

MAAP #139: Using Satellites to Detect Illegal Logging in Peruvian Amazon



Image 1. Illegal logging camp. Data: Skysat, MAAP/ACCA.

Illegal logging, in addition to larger-scale deforestation, is a major problem impacting the Peruvian Amazon.

In 2019, a [Global Witness report](#), based on official information from the Peruvian government, estimated that at least 60% of the inspected timber over the past 10 years had an illegal origin. This problem not only directly affects the forest and its biodiversity, but also contributes to carbon loss (Qin et al, 2021) and forest degradation.

Illegal logging often involves the selective cutting of high-value trees in prohibited areas (whereas deforestation clears an entire area).

While numerous satellites can detect deforestation, only **specialized satellites** that are very high-resolution (less than one meter) can detect illegal logging.

In [this report](#), we present a new emblematic case of illegal logging in the southern Peruvian Amazon.

It is based on a **novel technique** of tasking and analyzing very high-resolution images (in this case, with the Skysat satellite fleet from Planet) for a specific target area. Thanks to this new technique, we can tackle the problem of illegal logging in real-time, previously one of the biggest obstacles (see "Conclusion" section below).

Emblematic case

We refer to this as an **emblematic case** given the strong indicators of illegality (see Legal Status section, below) combined with likely significant impacts on an area of Amazon primary forest important for both indigenous peoples and biodiversity.

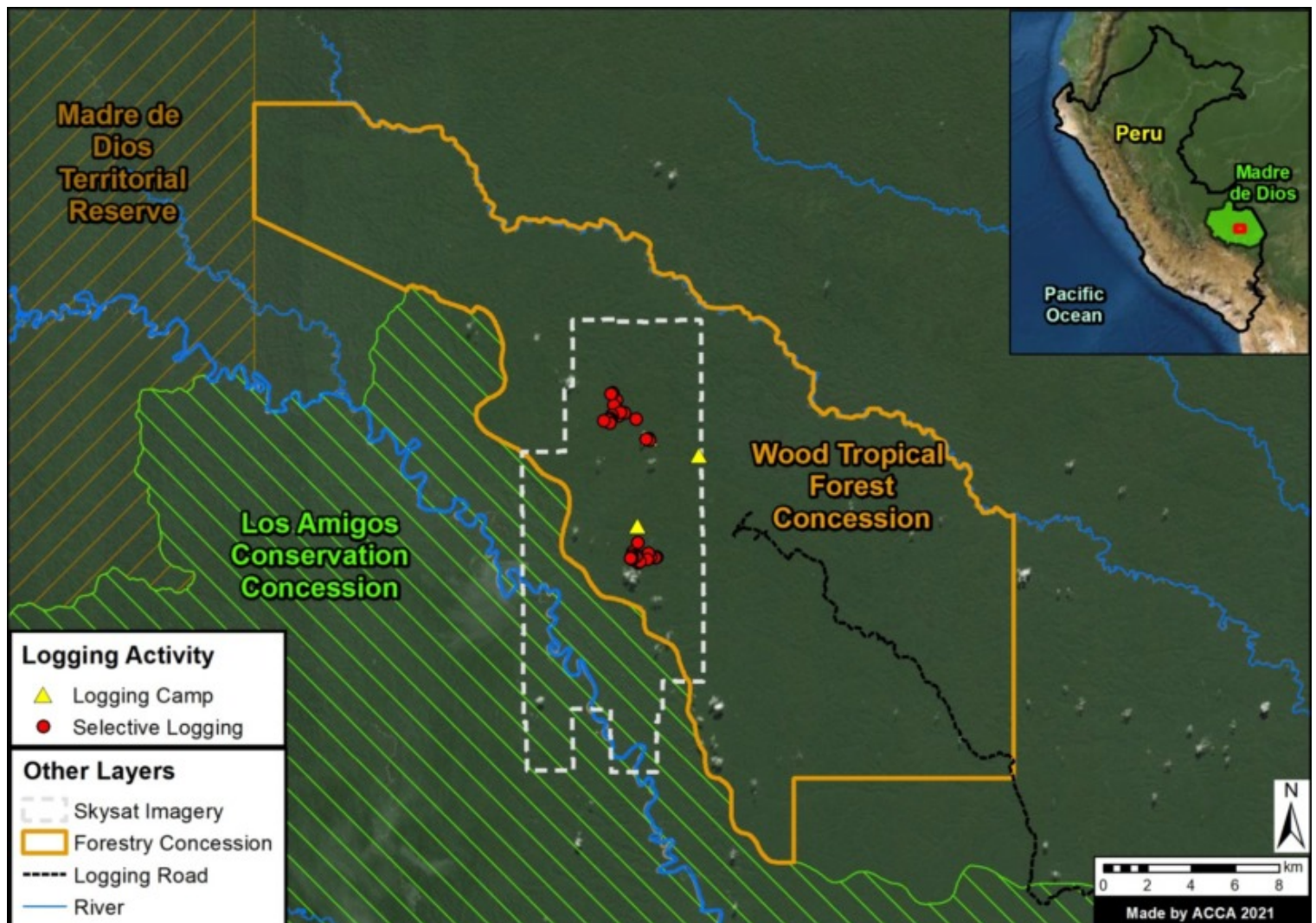
First, it is often difficult to confirm illegal logging given the frequent lack of updated technical and administrative information. This case study overcomes both obstacles.

Second, the illegal activity would not only be affecting a forestry concession (operated by the company Wood Tropical Forest), but also threatening important surrounding areas. Adjacent to the concession (to the west) is the Madre de Dios Territorial Reserve, a critical area that protects the territory of indigenous peoples in voluntary isolation. And to the south is the renowned Los Amigos Conservation Concession, a key area for the conservation of biodiversity.

Base Map

As part of our core work of continually monitoring the Los Amigos Conservation Concession, we acquired a series of very high-resolution images that also covered the surrounding Wood Tropical Forest forestry concession. These images, taken between February and April 2021, were obtained by the **Skysat** constellation (with a spatial resolution of 0.5 meters), operated by the satellite company Planet.

Our analysis revealed a serious situation of probable illegal logging: at least **3 active logging camps** and **37 recently cut trees** within the Wood Tropical Forest concession and close to both the neighboring Territorial Reserve and Conservation Concession (see **Base Map**).



Base Map. Data: MAAP/ACCA.

Very High-Resolution Skysat Images

The following images show some of the major findings made by our analysis of the Skysat data. **Images 1-2** show examples of the logging camps, and **Images 3-5** show examples of the likely selective illegal logging of high-value trees.



Image 2. Logging camp. Data: Skysat, MAAP/ACCA.



Image 3. Illegal logging. Data: Skysat, MAAP/ACCA.

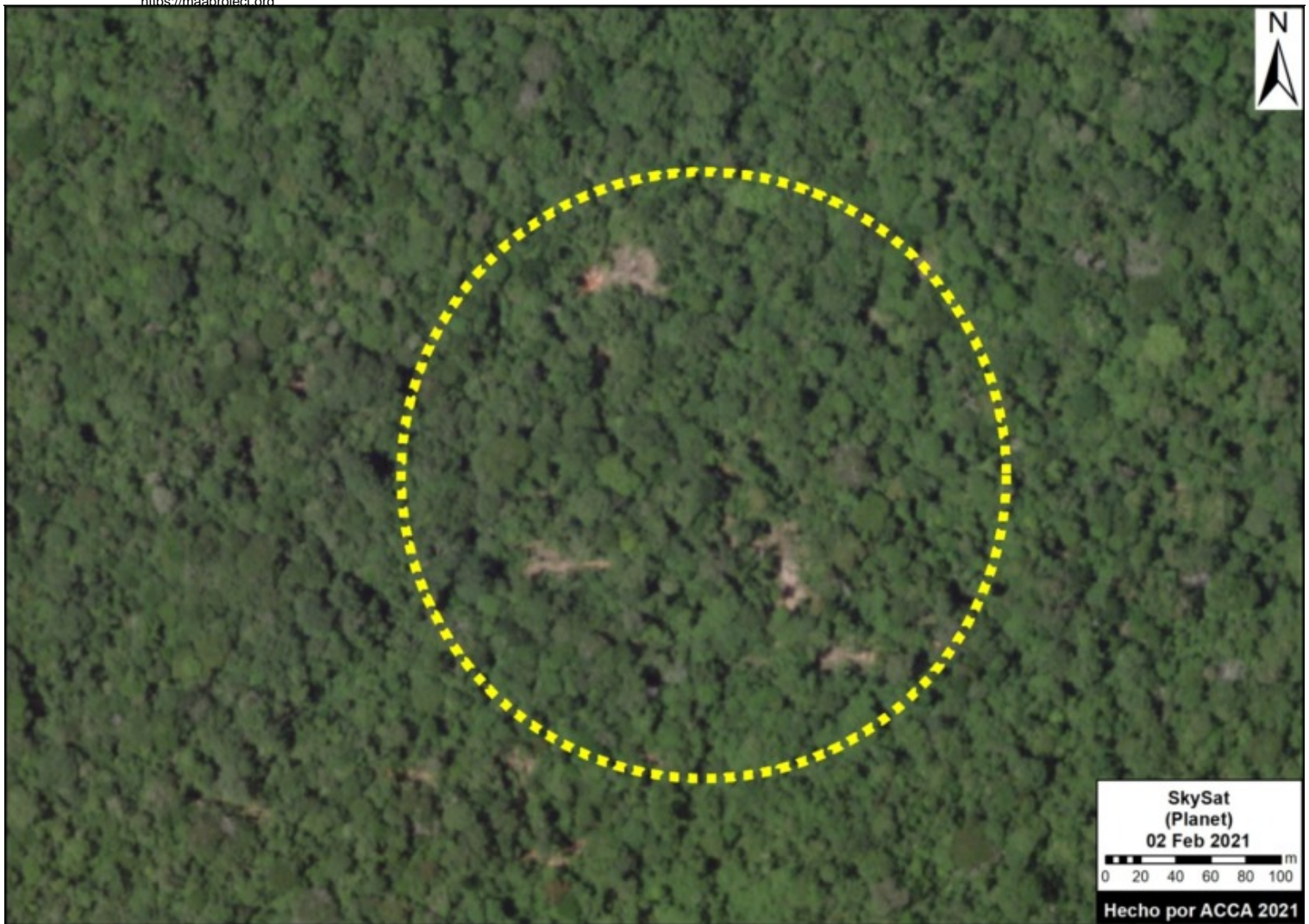


Image 4. Illegal logging. Data: Skysat, MAAP/ACCA.

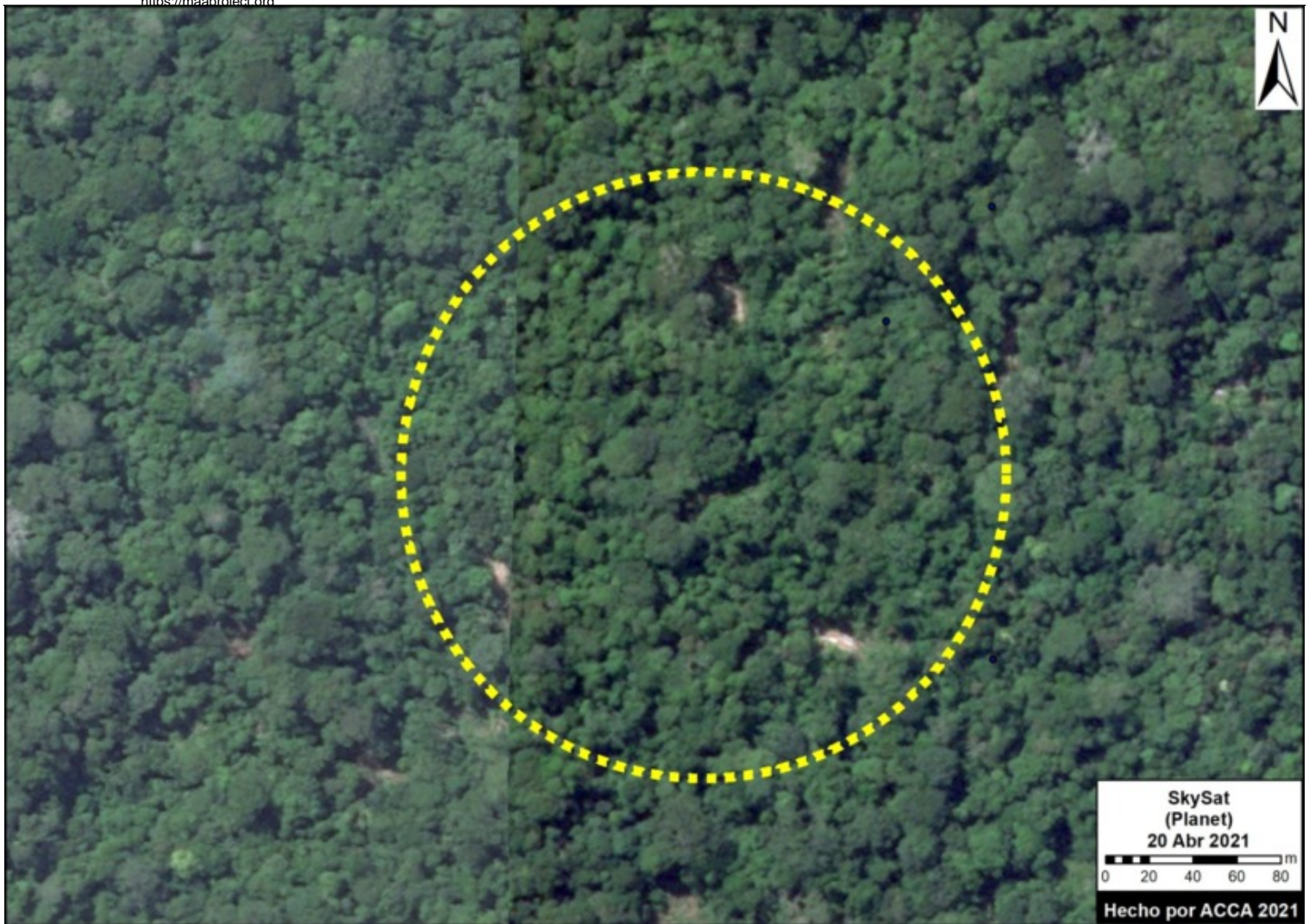


Image 5. Illegal logging. Data: Skysat, MAAP/ACCA.

Conclusion

This report presents a novel technique, based on the strategic capture of very high-resolution images (in this case, Skysat) and rapid analysis to detect selective illegal logging in real-time. Previously, one of the biggest obstacles to effectively addressing illegal logging was the inability of traditional monitoring methods to detect such small-scale, but widespread, illegal activity in the field. In this report, we demonstrate an important new capability of detecting illegal logging activity in vast and remote areas in unprecedented detail, down to the level of a logging camp or individual cut trees.

Legal Situation (in Spanish)

La concesión forestal con Contrato N.º 17-TAM/C-J-007-02 fue otorgada en el año 2002 a la Empresa Shihuahuaco Timber S.A.C. y cedió su posición contractual a la empresa Wood Tropical Forestal en el año 2010, quien es titular del contrato de concesión hasta la actualidad.

La presunción de ilegalidad de la tala selectiva, evidenciada por nuestras imágenes satelitales, se debe a que la concesión forestal no se encontraría realizando actividades de aprovechamiento forestal enmarcadas en planes de manejo aprobados por el Gobierno Regional de Madre de Dios.

En efecto, tras realizar la consulta al Gobierno Regional de Madre de Dios, en su calidad de Autoridad Regional Forestal y de Fauna Silvestre (ARFFS), se advierte que la concesión se encuentra vigente. No obstante, no ha presentado a la ARFFS planes operativos para el aprovechamiento forestal desde hace más de ocho años. Incluso, desde el 30 de enero de 2020,

cuenta con una resolución de la ARFFS que aprueba la suspensión del derecho de obligaciones contractuales (Resolución de Gerencia Regional N.º 065-2020-GOREMAD/GRFFS).

En ese sentido, y en tanto no se han presentado planes operativos en los últimos años, podemos inferir que en el área de la concesión forestal posiblemente no se estén realizando actividades lícitas de tala, por lo menos, desde hace ocho años.

Aunado a ello, en el Informe de Supervisión N.º 007-2019-OSINFOR/08.1.1, de acuerdo a una supervisión a la concesión para verificar obligaciones contractuales, el OSINFOR da cuenta de que la concesionaria presentó diversas denuncias entre los años 2016 al 2018 a la Fiscalía Especializada en Materia Ambiental (FEMA), al Organismo de Supervisión de los Recursos Forestales y de Fauna Silvestre (OSINFOR) y al Gobierno Regional de Madre de Dios, en las cuales advirtió la presencia de terceras personas al interior de la concesión que estarían realizando tala ilegal, deforestación, instalación de campamentos ilegales, entre otros.

Acknowledgments

We thank E. Ortiz (AAF), Z. Romero (ACCA), G. Palacios (ACA), and A. Felix, J. Carlos Guerra, K. Nielsen, O. Liao, and R. Suarez from USAID's PREVENT Project, and J. Jara for their helpful comments on this report.

This report was conducted with technical assistance from USAID, via the Prevent project. Prevent is an initiative that is working with the Government of Peru, civil society, and the private sector to prevent and combat environmental crimes in Loreto, Ucayali and Madre de Dios, in order to conserve the Peruvian Amazon.

This publication is made possible with the support of the American people through USAID. Its content is the sole responsibility of the authors and does not necessarily reflect the views of USAID or the US government.

This work was also supported by NORAD (Norwegian Agency for Development Cooperation), ICFC (International Conservation Fund of Canada), and EROL Foundation.

This MAAP report was made possible by the generous support of:



Citation

Finer M, Yupanqui O, Suarez D, Novoa S (2021) Using Satellites to Detect Illegal Logging in Peruvian Amazon. MAAP: 139.