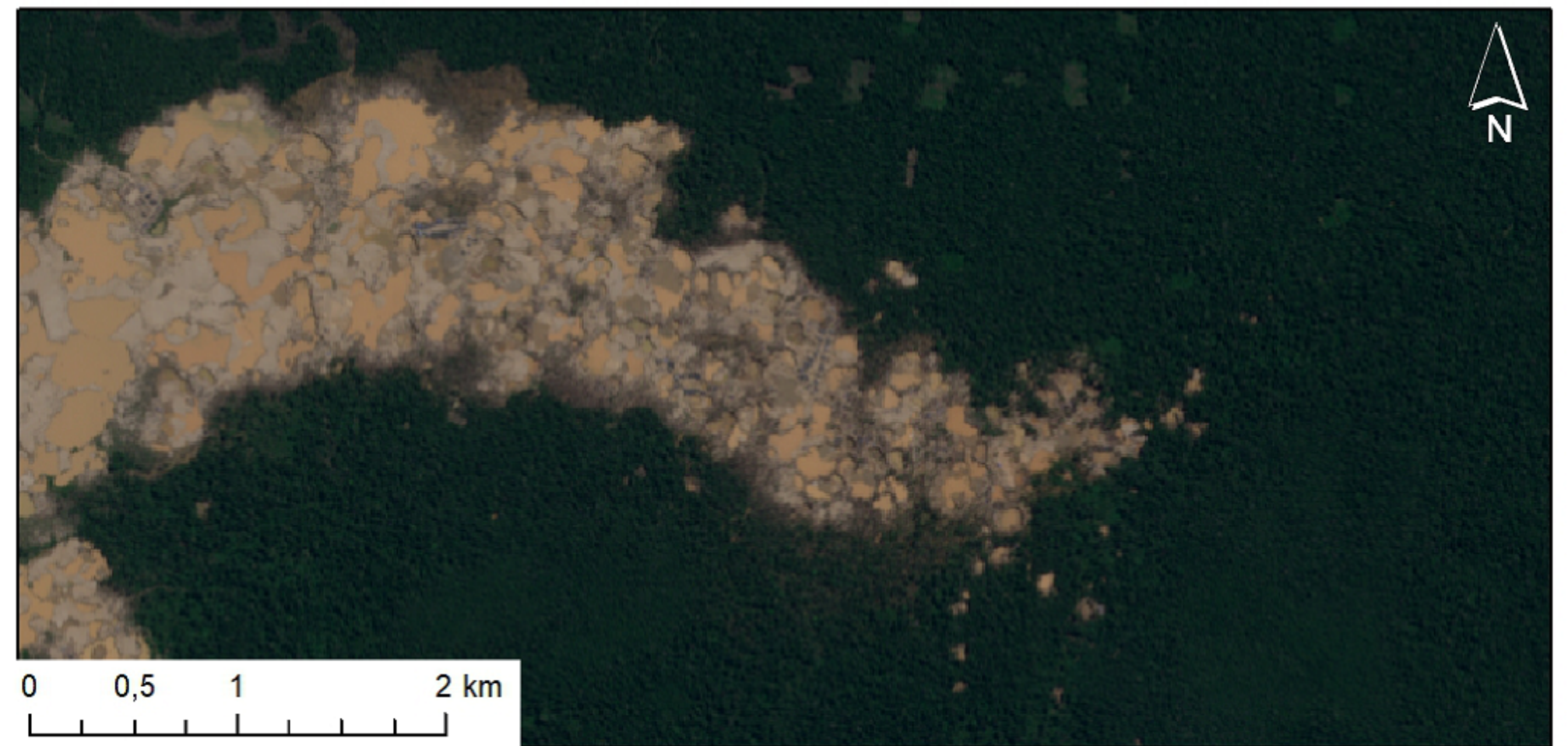
Fe^{2+} (*Ferrous*)



Minerały ilaste & siarczany



Wietrzenie pirytu

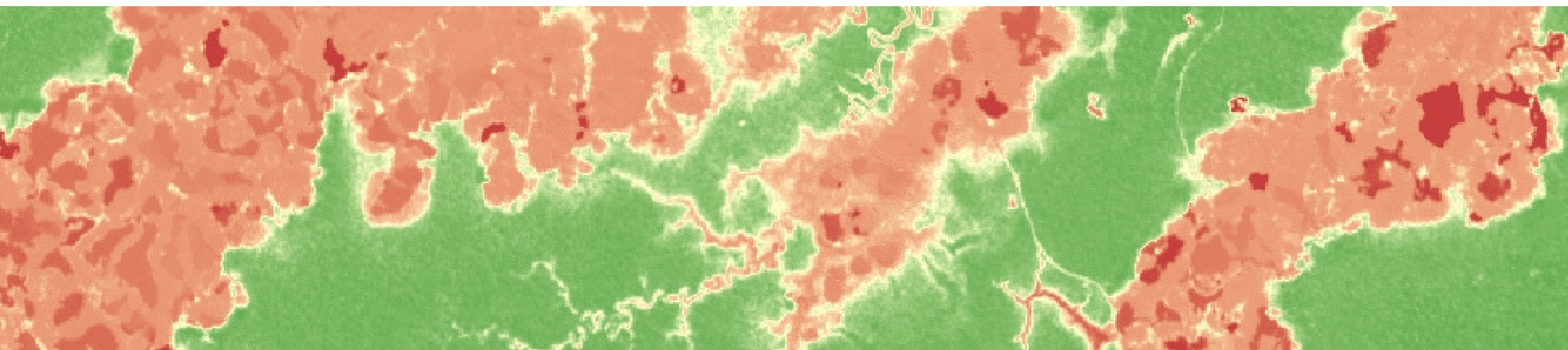


An aerial photograph of a forest landscape. The central part of the image is a large, irregularly shaped area of light green, possibly a meadow or a specific forest type. This central area is surrounded by darker green forest. The edges of the image are framed by a dark grey border. The word "WNIOSKI" is written in large, bold, green capital letters across the center of the light green area.

WNIOSKI

DZIĘKUJĘ ZA UWAGĘ

KATARZYNA ADAMEK



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