2025

ALIGNMENT ASSESSMENT

CF-001-PE-24072025 MANU, MADRE DE DIOS, PERÚ
Biodiversity Value of Regenerating Rainforest
Crees Foundation

November 12, 2025

The regenerative
Standard

ALIGNMENT EVALUATION FOR THE PROJECT SUBMITTED BY CREES FOUNDATION, "BIODIVERSITY VALUE OF REGENERATING RAINFOREST", IDENTIFIED WITH THE UNIQUE CODE CF-001-PE-24072025 MANU, MADRE DE DIOS, PERÚ.

CONTEXT

As part of the certification process for positive nature projects and the subsequent issuance of Verified Positive Nature Credits (VNPCs) under the Ases On-Chain Protocol (aOCP) Certification Program, the project developer "Crees Foundation" presented the "Biodiversity Value of Regenerating Rainforest" project. This project activity is in the aOCP onboarding stage. Compliance with the aOCP principles, values, standards, and requirements is a fundamental requirement for participation in the program. This assessment is carried out during the onboarding stage, prior to the registration of project activities, as stipulated in the aOCP Procedures document, which describes all the stages a project goes through from its inception to issuance, sale, and purchase.

Since the Project's activities have already been implemented before the start of the onboarding process, it participates as a Modality B project. According to the aOCP Procedures document, Modality B projects must go through the following process to be registered:

1. Application through the Project Submission Form (PSF), completed by the project proponent.
2. Documentation review and alignment assessment, conducted by the aOCP Operations Team.
3. Payment of incorporation fee by the project proponent.
4. Project pre-registration, carried out by the aOCP Operations Team.
5. On-site validation of the Project's implemented activities, carried out by the OCP Operations Team.
6. Preparation of Baseline Report, Monitoring Plan, Credit Issuance Contingent Table, carried out by the aOCP Operations Team.
7. Project proponent agreement.
8. Project Validation by an external and independent Validator, delivering a Project Validation Report.
9. Project registration letter and issuance of first credits, carried out by the aOCP Operations Team.

This report corresponds to step 2, Alignment Assessment.

ALIGNMENT ASSESSMENT

The aOCP is based on sound principles intended to ensure that Project activities seeking registration and accreditation with VNPC demonstrably and positively impact ecosystems in a real, measurable, permanent and additional manner, while avoiding any harm to ecosystems and/or society.

Compliance with the aOCP principles, values, standards, and requirements is a fundamental requirement for participation in the program. This assessment is conducted during the onboarding phase, prior to the registration of project activities. This mandate is stipulated in the aOCP Procedures document, which describes all stages of a project from its inception to the issuance, marketing, and retirement of VNPCs.

A positive result of the Alignment Assessment with the principles, values, rules and requirements of aOCP confirms that the proposed Project activity:

1. It belongs to one of the following types of projects:
    a. Forest management, including afforestation, reforestation and revegetation (ARR)
    b. Regenerative agriculture
    c. Silvopastoral management
    d. Urban Forests / Climate Action of Individual Trees
    e. Biochar
2. Adheres to environmental and social requirements of doing no harm;
3. It is expected to have positive impacts on biodiversity;
4. The Project was developed less than 10 years ago;
5. Meets the additionality criteria for the requested VNPCs;
6. Has documentation proving ownership of the land or an agreement for the duration of the project;
7. The Project area has not been degraded, deforested or burned in the last 24 months;
8. For projects applying for biodiversity credits for species conservation, a positive Alignment Assessment also confirms that the proposed project area has a high conservation value due to its preservation status;
9. Areas where the average species abundance indicator (also reported as biodiversity integrity) is less than 0.80, indicating that biodiversity is at risk and requires restoration actions, are eligible for biodiversity restoration credits.
10. The key species for biodiversity conservation reported by the Project proponent are recognized as Key Species according to the criteria established in the aOCP Methodology for the evaluation of biodiversity for species conservation V2.0[1].

Certain circumstances may result in an unfavorable evaluation and, if not satisfactorily rectified or clarified, could lead to the rejection of the Project activity registration within the aOCP.

These circumstances include:

- Failure to comply with the principles, values, standards and requirements of aOCP,
- Issuance of contradictory and/or false statements by the proponent or developer of the Project,
- Decreased confidence in the Project activity's ability to deliver the intended ecosystem and/or societal benefits due to an inadequate risk management plan, which includes a

[1] https://www.nat5.bio/wp-content/uploads/2025/10/aOCP-Metodologia-para-VBBC-por-conservacion-de-especies-V2.0.pdf

comprehensive assessment of internal, external, and natural risks, as well as risk mitigation and contingency planning.

According to the information provided by the Project Proponent in the Project Submission Form (PSF), the "Biodiversity Value of Regenerating Rainforest" project, led by the Crees Foundation in the Manu Biosphere Reserve buffer zone (Madre de Dios, Peru), is a forest management initiative focused on promoting and scientifically validating the ecological recovery of a 643-hectare private reserve (MLC). Once heavily degraded by cattle ranching and agriculture, the MLC has been naturally regenerating for over two decades and now supports biodiversity comparable to primary rainforest. The project's main goal is to leverage 15 years of standardized biodiversity monitoring data, developed in collaboration with the University of Glasgow, to demonstrate ecological additionality and generate Verified Biodiversity-Based Credits (VBBCs) that finance continued conservation and environmental education for Peruvian biologists. Key activities include long-term biodiversity monitoring of butterflies, birds, mammals, amphibians, and reptiles using transects and camera traps, community engagement, and stewardship of regenerating forest ecosystems within a vital wildlife corridor connected to Manu National Park.

The project area and sampling points used for the present analysis are shown in Figure 1.

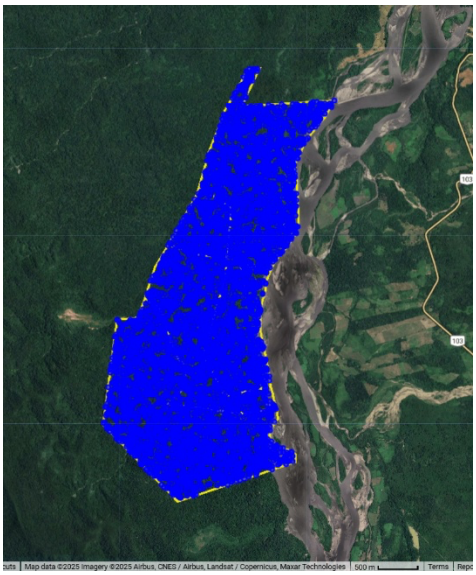


Figure 1. Project area and sampling points used for NDVI analysis.

METHOD OF ANALYSIS

The proposed Project activity was assessed to determine its alignment with aOCP rules and requirements, using the following checklist.

Alignment criteria	Y: Yes N: No P: Partially NA: Not applicable	Comments
Does the project belong to one of the following types? • Forest management, including ARR • Regenerative agriculture • Silvopastoral management • Urban forests / individual climate action • Biochar	**Y**	The project falls into the forest management category.
Does the project meet the requirement of not causing environmental and social harm?	**Y**	
Has documentation proving landownership or an agreement been provided for the duration of the project?	**Y**	
If the project has already started, is it less than 10 years old?	**N***	The project began in 2010; however, intervention is expected to continue until 2035.
Are the species considered for reforestation classified as “invasive” or “exotic”?	**NA**	
Is the project expected to have positive impacts on biodiversity?	**Y**	The project aims to improve and facilitate natural regeneration, thereby supporting and increasing the existing biodiversity.
Do the requested VNPCs meet the additionality criteria?	**Y**	
Have any trees or shrubs been cut down in the project area in the last 2 years?	**N**	
Is the project area located in a Protected Natural Area?	**N**	The project area is a private reserve located near Manu National Park and functions as a wildlife corridor.

Alignment criteria	Y: Yes N: No P: Partially NA: Not applicable	Comments
For biodiversity restoration credits, the biodiversity integrity indicator is < 80%.	**NA**	
For biodiversity conservation credits, the biodiversity integrity indicator is > 80%.	**Y**	The biodiversity integrity index is 93.655%.
Are the proposed keystone species aligned with the aOCP criteria for keystone species?	**NA**	
For carbon credits, what is the value of the ARR Site Suitability Statistic?	**N**	Area within Trees (Unsuitable), eligibility may be low (0.5%)
For carbon credits, what is the value of the New Project Performance Benchmark Estimation tool?	**N**	The performance benchmark is likely to be negligible or low.

Historical land cover dynamics were analyzed using high-resolution Google Earth imagery and the Normalized Difference Vegetation Index (NDVI). NDVI is a widely used remote sensing metric that provides information on the density and health of vegetation in a specific area. It is calculated from the difference between the reflectance of near-infrared light and red light from the Earth's surface.

By analyzing historical land cover, NDVI allows us to track changes in vegetation over time. By examining archived NDVI data, it is possible to observe trends in vegetation density, identify changes in land-use patterns, and monitor the effects of factors such as urbanization, deforestation, or natural disasters.

NDVI provides information on the quantity and quality of vegetation in a given area. It ranges from -1 to +1, with values close to +1 indicating dense, healthy vegetation, while values close to -1 suggest the absence of vegetation or the presence of artificial surfaces.

Using Google Earth Engine, the maximum monthly NDVI was calculated from January 2019 to October 2025 using Sentinel-2 satellite imagery. Random control points were then plotted on each property (Figure 1), and the monthly NDVI value at each point was extracted.

Google Colab was used to generate boxplots showing the distribution of NDVI values at the control points. A boxplot is a standardized way of displaying the distribution of a data set based on its five-point summary: the minimum, the first quartile [Q1], the median, the third quartile [Q3],

and the maximum. Boxplots provide information about outliers, data symmetry, the degree of clustering, and whether and how the data are skewed.[2].

Biodiversity integrity quantifies the impact humans have had on the integrity of species communities. Anthropogenic pressures, such as land-use conversion, cause dramatic changes in the composition of species communities, and this layer illustrates these changes by focusing on the impact of forest changes on biodiversity integrity[3]. This information was evaluated through the Orbify platform.

RESULTS

Analysis of Google Earth imagery (Figure 2) shows no marked change in vegetation cover in the project area; however, satellite imagery was very limited for this zone. Only three images were available in the last 50 years, including a half image in 1985 of low resolution, a half image in 2010 of improved resolution, and a high-resolution full image in 2025. The 2025 image shows the project area is densely forested and appears overall healthy, supporting the positive regenerative claims by the project developer. A more relevant assessment of vegetation dynamics is provided in the monthly NDVI analysis (Figure 3).

[2]Galarnyk, M. Understanding box plots.https://builtin.com/data-science/boxplot

[3]Hill, S.L., Arnell, A., Maney, C., Butchart, S.H., Hilton-Taylor, C., Ciciarelli, C., ... and Burgess, N.D. (2019). Measuring the status and change of forest biodiversity globally. Frontiers in Forests and Global Change, 2, 70.

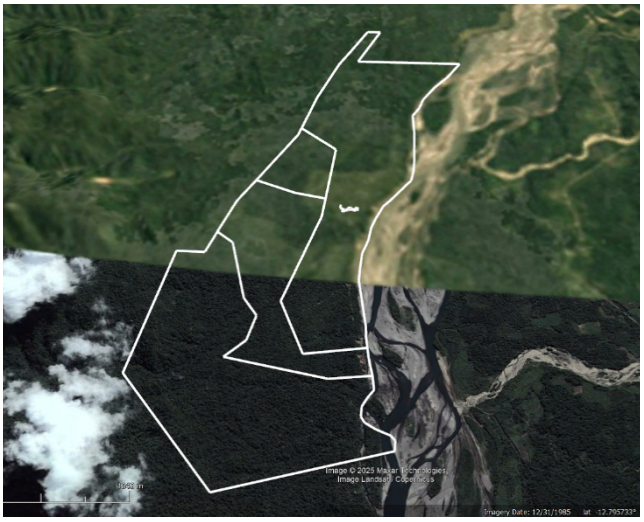
December 1985 (top) & June 2010 (bottom)	March 2025
	

Figure 2. Google Earth images of the Project area from 1985, 2010, and 2025.

The NDVI analysis from 2019 to 2025 (Figure 3) shows consistently high vegetation greenness throughout the study period, with the moving average (MA) generally remaining between 0.78 and 0.88, indicating a stable and healthy level of vegetation cover. Between 2019 and 2022, there were two prolonged occurrences of decreases in average NDVI; however, the gradual rise in the average after mid-2023 and sharp incline in NDVI at the beginning of 2024 points to improved vegetation vigor, possibly linked to favorable environmental patterns or continued forest regeneration. Overall, the moving average trend supports a picture of resilient, well-recovered vegetation responding dynamically to local rainfall cycles.

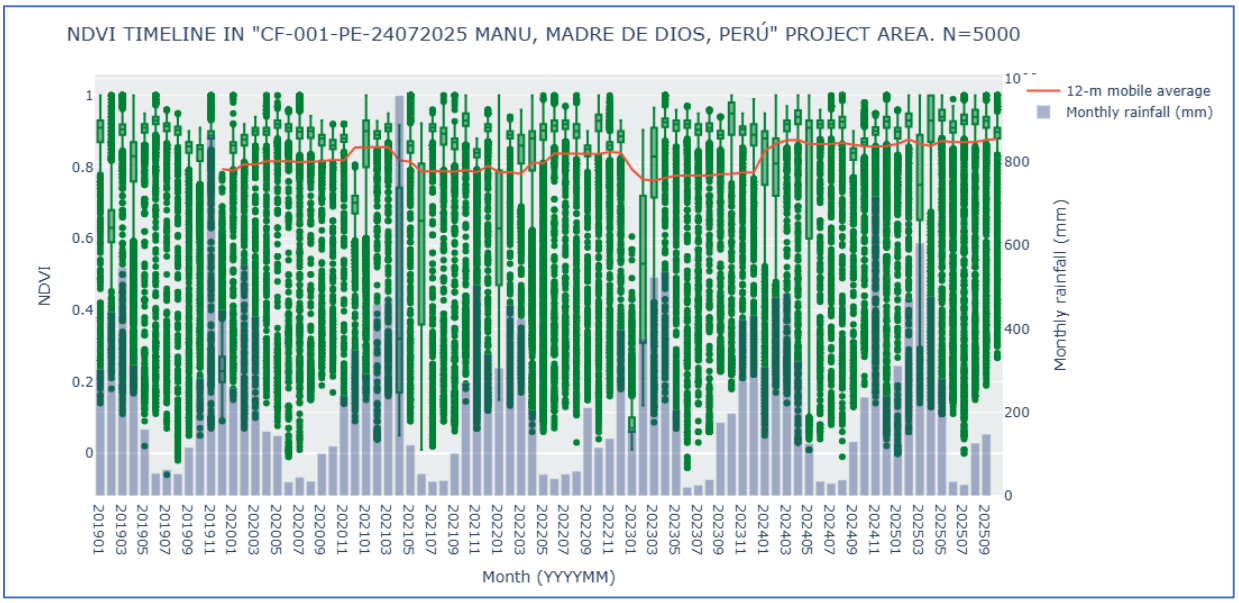


Figure 3. Monthly NDVI and precipitation from January 2019 to October 2025

Biodiversity integrity increased from 93.638% in 2017 to 93.655% in 2020 (Figure 4). The elevated integrity level is within the biodiversity conservation objectives.

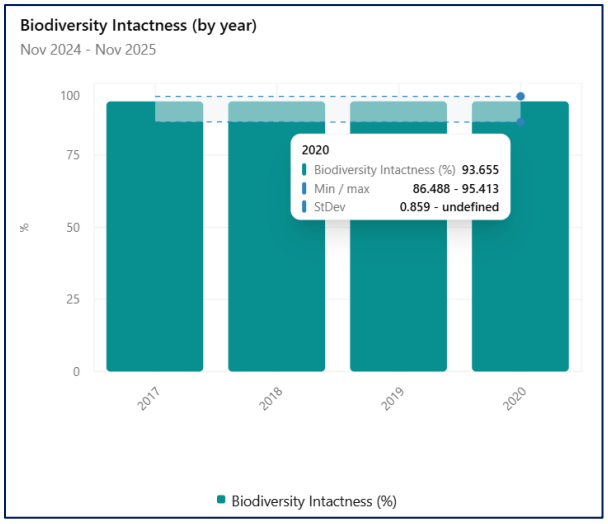


Figure 4. Biodiversity integrity

The biodiversity restoration and conservation strategy of the “Biodiversity Value of Regenerating Rainforest” project centers on facilitating and documenting natural forest regeneration within the reserve, located adjacent to the Manu National Park. Rather than relying on active reforestation, the strategy promotes passive restoration, allowing previously degraded lands—once used for cattle ranching and agriculture—to recover naturally under protection. This process is reinforced

by long-term, standardized biodiversity monitoring of key indicator groups such as butterflies, birds, mammals, amphibians, and reptiles, enabling data-driven evaluation of ecological recovery and species return. The project also ensures habitat connectivity within a regional wildlife corridor, safeguarding rare and threatened species while preventing further deforestation or degradation. Conservation actions are integrated with community education and capacity building, fostering local stewardship and training future Peruvian biologists. Overall, the approach combines scientific monitoring, natural regeneration, and social inclusion to achieve measurable biodiversity gains and sustain ecosystem resilience in the Manu Biosphere Reserve.

Beyond the regenerative scope of the project, there are other species, particularly those identified as key due to their endemism or classification as at-risk species. Their potential distribution is found within the project area, according to bibliographic information, which can be found in Table 1.

Table 1. Key species with potential distribution (inaturalist.org)

Class	Scientific name	Common name	World Status**	Distribution Peru
Fauna				
Mammalia	***Alouatta sara***	Bolivian Red Howler Monkey	**NT**	-
Aves	***Ramphastos tucanus***	White-throated Toucan	**VU**	-
Aves	***Ara severus***	Chestnut-fronted Macaw	**LC**	-
Mammalia	***Saimiri boliviensis***	Black-capped Squirrel Monkey	**LC**	**Native**
Reptilia	***Paleosuchus trigonatus***	Schneider's Dwarf Caiman	**LC**	**Native**
Flora				
Liliopsida	***Mauritia flexuosa***	Moriche Palm	-	**Native**

**** Global status of the IUCN Red List:** (E) Extinct, (EW) Extinct in the wild, Collapsed, (CR) Critically Endangered, (EN) Endangered, (VU) Vulnerable, (NT) Near Threatened, (LC) Least Concern, (DD) Data Deficient, (NE) Not Evaluated.

CONCLUSIONS

a) The project falls into the forest management category with a focus on naturally regenerating a wildlife corridor, aligning with the criteria established by the aOCP Program.

b) Activities began in January 2010, but will remain active until December 2035, thereby meeting the requirement that projects be no more than ten years old at the time of this alignment assessment. In accordance with the retroactivity criterion for biodiversity projects, only activities carried out within the past 10 years may be considered, provided

that the project developer can demonstrate, through concrete actions, real data, and verifiable information, that these activities have contributed significantly to the conservation of biological diversity.

c) Multiple species of at-risk or native species were documented in the project area, and bibliographic resources suggest the biodiversity within the region of this project is incredibly high, supporting the need for further improvements and biodiversity regeneration within the precise project area.
d) The project area has not been subject to deforestation in the last two years, aligning with the criterion of avoiding environmental degradation.
e) The project area is not located within a legally designated Protected Natural Area, which complies with the additionality criterion.
f) Biodiversity intactness is 93.655%, aligning with biodiversity conservation objectives.
g) The Project Developer has submitted documentation proving land ownership and an agreement with local communities, which fulfills the criterion of not generating social harm.
h) The activities proposed by the project have strong potential to contribute to biodiversity conservation:
    - The project promotes natural forest regeneration across varied disturbance zones, enhancing ecological function, increasing habitat heterogeneity, and fostering conditions that support the return and persistence of native wildlife species.
i) The project presents a sound foundation for ecosystem and biodiversity conservation. The project may be **eligible** for registration under **Modality B of the aOCP**, allowing it to advance in the evaluation process for the generation of Verified Biodiversity-Based Credits (VBBC).