Massive Logging of Primary Forests and Old-growth Forests in Romania, 2021-2024

Image: recent logging in Ceahlau Natura 2000 site

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Executive Summary

Romania still commands the largest area of primary and old-growth forests in the temperate climate zone of the EU. The PRIMOFARO study[1] (EuroNatur 2019) identified 525,000 ha of potential primary and old-growth forests through long-term visual analyses of satellite and aerial imagery, combined with on-the-ground validation. Yet only a small percentage of these forests are under strict protection, while Romania does allow logging in the majority of its old-growth forests.

Romania is obliged to conserve its primary and old-growth forests under the EU Biodiversity Strategy and EU legislation such as the Habitats and Birds Directive and the Nature Restoration Law. However, large-scale logging in potential and confirmed primary and old-growth forests including in Natura 2000 sites had already raised concerns in the past and led to an EU infringement procedure in 2020[2]. In response, Romania has brought its national legislation into line with EU legislation, but to all appearance this had no positive impact on the actual logging on the ground.

The purpose of this report is to provide hard evidence of the ongoing destruction and to quantify the timber extraction from potential primary and old-growth forests for the period 2021-2024, focusing only on logging with governmental permits (i.e. excluding illegal logging).

The following methods were used: (1.) Data on logging sites and volumes of timber harvested was retrieved from the Romanian government's official timber tracking website "SUMAL 2.0". (2.) This data was overlaid with a) all potential primary and old-growth forest areas identified by the PRIMOFARO study (2019) and b) Natura 2000 protected areas. (3.) All individual timber harvests within these two types of areas were summed up to total timber harvests. (4.) Logging hotspots were additionally visited on the ground, and 5 locations were documented on site to convey a more tangible impression of the logging practice.

The results for the three-year observation period 2021-2024 show:

(1.) Logging affected 138,000 ha of forest parcels overlapping primary and old growth forests identified by the PRIMOFARO inventory. More than half of these potential primary and old growth forests, about 71,000 ha, were located within Natura 2000 sites.

(2.) 4.7 million cubic metres of wood were removed from parcels overlapping PRIMOFARO potential primary and old-growth forests. Almost half of this total, 2.3 million cubic metres, was extracted from primary and old-growth forests within Natura 2000 sites. This gives the

[1] https://www.euronatur.org/fileadmin/docs/Urwald-Kampagne_Rumaenien/PRIMOFARO_24092019_layouted.pdf

[2] https://ec.europa.eu/commission/presscorner/detail/en/inf_20_202

impression that the Natura 2000 status has no protective effect compared to non-Natura 2000 forests.

(3.) Logging practices mostly involve large-scale “sanitary logging” and rapid “progressive logging”, often resulting in vast barren landscapes. Forest roads are cut into the terrain with heavy machinery, even on steep slopes, often causing severe erosion. This affects potential primary forests both outside and inside Natura 2000 areas.

(4.) While Romania has yet to map and report its remaining primary and old-growth forests under EU obligations, logging continues unabated, eliminating potential primary and old-growth forests before they can be mapped.

(5.) The distribution of logging sites covers the entire chain of the Romanian Carpathians, including remote areas that were previously inaccessible to loggers. There are logging hotspots in potential primary and old-growth forests in and around emblematic National and Natural Parks of Romania, such as Bucegi Natural Park, Ceahlau National Park, Calimani National Park, Vanatori Neamt Natural Park.

1. Introduction

Romania hosts the largest tracks of primary and old-growth forests in the temperate climate zone of the EU. This fact has been confirmed by several studies and some preliminary mapping has been done, but not always accepted by the National Authorities. According to the PRIMOFARO study[3] (EuroNatur 2019), Romania was still sheltering about 525,000 ha of potential primary and old growth forests. Other studies estimate around 700,000 ha of "high conservation value forests" (Munteanu, Sabatini et al, 2022).

Currently, only a small amount of Romania's primary and old-growth forests are under strict protection. Most of these are listed in the "National Catalog of Virgin and Quasi-virgin Forests" (73,000 ha) and others are strictly protected from logging in national parks (core zones), (strict) nature reserves or component parts of the UNESCO World Heritage Site.

As set out in the "EU Green Deal" and the „EU Biodiversity Strategy", 10% of the EU's terrestrial and marine territory shall be strictly protected. The Biodiversity Strategy also stipulates that all primary and old-growth forests (PF/OGF) in the EU are to be "identified, mapped and strictly protected" by 2030. Mapping should be finalised in 2025 (mid 2025: public forests, end 2025 private forests) and strict protection should be completed not later than 2029. While Romania has agreed to these strategies, mapping on the ground is slow and fast-paced commercial logging continues in these potential primary and old-growth forests.

Non-governmental organisations (Agent Green, EuroNatur, Greenpeace) complain that the applicable law (national regulations, EU law such as the Habitats and Birds Directives and the Strategic Environmental Assessment Directive) is often systematically not or badly enforced in the Romanian forestry sector. An EC infringement procedure against Romania, initiated in 2020, is still pending.

In this context, this report sets out to provide hard evidence of the ongoing nature of the destruction and to quantify the wood extraction from potential primary and old-growth forests for the period 2021-2024. The report focuses only on logging approved by the government, meaning that illegal logging, which takes place in addition, is not accounted for.

[3] https://www.euronatur.org/fileadmin/docs/Urwald-Kampagne_Rumaenien/PRIMOFARO_24092019_layouted.pdf

2. Methodology

The report features a twofold methodology: (A) a large-scale logging data analysis, providing waterproof figures of logging areas and volumes (chapter 2.1); (B) on-the-ground observations in 5 exemplary logging hotspots, verifying the data analysis and providing tangible impressions of the actual logging (chapter 2.2).

2.1 Methodology of the large-scale data analysis

For the large-scale logging data analysis, 3 data sources were combined:

1.) Data of precise logging sites and extracted wood volumes was retrieved from Romania's official wood tracking website SUMAL 2.0. The SUMAL 2.0 platform, also called "Inspectorul padurii" (Forest Inspector), is freely available online.[4] Using this data source implies that our study focuses on logging approved by the Romanian government and does not consider the huge additional amount of illegal logging.

2.) The best available map of potential primary and old-growth forests in Romania, i.e. the polygons updated in 2021 from the original PRIMOFARO study (EuroNatur 2019), provided under license by EuroNatur.[5]

3.) The official Natura 2000 electronic maps.[6]

The three data sets were overlaid, and a) logging permits, b) affected forest parcels, and c) extracted volumes were counted and summed up if they overlapped with PRIMOFARO areas, and with Natura 2000 areas, respectively.

The Environmental Investigation Agency (EIA) provided us with vital assistance when analysing and overlapping the freely available SUMAL 2.0 data, PRIMOFARO and Natura 2000 maps.

In SUMAL 2.0, we looked specifically at data concerning new logging permits (called APVs) and transport permits (called APs) but also at the Forest Management plans (FMPs) available, from where we extracted specific parcel information. A forest parcel (called ua) is the base unit in forestry management in Romania. It is sometimes split into smaller sub-parcels, that receive a separate letter (A-Z).

[4] https://inspectorulpadurii.ro/#/

[5] https://www.euronatur.org/fileadmin/docs/Urwald-Kampagne_Rumaenien/PRIMOFARO_24092019_layouted.pdf

[6] https://www.eea.europa.eu/en/datahub/datahubitem-view/6fc8ad2d-195d-40f4-bdec-576e7d1268e4

An APV (logging permit) was counted as a PRIMOFARO APV if either the corresponding forest parcel map for that APV overlapped at least 5% with a PRIMOFARO polygon OR the APV latitude/longitude lay within a PRIMOFARO polygon (for instances where the parcel shape may not have been available). An APV was counted as within Natura 2000 if the recorded latitude/longitude were within a Natura 2000 polygon.

The time range analysed for this report was August 1, 2021 to July 31, 2024, meaning we were able to look at 3 years of data.

The 2019 PRIMOFARO inventory found about 525,000 hectares of primary and old-growth forest in Romania. Counting any parcel with at least 5% overlap with PRIMOFARO for our analysis gave us a total of 658,000 hectares of forests in this category.

Limitations of the large-scale data analysis:

The PRIMOFARO study was conducted in polygons, upon visual assessment of satellite and aerial images, but without sufficient access to Forest Management Plans and forest parcel information. The Forest Management plans were largely not publicly available when the PRIMOFARO study was mainly conducted in 2018-2019. The Romanian Forest Management Plans, on the other hand side, are based on a "property logic" with maps with defined forest parcels. As no comprehensive data on these parcels was publicly available during the research phase for PRIMOFARO, they could not be considered in the mapping. The PRIMOFARO polygons are therefore based on visual features (canopy structure, tree species, tree density etc. or forest interior data from field inspections) and could not take into account the management and property boundaries. Therefore, in order not to miss any significant PRIMOFARO areas, we analysed for logging permits any forest parcel with at least 5% overlap with PRIMOFARO polygons. This significantly increased the areas being analysed, from about 525,000 hectares (in PRIMOFARO) to a total of 658,000 hectares of forest parcels that have a minimum of 5% overlap with PRIMOFARO.

Transport records are only available for 72 hours after they first appear on Inspectorul Padurii website. While we tried recording every transport, it is possible that some records are not read or retained properly, resulting in some data being lost.

Not all forest parcel boundaries are available in the SUMAL 2.0 website, this is especially the case where private owners have failed to submit an electronic map to the Romanian Ministry of Environment.

2.2 Methodology of the on-the-ground observations

For selecting the on-the-ground observation sites we started by looking PRIMOFARO areas that had large volumes of wood removed in the last 3 years. We then further narrowed down our search for good observation sites using the following criteria:

1. At least 60% of a forest parcel within a PRIMOFARO area.

2. At least one APV (logging permit) with authorised volume based on APV latitude/longitude.

3. Significant overlap with transported volumes for the three-year period from 01 Aug 2021 to 31 July 2024 (>2000 cubic metres total) based on latitude/longitude.

4. Some volumes extracted recently (>0 cubic metres in 2023 and 2024).

5. Old forest confirmed, either from official forest management plans (>140 years on average) or from previous site visits as part of the 2-year monitoring project of Natura 2000 sites conducted by EuroNatur in Romania, during 2022-2024.

Based on this narrowed list of potential observation sites, we looked at locations in five representative different geographic areas, namely Maramures mountains, Fagaras mountains, Ceahlau Mountains, Bucegi mountains, Vanatori-Neamt.

In each of these areas we then analysed satellite footage for significant visual disturbances and selected one location simultaneously fulfilling the five criteria above and matching our criteria for field visits in terms of accessibility and safety. This finally resulted in the selection of five specific field visit spots in five geographic areas.

We visited the five selected spots with forestry experts, conducting on-site observations and analyses, backed by GPS tools, cameras and drone flights for documentation.

3. Findings

3.1 Findings from the large-scale data analysis

	Romania total	**Within PRIMOFARO**	**Within Natura 2000**
Number of APVs (with Avize)[7]	455,000	13,000	6,000
Forest parcel area affected **[ha]**	658,000	138,000	71,000
Wood volume extracted **[m^3]**	50,595,000	4,731,000	2,331,000

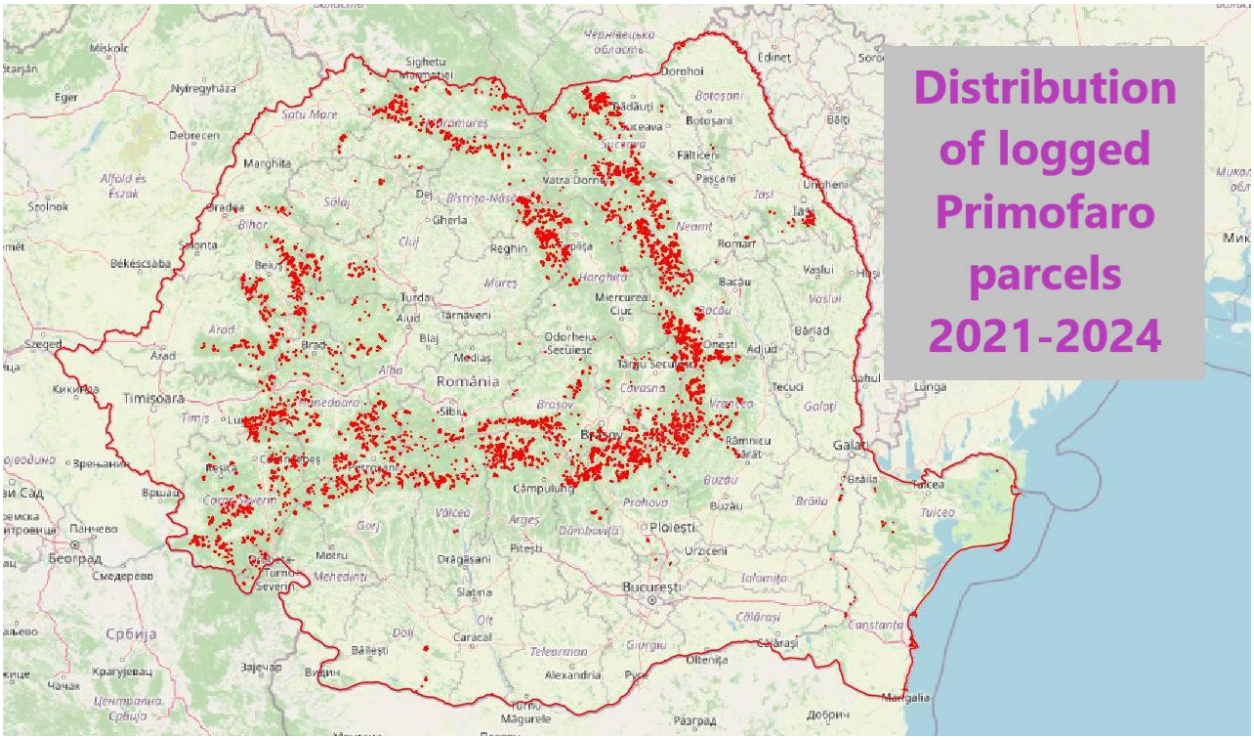
Table of key findings within the 3-year observation period of 2021-2024.

[7] APVs with Avize: Logging permits with corresponding transportation permits.

13,000 APVs (logging permits) were approved, and the corresponding wood extracted from areas overlapping potential primary and old-growth forests from the PRIMOFARO inventory. Of these, about 6000 logging permits were within Natura 2000 areas.

138,000 hectares of forest parcels containing at least 5% of PRIMOFARO overlap were affected by logging. More than half of these affected forest parcels, about 71,000 hectares lie inside Natura 2000 sites. Even if some of these parcels may presently have small interventions, once the extraction of wood has started, they cannot be considered as intact anymore and legally they can be fully exploited.

Looking at the map of logged parcels with PRIMOFARO overlap (below), the distribution of these logging permits in PRIMOFARO is extremely worrying because they affect the whole chain of the Romanian Carpathian Mountains, including remote areas that were inaccessible to loggers in the past.

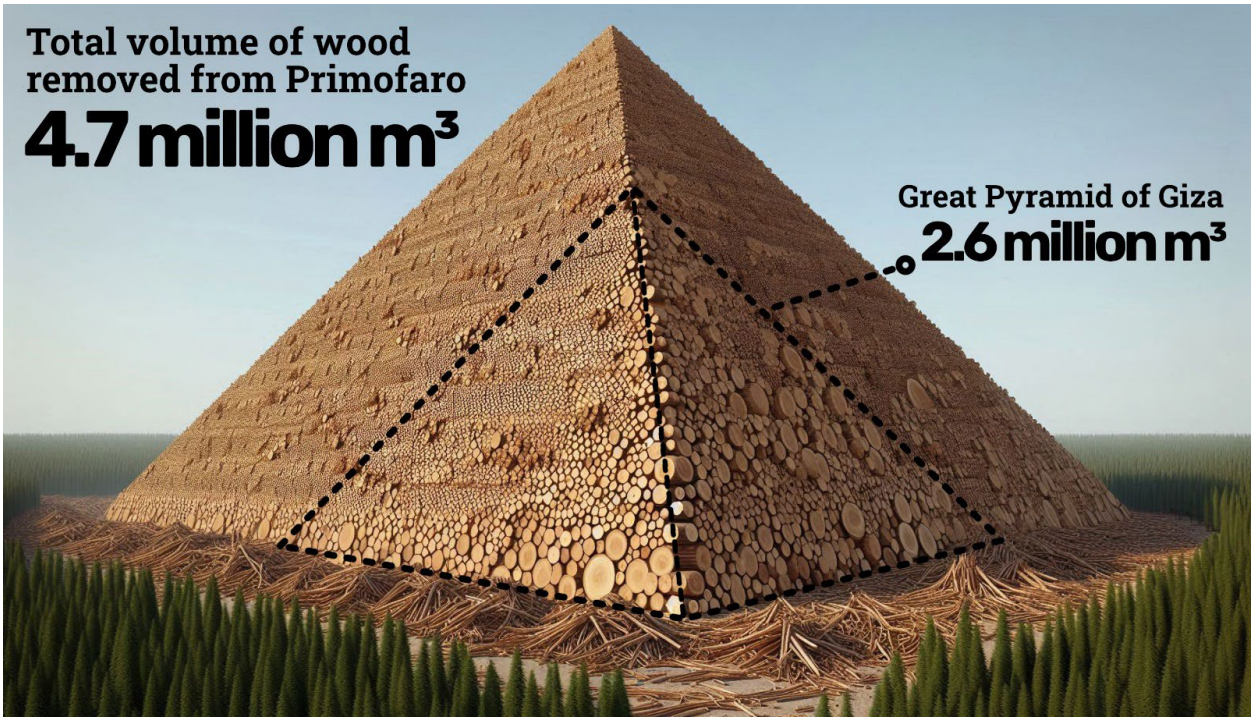


Map of logged forest parcels with a minimum 5% overlap with PRIMOFARO.

Our findings show that in just 3 years approximately 4.7 million cubic metres of wood were removed from forest parcels overlapping with PRIMOFARO primary and old-growth forests. This mountain of logs, extracted in a small amount of time, would suffice to rebuild the Great Pyramid of Giza two times in solid wood. It accounts for 9.21% of the total volume of wood extracted from Romania (51 million m^3), according to SUMAL 2.0.

Almost half of that volume logged in PRIMOFARO areas, i.e. 2.3 million cubic metres out of 4.7 million cubic metres, were extracted from primary and old-growth forests inside Natura 2000 sites.

The fact that similar volumes of wood are extracted from primary and old-growth forests both inside and outside Natura 2000 areas raises serious questions if the declared conservation status of these areas brings any real benefits to the valuable forests inside these areas.



The Great Pyramid of Giza has 2.6 million cubic metres. In contrast, the total volume of wood removed from PRIMOFARO (4.7 million cubic metres) will completely engulf the pyramid.

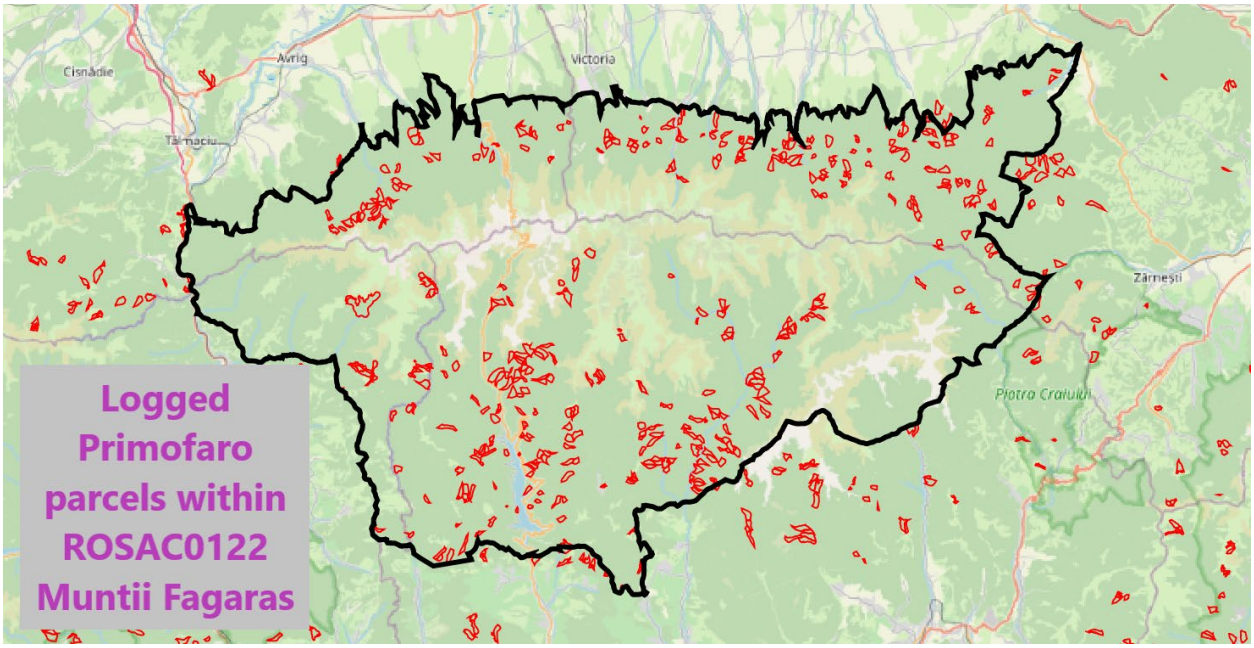
Hotspot analysis

We identified so-called hotspots of logging in PRIMOFARO polygons (large concentration of logging permits) in and around emblematic National and Natural Parks of Romania, such as Bucegi Natural Park, Ceahlau National Park, Calimani National Park, Vanatori Neamt Natural Park. These are some of the most valuable protected areas in Romania, where primary and old growth forests should be strictly protected and not logged.

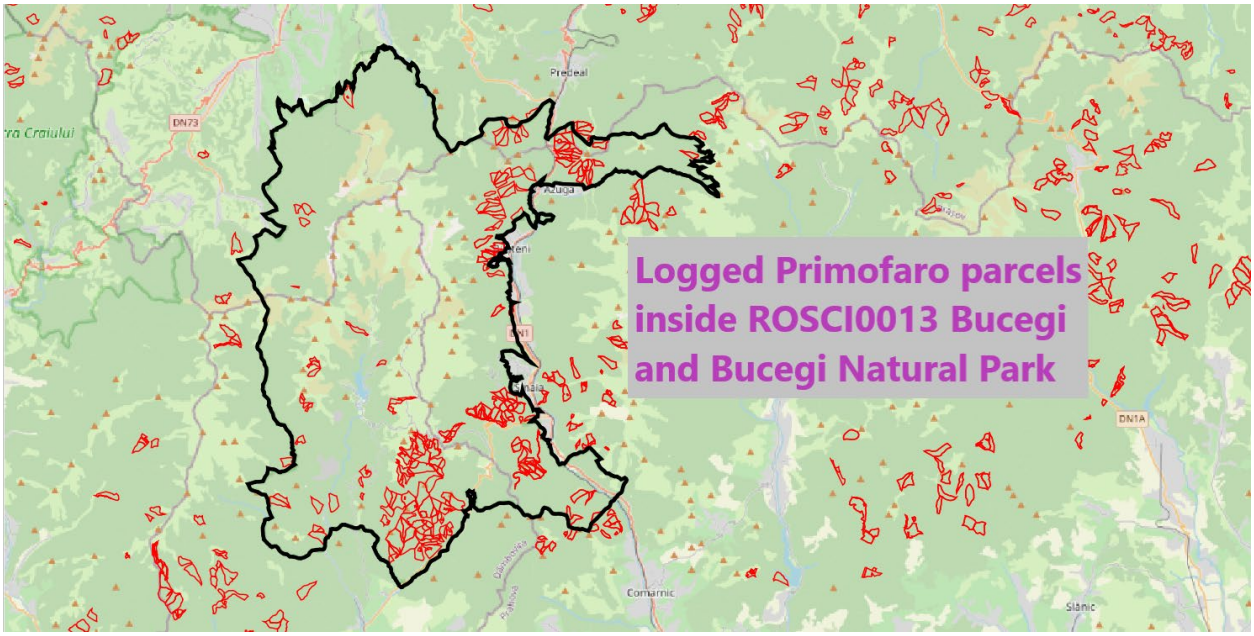
We also looked at Natura 2000 sites that were part of the EC Infringement against Romania: Fagaras Mountains, Maramures Mountains, and Frumoasa Natura 2000 sites.

Fagaras mountains was confirmed by our analysis as a hotspot for logging in PRIMOFARO with a large distribution of logging permits (APVs) throughout the Natura

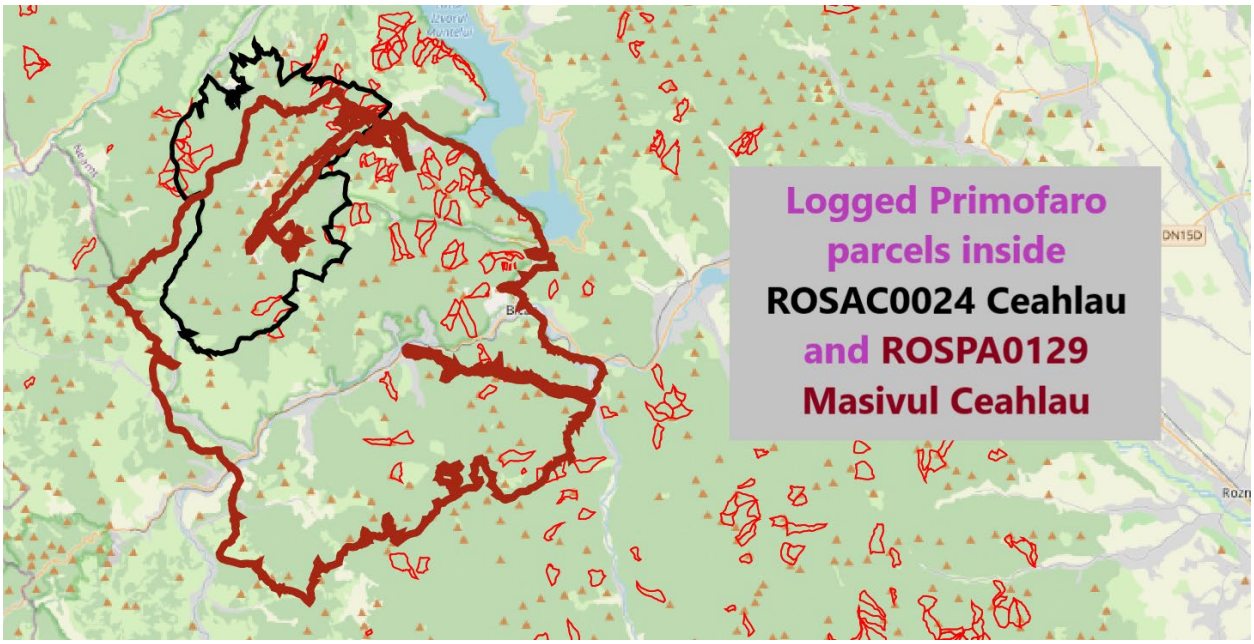
2000 site. It is heartbreaking for us that the largest hotspot of primary and old-growth forests in the temperate zone of Europe (outside Ukraine, Russia, Scandinavia) is also a hotspot for logging and continuous degradation of primary and old growth forests, despite the ongoing Infringement case by the EC.



Hotspot of logged parcels in Fagaras Mountains, ROSAG0122 Natura 2000 site.



Hotspot of logged parcels in ROSCI0013 Natura 2000 site, partially overlapping with Bucegi Natural Park.



Hotspot of logging permits in ROSAC0024 Natura 2000 site and ROSPA0129 Natura 2000 site, partially overlapping with Ceahlau National Park.

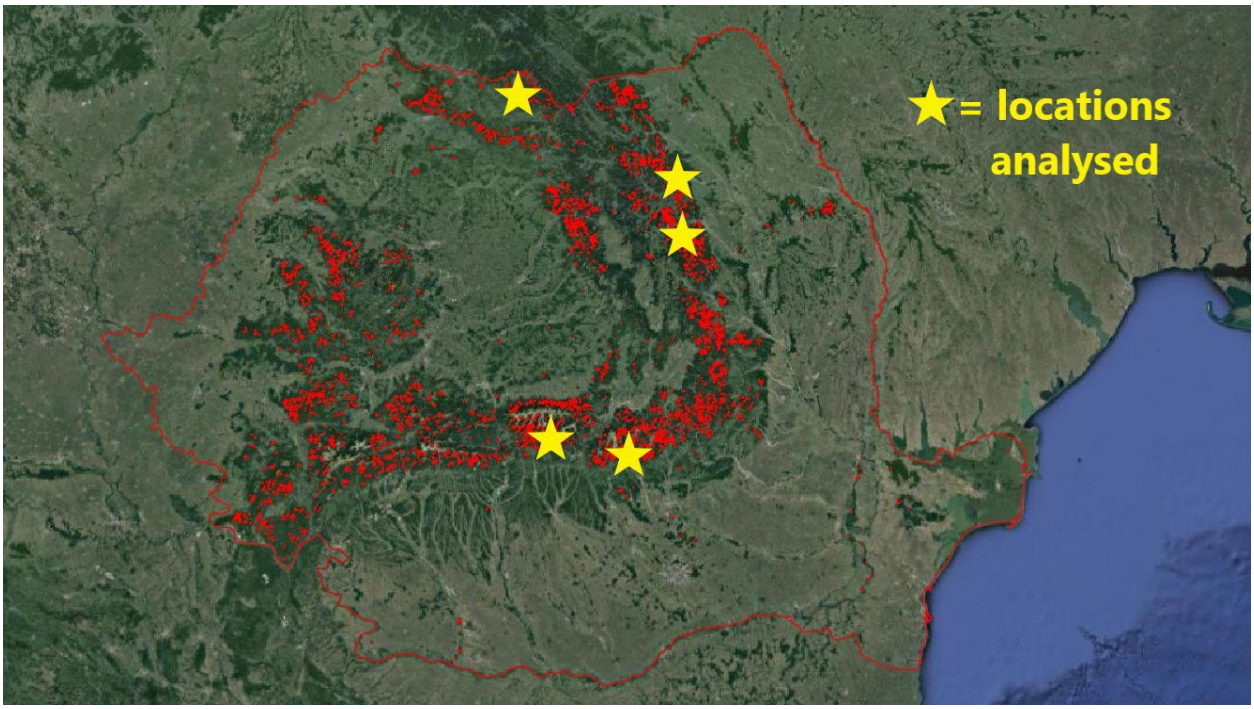
Maramures and Frumoasa Natura 2000 sites only registered a low amount of logging permits in PRIMOFARO, but this was to be expected because both sites are dominated by coniferous forests which have been intensively logged in the past and therefore only small areas of primary and old-growth forests remain in these two sites.

In Domogled National Park and its Natura 2000 sites, there was also a low amount of logging permits recorded, but this is mostly due to logging being suspended in Court following a Court Case by Agent Green that affected State Forests inside the Park.

3.2 Findings from on-the-ground observations

In the last 3 years we visited on the ground and monitored many of the logging sites included in this report. But we chose to present just 5 examples from 5 different areas, all being Natura 2000 sites, in Maramures, Ceahlau, Vanatori Neamt, Bucegi and Fagaras. Each of the 5 forests which we finally visited overlapped at least 80% with PRIMOFARO polygons.

Overall, just from these 5 locations, over 33,000 m^3 of wood have been removed from previously intact old-growth forests.



General map with 5 dots corresponding to exemplary locations visited on the ground.

Location 1: Maramures Mountains Natural Park and Natura 2000 site, Repedea

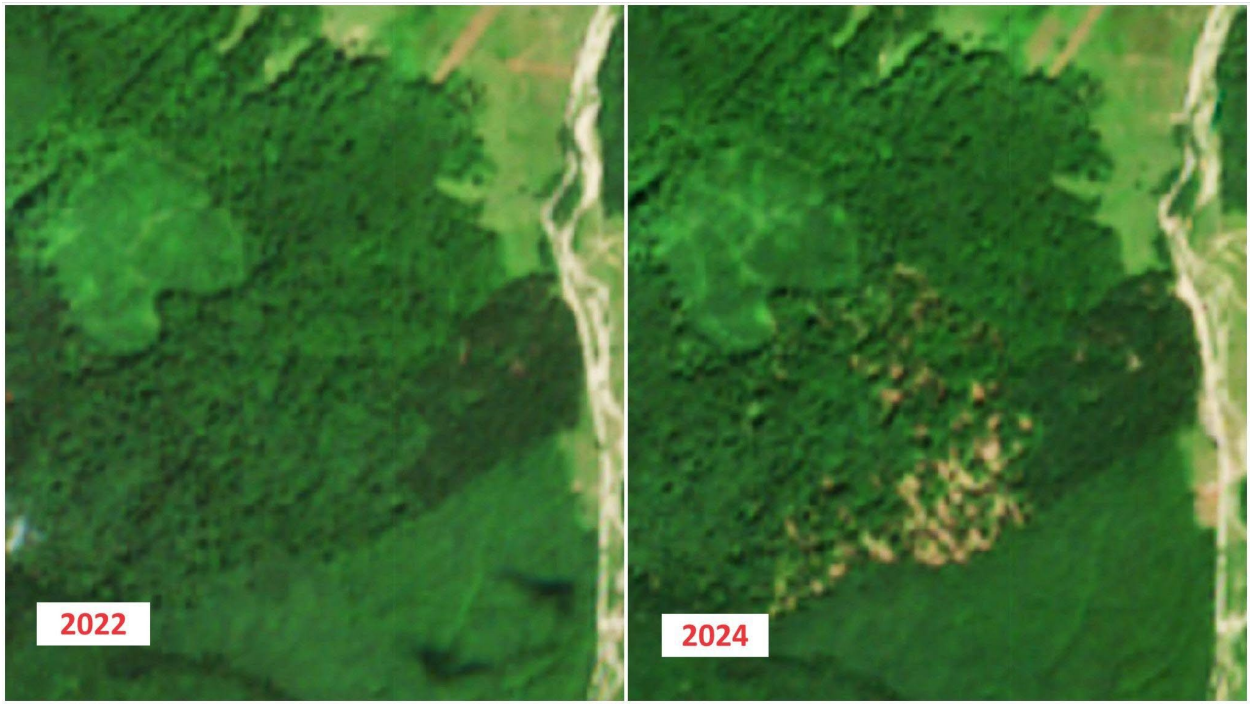
GPS	47°51'46.26"N 24°23'16.64"E
UP, Parcel no:	UP 1, 16
Total volume	**4,000 m^3**
Age	Age data is unavailable as these are private forests
Forest consistency before logging	Unavailable
Type of logging	Conservation, accidental
APV no:	2300144003520, 2300144001530, 2100144001140, 2200144002450
Active logging	Yes
Protected area	Yes, Maramures Natural Park, Natura 2000 site ROSAC0124
Property type	Private Property, OS Poieni
Observations	More than 4000 m^3 have been removed from these parcels in the last few years. We visited this location in 2022 and 2023. On the ground it looks like a clearcut where the entire forest ecosystem has been compromised and replaced by grassland, but this massive logging was declared as conservation logging. Potential illegalities include: More wood harvested than declared in writing and non-compliant photos that do not capture the entire load and registration number. ex: AP21015293001506183211221347 AP21015293001206183211191118 AP24001440001900620605091357 Unjustifiably prolonged cuts for APV 2200144002450 which had to be completed according to SUMAL 2.0 on 04/06/2023. Very limited public information about the forest management plan.

Satellite images between 2020-2024 from Repedea, inside Maramures Natural Park and ROSAC0124 showing intact forest cover in 2020 and almost complete removal of forest cover from logging works by 2024. The light green in 2022 and 2024 are mostly grassland replacing a forest ecosystem.

Top photo: ground visit of the logging site in March 2023. Bottom photo: general aerial shot of the logged area from March 2023.

Location 2: Vanatori Neamt Natural Park and Natura 2000 site, Bouletul

GPS	47° 5'22.31"N 26° 8'34.06"E
UP, Parcel no:	UP 2, 56A
Total volume	**6,700 m^3**
Age	179
Forest consistency before logging	170-**0.7**-2
Type of logging	Progressive
APV no:	2100022500680
Active logging	No
Protected area	Yes, Natural Park, Natura 2000 sites ROSAC0270 and ROSPA0107
Property type	State Property, OS Varatec, NT
Observations	Large volumes have been removed here. This was an outstanding old-growth forest of 179 years with consistent forest cover (0.7), which should have benefited from the double protection of a Natural Park and a Natural 2000 site. Instead, it is being rapidly degraded with progressive logging. Inside this forest we found sporadic multi-century beech trees (>250 years) that were extracted with priority. The exploitation rules and the requirements of the FSC® standard were not respected (soil erosion, impaired regeneration). Specific biodiversity conservation measures by protecting outstanding elements were not respected. Recent cutting marks (August 2024) although the work was officially completed on 31.12.2023. Examples of suspected, under-estimated wood transports: AP230009160021044305042412 09 AP230009160017044328042412 06 AP230009160002003197060118 10



Satellite images from 2022 and 2024 in Vanatori Neamt Natural Park and Natura 2000 sites ROSAC0270 and ROSPA0107, showing intact forest cover in 2020 and highly fragmented forests from logging works by 2024.

Top photo: ground visit of the logging site in August 2024. Some of the tree stumps in this site measured over 2.3 m in diameter. Bottom photo: general aerial shot of logged area from August 2024.

Location 3: Ceahlau mountains Natura 2000 site, Izvorul Muntelui

GPS	46°56'58.71"N 25°59'38.50"E
UP, Parcel no:	UP 10, 50A
Total volume	**10,200 m^3**
Age	160
Forest consistency before logging	150-**0.6**-2
Type of logging	Progressive, accidental
APV no:	2300020004450, 2100020003400, 2100020003500, 2100020005540, 2300020000790, 2300020005960.
Active logging	No
Protected area	Yes, Natura 2000 site ROSPA0129
Property type	State Property, OS Bicaz, NT
Observations	Very large volumes have been removed here, of over 10,000m^3 from a forest aged 150 years old, on average, with only minor interventions in the past and a consistency of 0.6. On the ground we found several breaches of forestry technical norms, Natura 2000 standards, exploitation rules and the requirements of the FSC® standard with extremely serious consequences in the future. Deep, eroded logging roads were present everywhere in this forest parcels, sometimes as deep as 3-4 m, putting the small village of Izvorul Muntelui at risk of mud flooding. The village is located at the base of the forest slope. Multiple unprotected wet areas were found inside the parcel, where trees should not have been logged, according to FSC and Natura 2000 standards.

Satellite images from 2022 and 2024 in Ceahlau Natura 2000 site ROSPA0129.

Top photo: ground visit of the logging site in August 2024. Bottom photo: general aerial shot of logged area from August 2024 showing a vast network of logging roads.

Location 4: Fagaras Mountains Natura 2000 site, Grosu bridge

GPS	45°24'15.22"N 24°48'59.19"E
UP, Parcel no:	UP 4, 189 B, 190 C
Total volume	**4,200 m^3**
Age	190
Forest consistency before logging	180-0.7-3
Type of logging	Progressive, accidental
APV no:	2100177703480., 2100177700210
Active logging	No
Protected area	Yes, Natura 2000 site ROSAC0122, and in the vicinity of the National Catalog of Virgin and Quasi-Virgin Forests of Romania
Property type	State Property, OS Domnesti
Observations	Around 5000 m^3 have been removed from these parcels in the last few years from these old growth forests that are now 180 - 190 years old, on average. Deep logging roads are present throughout the area, with signs of heavy erosion. Logging was done on steep slopes of (over 30%) that are prone to erosion. Suspicion of illegal transports, undervaluing the quantities of wood transported, examples: AP230017770021071687020110 34 AP230017770013071687020112 49 AP230017770007071687031614 26

Satellite images from 2020 to 2024 in Fagaras Natura 2000 site ROSAC0122, showing intact forest cover in 2020 and highly fragmented forests from multiple logging works by 2024.

Top photo: ground visit of the logging site in April 2023, showing a large volume of wood being abandoned inside the forest. Bottom photo: deep logging roads are sometimes 4-6 m deep causing future erosion, April 2024.

Location 5: Bucegi Natural Park and Natura 2000 site, Valea Cerbului

GPS	45°26'15.3"N 25°31'20.2"E
UP, Parcel no:	UP I, parcels 222, 224, 228A, 229A, 229B, 229C, 230A,
Total volume	**8,500 m^3**
Age	Between 120-170 year old
Forest consistency before logging	Unknown, private owner
Type of logging	Transformation towards selective forestry
APV no:	2200009100520, 2100009100090, 2200009100510, 2100009100060, 2100009101210
Active logging	No
Protected area	Yes, Natural Park, Natura 2000 site ROSCI0013, potentially Natural Reservation, and in the vicinity of the National Catalog of Virgin and Quasi-Virgin Forests of Romania
Property type	Private Property but State administered by OS Azuga
Observations	Over 8500 m^3 have been removed from these parcels in the last few years from forests that have previously been protected as a Natural Reservation (Abruptul Prahovean Bucegi). However, while the limits reported to the EC[8] indicate this area is still inside the Natural Reservation, the Park Administration has removed over 2000 ha from the Reservation, allowing for logging in these previously protected forests. This change of the Natural Reservation limits might be illegal as it was not reported to the EC or made public. Deep logging roads are present throughout the area, with signs of heavy erosion. Logging was done on steep slopes of (over 30%) that are prone to erosion.

[8] https://www.eea.europa.eu/en/datahub/datahubitem-view/f60cec02-6494-4d08-b12d-17a37012cb28

Top photo: ground visit showing recently cut logs in March 2024. Bottom photo: a vast network of logging roads have been left behind leading to increased erosion, March 2024.