ENVIRONMENTAL REPORT

COMPANY:
MADERERA RIO ACRE S.A.C.

Environmental Report

2024

Reporte Ambiental realizado por:

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CALLAO / CALLAO / CALLAO.

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I. GENERALITIES

1.1. PRESENTATION

Maderera Rio Acre S.A.C (hereinafter Maderacre) has an industrial wood processing establishment located at km 227 of the South Interoceanic Highway of the Puerto Maldonado section, Iñapari district, province of Tahuamanu and department of Madre de Dios, in compliance with regulations environmental regulations in force, has processed and obtained the licenses required by Law.

The company has two environmental management instruments (IGA) approved environmental studies, the first is the Declaration of Environmental Adequacy, which was approved by Directorial Resolution No. 00151-2021-PRODUCE/DGAAMI dated March 15, 2021 and a Technical Report Support approved with Directorial Resolution No. 00360-2022- PRODUCE/DGAAMI, which establishes the environmental commitments assumed by the company whose compliance is presented below in this report.

1.2. AIM

1.2.1. General objective

Comply with the commitments established in the current environmental management instrument, in accordance with the corresponding environmental regulations.

1.2.2. Specific objectives

- Present a report on compliance with prevention, mitigation or correction measures of the identified environmental impacts.
- Present the Monitoring and Control Plan report
- Evaluate environmental noise results
- Evaluate air quality results
- Evaluate flora results
- Evaluate fauna results

1.3. LEGAL FRAMEWORK

The legal basis for this environmental monitoring report is based on the D.S. N° 017-2015-PRODUCE[1] applicable to production activity and

[1] D.S. N° 017-2015-PRODUCE - The Environmental Management Regulation for the Manufacturing Industry and Internal Trade is approved.

internal trade, at the same time there are environmental standards for comparison (Standards, maximum permissible limits) that are detailed below.

Article 62, Environmental Report of Chapter V, of the same name cites the following: “62.1 The owner must present the Environmental Report to the supervisory entity, reporting the results of the monitoring, follow-up and control actions and the progress of the commitments assumed. in the approved environmental management instrument.

62.2 The Environmental Report must be presented in accordance with the formats approved by the supervisory entity, considering the obligations and commitments contained in the approved environmental management instrument. If the supervisory entity identifies the need to modify the deadlines of any aspect of the Environmental Report, it must notify the competent authority for the corresponding modification.

Table I-1 Current Environmental Standards by Component.

Environmental Component	Applicable Legal Framework	Standard and publication date
Air Quality	Environmental Quality Standards for Air	D.S. N° 003-2017-MINAM (07-06-2017)
Emissions Sodas	World Bank International Finance Corporation. General Environmental Guidelines (07-01-98) / (04-30-2007)	IFC/BM (01-07-98) / (30-04-2007).
	Standards on Quality of Air and Control of the Atmospheric pollution.	Decree No. 638 / 1995 (Venezuela)
Environmental Noise	Regulation of Environmental Standards for Noise. Nationals of Quality	D.S. N° 085-2003-PCM (30-10-2003)
Fauna	“Wildlife Inventory Guide”	RM 057-2015-MINAM
Flora	Flora and Vegetation Inventory Guide	RM 059-2015-MINAM

II. GENERAL INFORMATION:

2.1. COMPANY GENERAL.

Below is data on the Company Name of the company.

Table II-1: General data of the company-Maderacre

Company name	Maderera Rio Acre S.A.C.
RUC	20527030421
Legal Domicile	Seventh Street N°229-Urb. La Rinconada goes down
District	La Molina
Province	Five
Department	Five
Telephone	975376621
Email	framos@maderacre.com
Legal Representative	Wong Lu Vega, Eíasmo Jesús
Attorney	Nelson Nilton Kíoll Kohel

2.2. GENERAL DATA OF THE PRODUCTION UNIT.

The data regarding the location of MADERACRE is described in the following table.

Table II-2: General information of the establishment

Location of the property	km 227 of the South Interoceanic Highway of the Puerto Maldonado section
District	Ipapari
Province	Tahuamanu
Department	Mother of God
Productive Category	ISIC: 1610
Environmental Management Instruments	DAA: Directorial Resolution N°00151-2021-PRODUCE/DGAAMI ITS: Directorial Resolution No. 00360-2022-PRODUCE/DGAAMI ITS: Directorial Resolution No. 00026-2024-PRODUCE/DGAAMI

2.1. DESCRIPTION OF ACTIVITIES.

Sawing: It carries out the previous sizing of the thickness of the products through longitudinal cuts that can be radial or tangential, transforming the logs into planks and using more efficient techniques. Vertical band saws are used for these cutting tasks.

Edged: Dimension the width of the products through longitudinal cuts, transforming the planks into quarters and using more efficient techniques. Disc saws arranged in multiple and single logging machines are used in this process.

Reaserrado: Performs the final sizing of the thickness of the products through longitudinal cuts, transforming the quarters into boards. Cuts are made by a smaller vertical band saw or multi-head horizontal band saws.

Blunt: They measure the length of the products. All defects not allowed for the following processes are eliminated. The cuts are transverse and are executed by disc saws. Once the length is defined, its quality is evaluated to determine if the piece is suitable for drying or for sale.

Recovery: It consists of sizing the width of the pieces, eliminating defects that may occur along them. Products of smaller dimensions and in some cases of lower quality are obtained.

Stowage: It consists of stacking the pieces of wood already converted into boards using separators, taking into account the segregation of materials by species, dimension and quality. This operation does not generate waste.

Pre-drying: Once the pieces of wood have been stowed in the form of rumas or packages, they are taken to the pre-drying yard to be stacked and begin a process of moisture loss in the open air for a period of 30 to 40 days with the purpose of reduce its moisture content to approximately 20 to 28%.

Drying: After pre-drying, the stowed wood is taken to the drying chambers for time ranges between 14 to 21 days, depending on the initial moisture content, dimensions and the species of wood to be dried. Drying programs.

Edged: After drying, the cutting processes are resumed. During this edging operation, the pieces of dry wood are resized in width with the help of two multiple edgers with an S2S finish (edges).

Brushed: Operation in which the final thickness is given to the pieces of dry wood, with an S2S finish on the faces, which, added to the previous process, generates a material with a final S4S finish.

Molded: Operation in which the final E4E finish is given, which can be smooth or grooved on one of the faces.

Blunt: During trimming, the final length of the pieces is given with a transversal cut to each piece. It also serves to eliminate defects present in the pieces.

Preservation: Waterproofing is applied in two stages of the secondary process: before drying and upon exit from packaging, before becoming a finished product. The activity consists of eliminating and/or reducing the porosity of the wood, sealing the ends and/or tips, by applying paraffin or wax, in order to isolate the product from environmental humidity, and prevent the generation of cracks in the wooden pieces. The product is purchased in 55-gallon cylinders, and is applied using a torch connected to a compressed air intake. It should be noted that the owner has specified that the aforementioned input is not dangerous.

Varnishing: The process consists of applying 07 layers of varnish and paint based on aluminum oxide, as an additive to urethane-based varnishes, which provides harder and more durable finishes without its application being visible; however, it is not considered part of the finish itself. On the other hand, it should be noted that the varnishing activity is outsourced to the company Unión Flooring S.A.C., which is located in the city of Lima. The aforementioned company maintains a current contract with the subsidiary of Maderacre, under the company name Maderacre Timber S.A.C. Unión Flooring S.A.C., is responsible for managing the purchase and application of the following supplies for varnishing: UV drying varnish, transparent plastic, stretch film, transparent plastic, green strap, white strap, corner pieces, packaging tape and stretchers.

Packaging: Packaging consists of assembling packages of pieces of the same type and arranged by equal lengths and thicknesses, strapped and packaged to be transferred to the finished product warehouse. charcoal manufacturing since 2014 and residual logs are used to operate these artisanal ovens.

Aerial view of the company facility

Below is the table with the formats suggested by the competent authority, corresponding to the implementation schedule of the DAA Environmental Management Plan.

N°	GENERAL ACTIVITY	SPECIFIC ACTIVITY	START DATE	DATE OF CONCLUSION	TOTAL INVESTMENT (S/.)	ACTIONS IMPLE
		Implementation schedule of measures to prevent, mitigate or correct the environmental impacts of the DAA.				
1	Continue with the annual maintenance of the boiler burners, preferably prior to environmental monitoring, in order to reduce impurities accumulated in the chimney and reduce thus the emissions.	Accomplish Annual preventive maintenance on the boiler burners.	012/2021	--	5 000	The company has a periodically reviewed annua preventive maintenance of the boiler burner and <u>The following evidence is attached:</u> Annex 5 presents the company's maintenance pr
2	Implementation of a smoke purification filter in the boiler, with an efficiency of 90%.	Implement a smoke purifier with an efficiency of 90%.	12/2021	03/2022	10 000	A smoke purifier was implemented with an efficie <u>The following evidence is attached:</u> Annex 6: Purifier report with 90% efficiency is pre
3	Closure of septic tanks and implementation of 05 biodigesters for the treatment of domestic effluents	Permanently close the septic tank and install and start up five biodigesters which must have a maintenance program for their correct operation. functioning.	12/2021	03/2022	50 000	The septic tank was no longer used and closed, and put into operation. <u>The following evidence is attached:</u> Annex 7: the preventive maintenance plan for the maintenance report are presented.
4	Implementation of a 5m excavated sludge dewatering pond^3, covered with geomembrane for use as a soil improver.	Make the pond for sludge dewatering with the dimensions mentioned in commitme nt.	07/2021	12/2021	1 000	Geomembrane was used as a waterproofing me sludge dewatering. <u>The following evidence is attached:</u> Annex 8: Photographic evidence of the sludge de

5	Placing information posters on the care and protection of wildlife.	Place signs visibly indicating the care and protection of wildlife in the facility area.	03/21	06/21	80	Information signs regarding the care of wildlife ar The following evidence is attached: Annex 9: A photographic record of the installed s
6	Training plant personnel regarding the management and care of potential wildlife species, as well as their conservation status.	Accomplish periodic training on the subject	07/2021	---	---	Staff training was carried out periodically on the f evidence is attached: Annex 11: documents of the training provided to
7	Prohibit feeding wild species since doing so is “wildling” them and this approach to human beings could put them in danger.	Install signs prohibiting feeding and caring for wildlife, these will be installed within the area of the installation.	03/21	---	---	Prohibition signs were installed within the facility The following evidence is attached: Annex 9: A photographic record of the installed s .
8	Prohibit the temporary capture, hunting, commercialization, physical damage, retention of wild species, offspring, eggs, nests or parts of the species, as well as their approach. to them.	Post signs prohibiting the capture or damage of wild species.	03/21	---	---	Prohibition signs were installed within the compa evidence is attached: Annex 9: A photographic record of the installed s

N°	GENERAL ACTIVITY	SPECIFIC ACTIVITY	START DATE	DATE OF CONCLUSION	TOTAL INVESTMENT (S/.)	ACTIONS IMPLE
9	Hire the services of an authorized water supplier, conditional on availability in the area.	Search and contract for a company authorized to provide water, is conditioned on the availability of this company near the area of the installation.	12/2021	03/2022	5 000	An ITS is generated for the implementation of 2 V The following evidence is attached: Annex No. 3 Directorial Resolution No. 00026-20
			Implementation schedule of measures to prevent, mitigate or correct environmental impacts			
1	Vehicle maintenance	Include vehicles used within the facility in the maintenance program.	17/08/22	17/11/22	--	There is a preventive maintenance program and following evidence is attached: Annex 5: Maintenance program
2	During the operation of the artisanal ovens, a visual inspection record will be kept and, if necessary, the beds (artisanal ovens) will be covered with sawdust.	Develop a periodic record of the inspections carried out on the artisanal ovens, including the beds with sawdust.	17/08/22	---	--	There is a Charcoal Production Registry for artis process that is followed to carry out the operation The following evidence is attached: Annex 10: Coal Production Registry
3	Constant preventive maintenance of industrial ovens and their treatment systems (every 15 days).	Develop a preventive maintenance plan for industrial ovens and their treatment system.	17/08/22	---	--	There is preventive maintenance for industrial ov The following evidence is attached: Annex 5 presents the company's maintenance pr

4.1. Location of monitoring points

Monitoring points[2] They were located in accordance with the provisions of Annex No. 2 of Directorial Resolution No. 00360-2022-PRODUCE/DGAAMI.

Table IV-1: Monitoring points

Environmental Component	Season	Description/Location	UTM coordinates		Parameters	Frequency
			It is	North		
Environmental noise	DA-01	Located behind the warehouse	437 245	8 787 445	Daytime dBA (LAeq)	Yearly
	DA-02	Located in a log yard	437 067	8 787 542		
	DA-03	Located close to tap and workers' housing	437 023	8 787 740		
	DA-04	Located at door No. 2	436 727	8 787 793		
	DA-05	Located on the entrance road, at the height of the kiosk	437 221	8 787 769		
	DA-06	Located close to dining room and homes	437 282	8 787 697		
Air Quality	CA-01 (Windward)	Located near the industrial oven	437 197	8 787 424	PM-10, CO, SO_2 and not$_2$	
	CA-02 (Leeward)	Located close to industrial ovens	437 198	8787461		
	CA-03 (Windward)	Located close to the artisan ovens	436 927	8 787 373		
	CA-04 (Leeward)	located close to the artisan ovens	436 940	8 787 488		
	IN 1	Cauldron (drying area)	437 148	8 787 439	Carbon monoxide (CO), nitrogen oxides (NOx), sulfur dioxide (SO_2), Solid particles	
Flora	T-1	Very close to residents and the interoceanic highway	437 277	8 787 525	Wealth, Abundance, Shannon Index, Simpson	Yearly
	T-2		437 283	8 787 544		
	T-3		437 292	8 787 562		
	T-4		437 304	8 787 581		
	T-5		437 323	8 787 609		
	T-6		437 347	8 787 664		
	T-7		436 926	8 787 718		
	T-8		436 888	8 787 782		
Fauna (birds, mammals, amphibians and reptiles)	P1	Very close to residents and the interoceanic highway	436 949	8 787 695	Wealth, Abundance, Shannon Index, Simpson	
	P2		434 326	8 787 577		
	P3		436 798	8 787 804		
	P4		437 056	8 787 261		

[2] Annex No. 2. ITS approval letter.

LOCATION PLAN OF MONITORING POINTS

V. AIR QUALITY MONITORING

5.1. Specific objectives

- Determine the concentration of Particles Smaller than 10 microns (PM10), Nitrogen Dioxide (NO_2), Carbon Monoxide (CO) and Sulfur Dioxide (SO_2), at four Air Quality monitoring points located to the windward and leeward of the facility.
- Compare the results with the values established in the Environmental Quality Standards for Air determined in the D.S. No. 003-2017-MINAM.

5.2. Sampling Methodology

The sampling and analysis methodology was carried out taking into account the "Air Quality Monitoring and Data Management Protocol" prepared by DIGESA where it establishes the methodology for sampling.

A. Suspended particles

- Methodology for Particulate Material

  For the determination of PM10, a high-volume sampler (Hi-Vol) was used that sucks air from the environment, at a constant flow (1.3 to 1.7 m^3/min), inside a specially shaped orifice where the suspended particulate material is inertially separated into fractions of one or more, within a range of less than 10 microns in a time of 24 hours.

  The filter is placed in a filter holder with a frame and is fixed by means of a metal frame, it is protected by means of a mobile shell that is located in the upper part of the equipment, which has lateral slots through which the air enters. .

  It should be noted that the filter is weighed, before and after use, in order to determine the net gain (mass) of PM 10 collected. The total volume of air sampled is corrected to normal conditions of 23 ± 2°C and 50 ± 5 R.H. (Relative humidity) respectively. The method described is acquaintance as gravimetric, NTP 900.030:2003. Reference methods for the determination of respirable particulate matter such as PM 10 in the atmosphere.

  The Hi-Vol equipment is designed to:

  - Aspirate the air sample and introduce it through the sampler inlet, through the particle collection filter, at a uniform speed in all sections of the filter.
  - Fix and seal the filter in a horizontal position so that the air sample passes through the filter.
  - Allow the filter to be installed and removed conveniently.

- Protect the filter and sampler from precipitation and prevent the introduction of insects and other debris.
- Minimize air leaks that could cause error in the measurement of the volume of air passing through the filter.
- Discharge the exhaust air at a sufficient distance from the sampler inlet to minimize sampling.
- Minimize dust collection from the support surface.

B. Gases

For sampling NO gases$_2$, CO y SO_2 A sampling train is installed at each station, adsorbent compound is used, which is bubbling with the use of the impinger in order to capture the desired sample in a given time with a controlled air flow. For this purpose, a rotameter is used appropriately. verified and with a current calibration certificate.

- Nitrogen dioxide (NO) gas sampling method$_2$)

  It was determined by the Sodium Arsenite method. Sampling of nitrogen dioxide contained in the air is carried out using a sampling train, provided with a porous glass bubbler, through which the air sample passes through an alkaline absorbent solution Sodium Arsenite plus Sodium Hydroxide at a flow rate of 0.4 L/min.

- Carbon monoxide (CO) sampling method.

  For the sampling of this gas, a sampling train (dynamic method) has been used and it has been determined by the colorimetric method. At constant flow of 0.5 L/min. The results are expressed in ug/m^3.

- Sulfur Dioxide (SO) Gas Sampling Method$_2$)

  The determination of this gas was carried out using the standardized West-Gaecke method, also known as the Pararosaniline method, using a sampling train, which consists of a dynamic system composed of a pressure-suction pump, a pressure controller, flow and a 0.1 M sodium tetrachloromercurate capture solution at a flow rate of 0.2 L/min.

5.3. Analysis Methodology

Table V-1: Analysis Methodology.

Parameters	Testing method	Units
PM10 Particulate Matter (High volume).	EPA-Compendium Method IO-2.1-1999; Ambient air sampling for total suspended particulate matter (SMP) and PM10 using a high volume (HV) sampler.	µg/m^3
Dioxide of Nitrogen (NO_2).	NTP-ISO 7996 1st Ed. 2019	
Monoxide of Carbon (CO).	NTP-ISO 4224 1ra Ed. 2019	
Sulfur Dioxide (SO_2).	NTP-ISO 10498 2nd Ed. 2017	

Fountain: Own elaboration.

5.4. Comparison standards

Below are the standards used to evaluate results, indicating the reference standard.

Table V-2: National Air Quality Standards.

Parameter	Unit	Standard	Reference norm
PM10 particles	mg/m^3	100	D.S. N° 003-2017-MINAM
Cabone monoxide		10000	
Nitrogen Dioxide (NO_2)		200	
Sulfur Dioxide (SO_2)		250	

Fountain: Own elaboration.

5.5. Results obtained

Table V-3: PM10 air quality results

Sample collection description / Sample Identification	Units	Air quality				Normative
		CA-01	CA-02	CA-03	CA-04	
13-14/04	µg/m³	187.1	142.5	46.1	35.7	100 µg/m³
14-15/04		45.5	47.1	18.7	19.2	
15-16/04		104.1	76.3	43.3	32.5	
16-17/04		49.5	52.5	37.4	36.6	
17-18/04		68.2	75.2	17.3	25.8	

Table V-4: CO air quality results

Sample collection description / Sample Identification	Units	Air quality				Normative
		CA-01	CA-02	CA-03	CA-04	
13-14/04	µg/m³	<632	<632	<632	<632	10000 µg/m³
14-15/04		<632	<632	<632	<632	
15-16/04		<632	<632	<632	<632	
16-17/04		<632	<632	<632	<632	
17-18/04		<632	<632	<632	<632	

Table V-5: NO2 air quality results

Sample collection description / Sample Identification	Units	Air quality				Normative
		CA-01	CA-02	CA-03	CA-04	
13-14/04	µg/m³	25	33.3	8.3	4.2	200 µg/m³
14-15/04		8.3	4.2	8.3	4.2	
15-16/04		58.3	54.2	<4.0	<4.0	
16-17/04		<4.0	54.2	<4.0	<4.0	
17-18/04		12.5	8.3	12.5	8.3	

Table V-6: SO2 air quality results

sample collection description / Sample Identification	Units	Air quality				Normative
		CA-01	CA-02	CA-03	CA-04	
13-14/04	µg/m³	<8.0	<8.0	<8.0	<8.0	250 µg/m³
14-15/04		<8.0	<8.0	<8.0	<8.0	
15-16/04		<8.0	<8.0	<8.0	<8.0	
16-17/04		<8.0	<8.0	<8.0	<8.0	
17-18/04		<8.0	<8.0	<8.0	<8.0	

The tables presented present the results obtained in which it is observed that the values of stations CA-03 and CA-04 are below the Environmental Quality Standards (ECA) for air.

However, in the CA-01 and CA-02 stations there are specific days where they exceed the Environmental Quality Standards (ECA) for air and coincide with the furnace shutdown process.

VI. METEOROLOGICAL MONITORING

6.1. Specific goal

- Analyze the meteorological conditions for the evaluation area, during the entire air quality sampling period based on the record of an automatic meteorological station.

6.2. Sampling methodology

To record the meteorological conditions of the study area, the automatic Davis Vantage Pro equipment was used, which features an Integrated Sensor Module that brings together several types of readings at a certain time. Data is sent to the console either via cable or wireless transmission. This weather station must be installed at a height of no less than 2 m, in a large environment without obstacles around it.

Table VI-1: Meteorological parameters.

Parameters	Equipment	Range	Precision
Temperature.	Davis Vantage Pro Wireless Weather Station.	- 45,0 °C a + 60,0 °C	+/- 0,5 °C.
RH.		0 % – 100 %	+/- 3% of the measured value.
Wind speed.		0,0 – 78,0 m/s	+/- 5% of the measured value.
Wind direction.		0° – 360°	+/- 7% of the measured value.

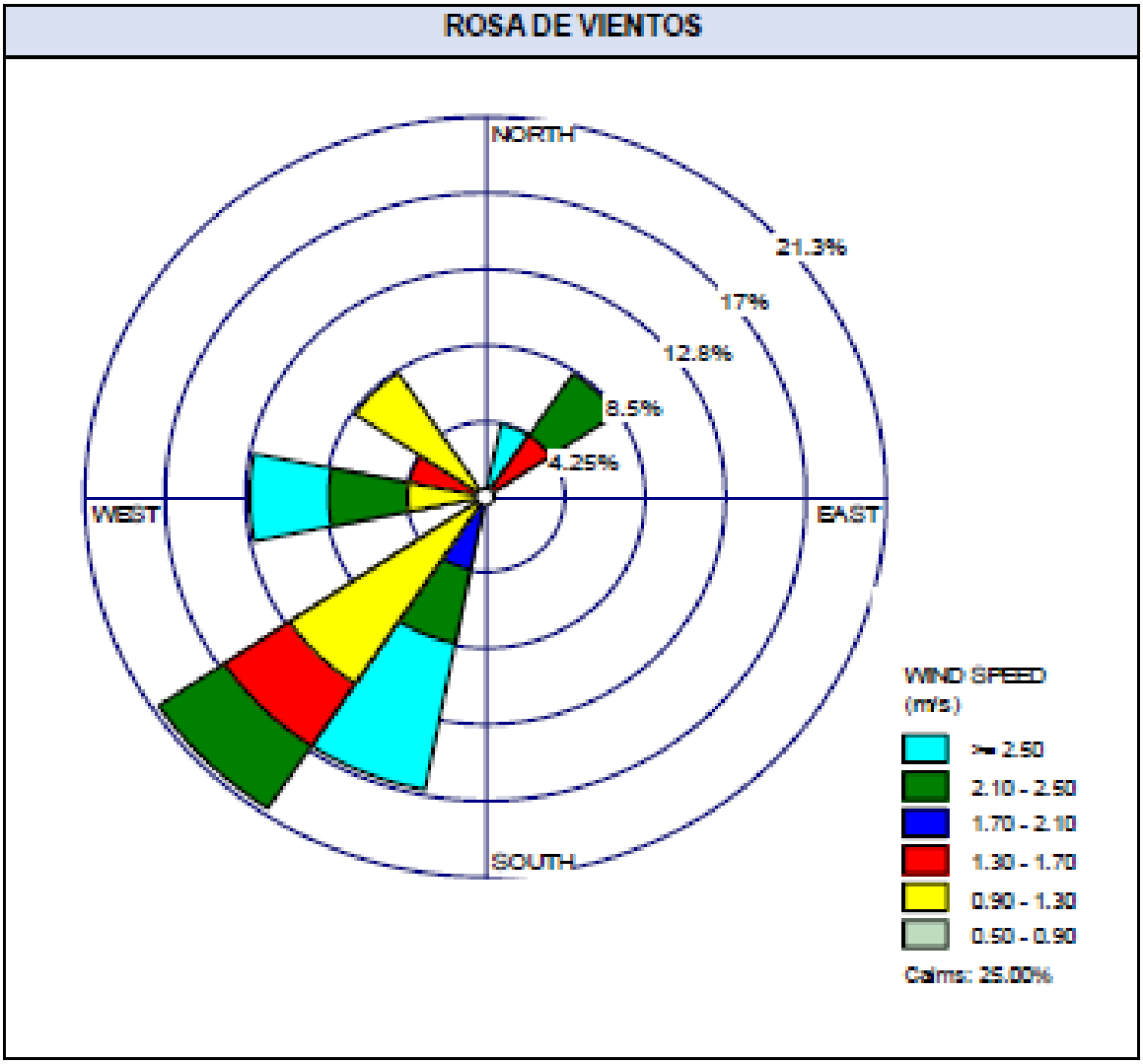
Fountain: Own elaboration.

6.3. Results obtained

Table VI-2: Detailed Measurement Results – Meteorological Parameters day 1.

METEOROLOGY						
Station/Code sampling		CA-01		Sampling point description	LOCATED NEAR THE INDUSTRIAL OVEN	
WGS -84 coordinates		E: 437197	N: 8 787424			
Date	Hour	Temperature (°C)	Humidity (%)	Speed wind (m/s)	Address of Wind	Pressure (mmHg)
2024-04-13	10:00	32,1	69	2,7	IN	978,7
2024-04-13	11:00	32,7	69	2,2	IN	978,3
2024-04-13	12:00	31,7	73	2,2	SW	978,1
2024-04-13	13:00	30,1	78	0,9	SW	978,1
2024-04-13	14:00	28,4	84	0,9	SW	978,7
2024-04-13	15:00	27,5	87	1,3	SW	979,1
2024-04-13	16:00	26,9	88	0,9	SW	979.8
2024-04-13	17:00	26,1	91	<0,3	WSW	980,0
2024-04-13	18:00	26,1	90	<0,3	WSW	980,5
2024-04-13	19:00	25,9	90	1,3	IN	980,6
2024-04-13	20:00	25,8	90	0,9	WNW	980,1
2024-04-13	21:00	25,4	90	0,9	NW	980,1
2024-04-13	22:00	25,1	91	0,4	NW	979,7
2024-04-13	23:00	24,9	92	0,4	NW	979,9
2024-04-14	0:00	25,0	92	0,4	NW	979,8
2024-04-14	1:00	25,2	92	0,4	AND	980,4
2024-04-14	2:00	25,4	92	<0,3	NO	981,5
2024-04-14	3:00	26,8	88	1,3	NO	982,2
2024-04-14	4:00	28,8	81	2,2	NO	982,5
2024-04-14	5:00	30,7	73	2,7	FOUR	982,3
2024-04-14	6:00	31,9	69	2,7	SSW	981,8
2024-04-14	7:00	32,3	70	2,7	SSW	981,1
2024-04-14	8:00	30,1	80	2,2	SSW	980,2
2024-04-14	9:00	32,0	71	1,8	SSW	979,0
AVERAGE		**2,21**	**83**	**1,3**	**SW**	**982,1**
MAXIMUM		**32,7**	**92**	**2,7**		**982,5**
MINIMUM		**24,9**	**69**	**0,3**		**978,1**

Wind rose from CA-01 day 1.

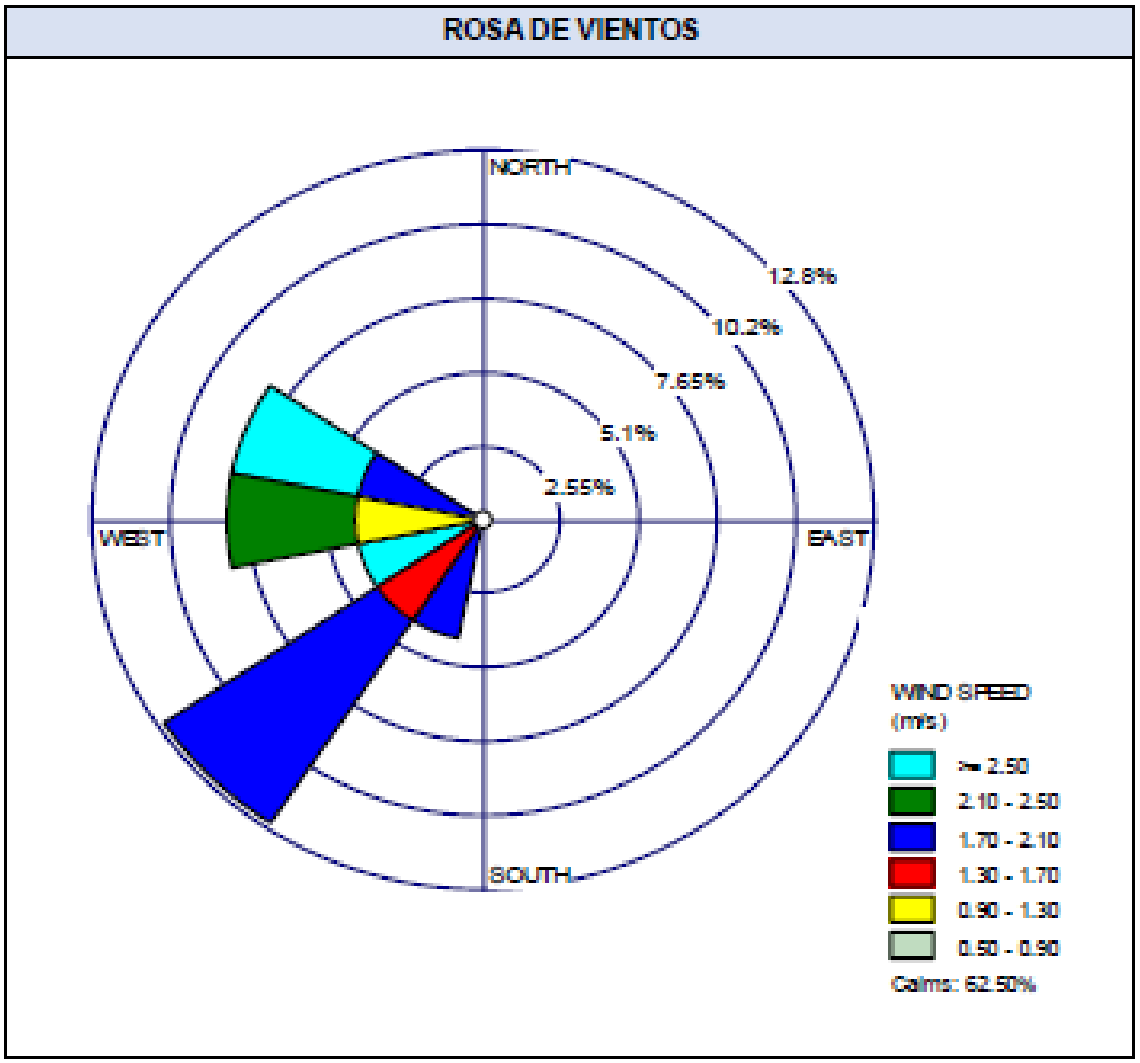


DIRECCIÓN PREDOMINANTE DEL VIENTO

Table VI-3: Detailed Measurement Results – Meteorological Parameters day 2.

METEOROLOGY						
Station/Sample Code		CA-01		Sampling point description	LOCATED NEAR THE INDUSTRIAL OVEN	
WGS -84 coordinates		E: 437197	N: 8 787424			
Date	Hour	Temperature (°C)	Humidity (%)	Wind speed (m/s)	Wind Direction	Pressure (mbar)
2024-04-14	10:00	31,9	69	2,7	WSW	981,8
2024-04-14	11:00	32,3	70	2,7	WNW	981,1
2024-04-14	12:00	30,1	80	2,2	IN	980,2
2024-04-14	13:00	32	71	1,8	SW	979
2024-04-14	14:00	28,1	87	1,8	WNW	978,5
2024-04-14	15:00	27,8	84	1,8	SW	977,5
2024-04-14	16:00	28,1	83	1,3	SW	977,3
2024-04-14	17:00	27,3	86	0,4	WNW	977,5
2024-04-14	18:00	26,2	90	<0,3	WNW	977,8
2024-04-14	19:00	25,6	92	<0,3	WNW	977,9
2024-04-14	20:00	25,9	91	<0,3	WNW	978,5
2024-04-14	21:00	25,3	93	<0,3	WNW	978,9
2024-04-14	22:00	24,6	94	<0,3	IN	979,2
2024-04-14	23:00	24,4	94	<0,3	WNW	979,5
2024-04-15	0:00	24,1	95	<0,3	WNW	979,3
2024-04-15	1:00	23,9	95	<0,3	WNW	979,2
2024-04-15	2:00	23,7	95	0,4	IN	979,1
2024-04-15	3:00	23,6	95	<0,3	IN	979,1
2024-04-15	4:00	23,6	95	<0,3	IN	979,3
2024-04-15	5:00	23,3	95	<0,3	IN	980
2024-04-15	6:00	23,9	95	<0,3	WNW	980,6
2024-04-15	7:00	25,4	95	<0,3	NW	981,3
2024-04-15	8:00	28,3	86	<0,3	IN	981,8
2024-04-15	9:00	30,3	79	<0,3	SSW	982,2
AVERAGE		**26.7**	**88**	**0,8**	**SW**	**979,4**
MAXIMUM		**32,3**	**95**	**2,7**		**982,2**
MINIMUM		**23,6**	**69**	**<0,3**		**977,3**

Wind rose from CA-01 day 2

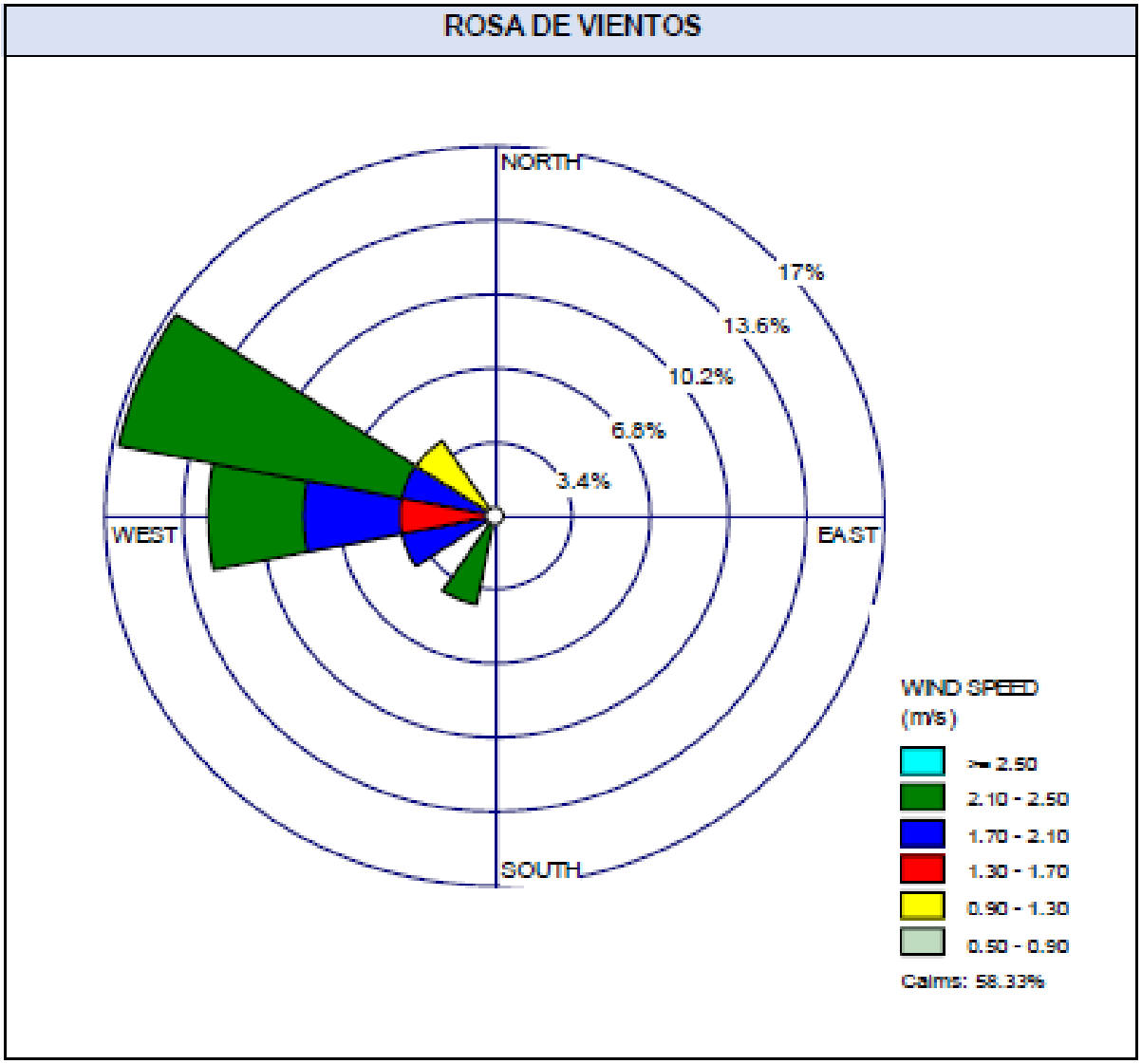


DIRECCIÓN PREDOMINANTE DEL VIENTO
12.33 % VIENE DEL SW

Table VI-4: Detailed Measurement Results – Meteorological Parameters day 3.

METEOROLOGY						
Station/Sample Code		CA-01		Sampling point description	LOCATED NEAR THE INDUSTRIAL OVEN	
WGS -84 coordinates		E: 437197	N: 8 787424			
Date	Hour	Temperature (°C)	Humidity (%)	Wind speed (m/s)	Wind Direction	Pressure (mbar)
2024-04-15	10:00	32,2	71	2,2	WNW	981,8
2024-04-15	11:00	32,2	72	1,8	IN	980,9
2024-04-15	12:00	32,8	72	2,2	WNW	979,8
2024-04-15	13:00	33,1	67	1,8	WNW	978,5
2024-04-15	14:00	33,4	66	2,2	WNW	977,6
2024-04-15	15:00	33,2	65	2,2	IN	976,9
2024-04-15	16:00	32,3	69	1,3	IN	977,0
2024-04-15	17:00	30,4	77	0,4	IN	977,4
2024-04-15	18:00	28,4	85	0,4	IN	978,1
2024-04-15	19:00	27,4	88	<0,3	WNW	978,8
2024-04-15	20:00	26,3	92	<0,3	NW	979,8
2024-04-15	21:00	25,9	92	<0,3	IN	980,6
2024-04-15	22:00	25,4	93	<0,3	WNW	980,8
2024-04-15	23:00	25,8	92	<0,3	NW	981,4
2024-04-16	0:00	25,2	93	<0,3	NW	981,4
2024-04-16	1:00	24,7	93	<0,3	WNW	981,0
2024-04-16	2:00	24,8	93	<0,3	NW	980,6
2024-04-16	3:00	24,7	93	<0,3	NW	981,0
2024-04-16	4:00	24,5	93	<0,3	NW	981,4
2024-04-16	5:00	23,7	94	<0,3	S	981,9
2024-04-16	6:00	24,8	94	<0,3	S	982,7
2024-04-16	7:00	27,2	87	0,9	NW	983,7
2024-04-16	8:00	29,4	80	1,8	WSW	984,3
2024-04-16	9:00	30,8	77	2,2	SSW	984,3
AVERAGE		**28,3**	**83**	**0,8**	**WNW**	**980,5**
MAXIMUM		**33,4**	**94**	**2,2**		**984,3**
MINIMUM		**23,7**	**65**	**<0,3**		**976,9**

Wind rose from CA-01 day 3

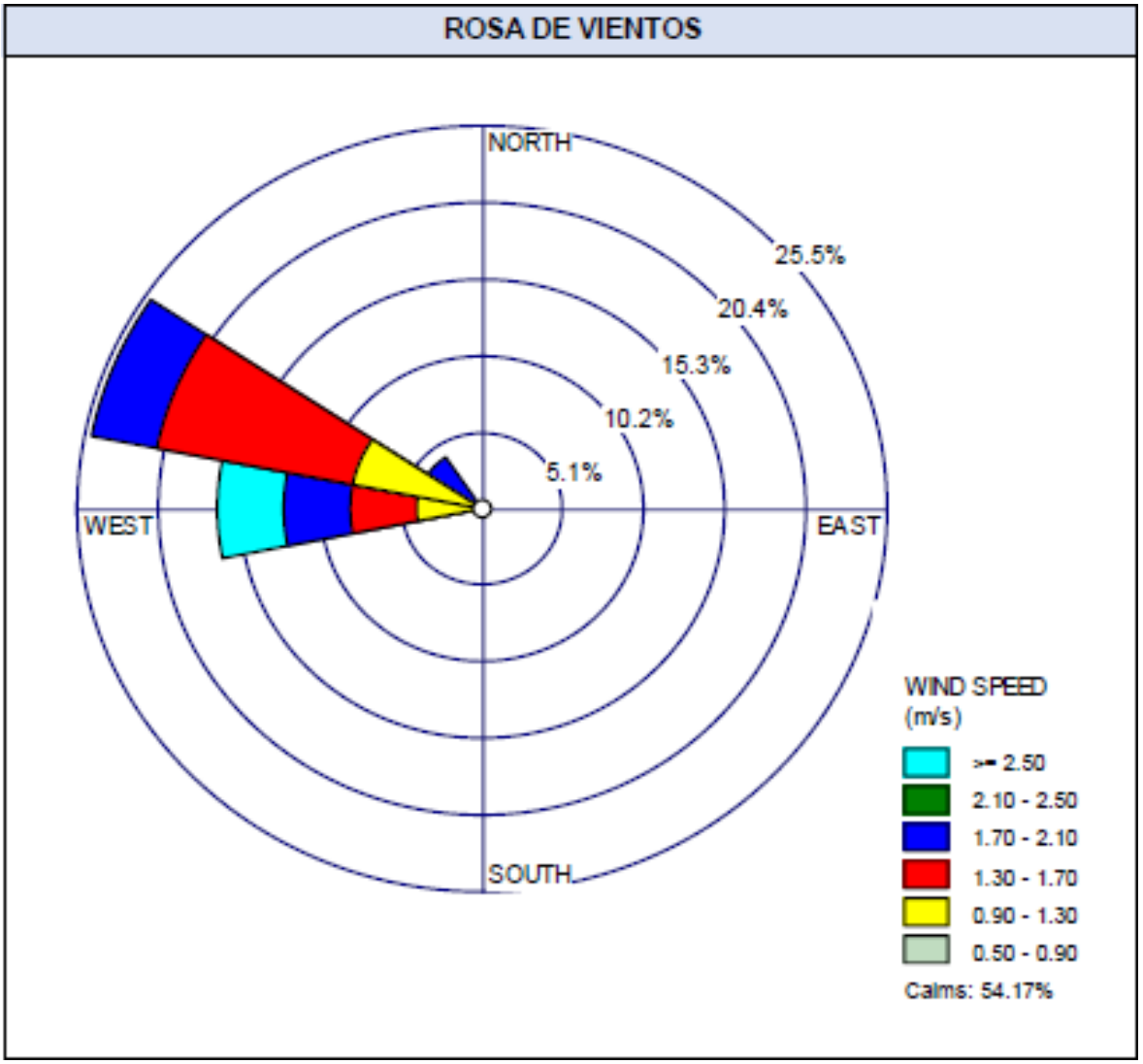


DIRECCIÓN PREDOMINANTE DEL VIENTO 16,12 % VIENE DEL WNW

Table VI-5: Detailed Measurement Results – Meteorological Parameters day 4.

METEOROLOGY						
Station/Sample Code		CA-01		Sampling point description	LOCATED NEAR THE INDUSTRIAL OVEN	
WGS -84 coordinates		E: 437197	N: 8 787424			
Date	Hour	Temperature (°C)	Humidity (%)	Wind speed (m/s)	Direction of the wind	Pressure (mbar)
2024-04-16	10:00	31,2	84	0,9	IN	983,9
2024-04-16	11:00	28,7	79	0,9	WNW	982,8
2024-04-16	12:00	28,4	76	1,3	WNW	982,0
2024-04-16	13:00	23,9	86	0,9	WNW	981,6
2024-04-16	14:00	28,1	85	1,3	IN	981,8
2024-04-16	15:00	27,8	93	2,7	IN	981,6
2024-04-16	16:00	28,1	92	1,8	IN	981,7
2024-04-16	17:00	27,3	93	<0,3	WSW	983,6
2024-04-16	18:00	26,2	93	<0,3	NW	984,9
2024-04-16	19:00	25,6	93	<0,3	WNW	985,7
2024-04-16	20:00	25,9	93	<0,3	WNW	985,3
2024-04-16	21:00	25,3	93	<0,3	WNW	985,9
2024-04-16	22:00	24,6	94	<0,3	SSW	986,1
2024-04-16	23:00	24,4	94	<0,3	WNW	986,0
2024-04-17	0:00	24,1	87	<0,3	WNW	985,3
2024-04-17	1:00	23,9	80	<0,3	IN	986,7
2024-04-17	2:00	23,7	77	<0,3	WNW	986,2
2024-04-17	3:00	23,6	73	<0,3	WNW	985,3
2024-04-17	4:00	25,7	69	<0,3	IN	984,9
2024-04-17	5:00	25,8	69	<0,3	WSW	984,3
2024-04-17	6:00	25,4	84	1,8	NW	985,0
2024-04-17	7:00	28,2	85	1,3	WNW	985,6
2024-04-17	8:00	30,2	87	1,3	WNW	985,7
2024-04-17	9:00	32,0	71	1,8	WNW	985,0
AVERAGE		**26,6**	**85**	**0,7**	**WNW**	**984,5**
MAXIMUM		**32,0**	**94,0**	**2,7**		**986,2**
MINIMUM		**23,6**	**69,0**	**<0,3**		**981,6**

Wind rose from CA-01 day 4

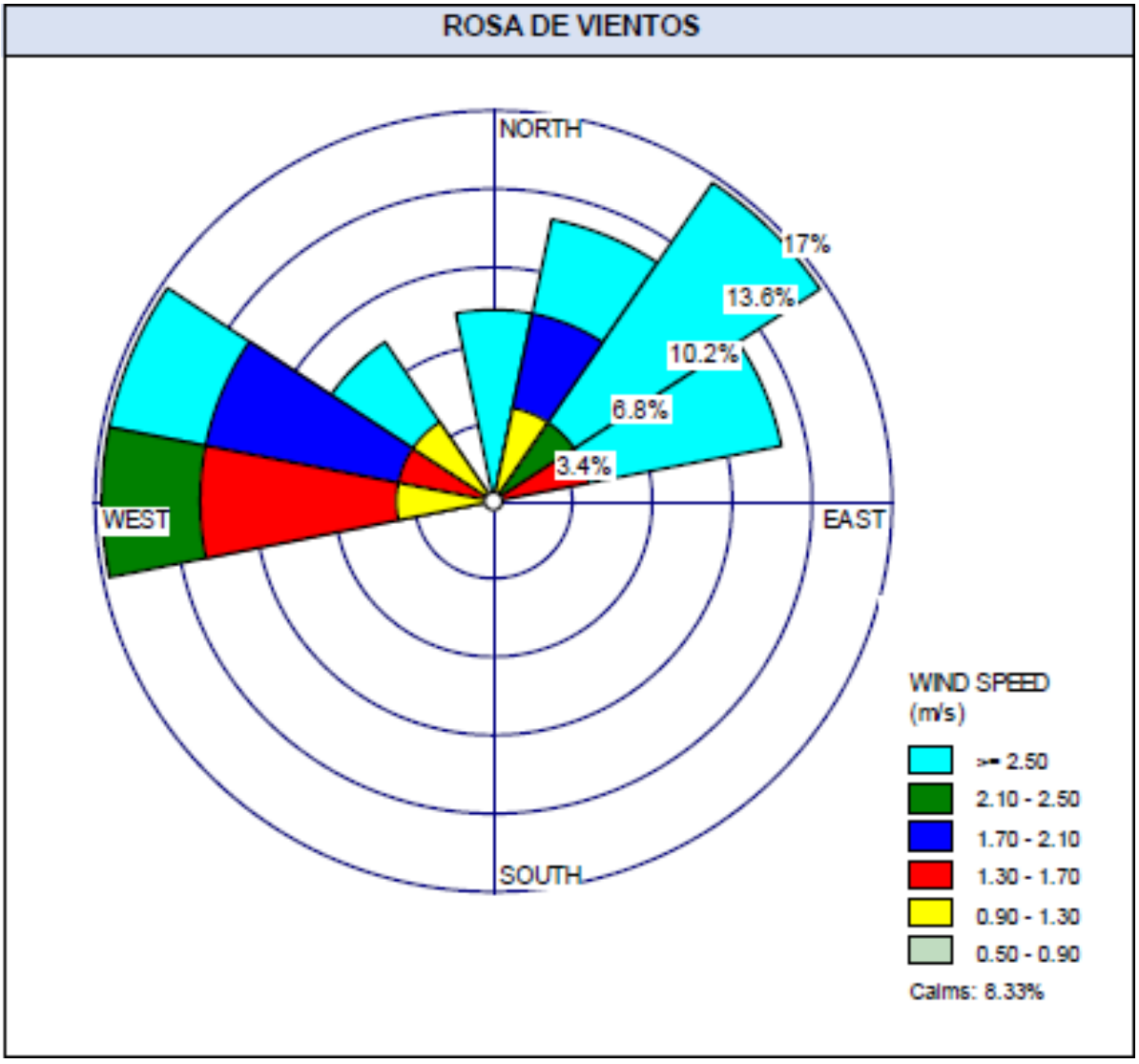


DIRECCIÓN PREDOMINANTE DEL VIENTO ES WNW EN 24,18%

Table VI-6: Detailed Measurement Results – Meteorological Parameters day 5.

METEOROLOGY						
Station/Sample Code		CA-01		Sampling point description	LOCATED NEAR THE INDUSTRIAL OVEN	
WGS -84 coordinates		E: 437197	N: 8 787424			
Date	Hour	Temperature (°C)	Humidity (%)	Wind speed (m/s)	Direction of the wind	Pressure (mbar)
2024-04-17	10:00	26,5	85	0,9	FOUR	982,1
2024-04-17	11:00	26,2	87	0,9	NW	981,6
2024-04-17	12:00	25,2	89	7,6	NW	980,9
2024-04-17	13:00	24,7	91	6,7	NNW	979,8
2024-04-17	14:00	24,7	90	6,7	N	979,8
2024-04-17	15:00	24,8	90	6,3	NO	979,9
2024-04-17	16:00	24,4	91	4,9	NO	980,5
2024-04-17	17:00	24,2	91	2,2	NO	981,4
2024-04-17	18:00	24,1	91	2,7	NO	982,2
2024-04-17	19:00	23,9	91	2,7	WNW	982,6
2024-04-17	20:00	23,8	91	1,8	WNW	982,9
2024-04-17	21:00	23,3	91	2,2	IN	982,5
2024-04-17	22:00	23,2	91	1,3	IN	982,2
2024-04-17	23:00	23,1	91	1,3	IN	981,9
2024-04-18	0:00	23,1	91	1,3	ONE	981,5
2024-04-18	1:00	22,9	91	1,8	WNW	981,5
2024-04-18	2:00	22,7	91	1,3	WNW	981,6
2024-04-18	3:00	22,7	91	0,9	IN	981,7
2024-04-18	4:00	22,7	91	<0,3	IN	982,3
2024-04-18	5:00	23,9	91	0,4	IN	980,9
2024-04-18	6:00	24,7	91	1,8	FOUR	982,9
2024-04-18	7:00	23,1	91	2,7	N	981,6
2024-04-18	8:00	23,9	91	2,7	ONE	980,5
2024-04-18	9:00	24,7	91	2,7	ONE	981,6
AVERAGE		**24,0**	**90**	**2,7**	**NE/W/WNW**	**981,5**
MAXIMUM		**26,5**	**91**	**7,6**		**982,9**
MINIMUM		**22,7**	**85**	**<0,3**		**979,8**

Wind rose from CA-01 day 5



DIRECCIÓN PREDOMINANTE DEL VIENTO
16.68 % NE/W/WNW

6.4. Comment

According to the data collected by the meteorological station, the climatic conditions are suitable for carrying out air quality monitoring.

VII. ATMOSPHERIC EMISSIONS MONITORING

7.1. Specific goal

- Determine the concentration of gases, product of emissions in stationary sources, of the company.

7.2. Description of sampling stations

Monitoring was carried out in a chimney; The following table details the location and description of the emissions monitoring points.

Table VII-1: Location of Emissions Monitoring Points.

Sampling type	Monitoring points	Location of Points
Atmospheric Emissions	EM-01	CAULDRON

Fountain: Own elaboration.

7.3. Analysis methodology

Table VII-2: Parameters and Analysis Methods – Atmospheric Emissions.

Parameters	Methodology	L.C.M.
Nitrogen dioxide	CTM-022/CTM-030; Determination of nitric oxide, nitrogen dioxide and NO emissions$_x$, from stationary combustion sources by electrochemical analyzer. / Determination of nitrogen oxides, carbon monoxide and oxygen emissions from natural gas engines, boilers and process heaters using portable analyzers.	0,19 mg/m^3
Carbon monoxide		1,14 mg/m^3
Nitric oxide		1,23 mg/m^3
Nitrous oxides		1,88 mg/
Oxygen		0,10 %
Sulfur dioxide	EPA CFR 40, Part 60, Appendix A-4 to. Method 6 C.; Determination of sulfur dioxide emissions from stationary sources.	11,91 mg/m^3
Carbon monoxide	CTM-034; Draft method for the determination of O2, CO and (NO and NO_2) for periodic monitoring	0,1 ppm
Nitrous oxides		0,1 ppm
particulate matter	EPA 46, Part 60, Appendix A. Method 5.1999; Determination of particles from stationary sources.	1,2 mg/m3

Fountain: Own elaboration.

7.4. Comparison standards

Table VII-3: Permissible Limits of Atmospheric Emissions.

Parameter	Unit	Permissible Limit	Reference norm
Particles	mg/m^{3}N	**50**	IFC/BM (*)
Sulfur dioxide	mg/m^{3}N	**2 000**	
Nitrogen oxides	mg/m^{3}N	**320 / 460**	
Carbon monoxide	mg/m^{3}N	**1 150**	Decree No. 638 / 1995 (Venezuela) (**)

(*) IFC/WB World Bank International Finance Corporation. General Environmental Guidelines (01-07-98) / (04-30-2007).
(**) Standards on Air Quality and Control of Atmospheric Pollution D. No. 638 (January 26, 1995).
Fountain: Own elaboration.

7.5. Results obtained

Sampling location: MADERERA RÍO ACRE S.A.C.

Fireplaces: Burner/cauldron.

Table VII-4: Results of emissions monitoring at the burner station.

Pameter	Unit	1era Race	2and Race	3era Race	Average	LMP
Carbon Monoxide (CO)	mg/m^3	55.1	78.2	72.5	**68.6**	**1 150**
Sulfur dioxide	mg/m^3	< 9	< 9	< 9	**< 9**	**2 000**
Nitrous Oxides	mg/m^3	83.7	74.2	105.9	**87.93**	**320**
Particles	mg/m^3	14.7	11.6	10.2	**12.17**	**50**

Use: The symbology (--) indicates that it does not correspond to a maximum limit that has been contemplated in the selected regulations.
Fountain: Own elaboration.

7.6. Comment

The monitoring of atmospheric emissions at the point (Caldero) was carried out while the plant was operating normally.

VIII. ENVIRONMENTAL NOISE LEVELS

8.1. Specific goal

- Determine the level of environmental noise existing in the area of influence during daytime in a timely manner and compare the results with the National Environmental Quality Standards for Noise established in Supreme Decree No. 085-2003-PCM.

8.2. Sampling and analysis methodology

The environmental noise measurements were carried out in accordance with the National Environmental Quality Standards for Noise such as D.S N° 085-2003-PCM, which in turn has as reference Standard 1996 -2:2008 description, measurement and evaluation of environmental noise. Part 2: Determination of environmental noise levels.

A. General Guidelines

The measurement of the environmental noise level was carried out during daylight hours. Based on these established criteria, the following descriptors were used: Equivalent Continuous Sound Pressure Level (LAeqT), which will be evaluated as a noise acceptance criterion.

The monitoring points stipulated in Annex XX of the Directorial Resolution of approval were located, where the sources that generated noise were located and in turn generated the greatest impact on the outside environment.

The coordinate measurement was carried out with a GPS for each representative area considering that they are located close to the emitting source and the receiver.

There are no reflective surfaces or changing weather conditions.

B. Technical aspects used in noise measurement:

The sound level meter that was used for the noise measurements is the Svantek 971, it is integrated class 1, the A weighting scale was taken and the response is “Slow”, at the time of performing the noise monitoring environmental, the following general guidelines were taken:

- The sound level meter was installed using a tripod as a support element in an appropriate location and orientation, keeping it separated from the operator's body at an acceptable distance, to avoid the phenomenon of wave concentration.
- The microphone of the sound level meter was placed at an angle of 75° with respect to the floor, 1.50 m above floor level.

In the measurement, the maximum sound pressure level (Lmax), minimum sound pressure level (Lmin), and equivalent continuous sound pressure level (LAeqT) were taken as data.

Table VIII-1: Methodology.

Rehearsal	Method	Units
Environmental Noise	NTP–ISO 1996-1 / NTP-ISO 1996-2, ACOUSTICS, Description, measurement and evaluation of environmental noise. Part 1: Basic quantities and evaluation procedures / Part 2: Determination of ambient noise levels.	dB

Fountain: Own elaboration.

8.3. Description of sampling stations

The company is located in the industrial zone, where low vehicle traffic is observed. Environmental Noise monitoring was carried out outside the plant, at six (06) monitoring points, as established in its environmental management instrument. The following table details the location and description of the environmental noise control points.

Table VIII-2: Location of Environmental Noise Monitoring Points.

Point	Measuring point description	UTM coordinates (WGS-84)	
		IT IS	NORTH
DA-01	Located behind the warehouse	437 245	8 787 445
DA-02	Located in a log yard	437 067	8 787 542
DA-03	Located close to tap and workers' housing	437 023	8 787 740
DA-04	Located at door No. 2	436 727	8 787 793
DA-05	Located on the road	437 221	8 787 769
DA-06	Located next to dining room and home	437 282	8 787 697

Fountain: Own elaboration.

8.4. Comparison standards

Below are the standards used to evaluate results, indicating the reference standard.

Table VIII-3: National Environmental Quality Standards for Noise.

Zone	Daytime Schedule (1)	Night Time (2)	Unit
Special Protection Zone	50	40	dB (A)
Residential area	60	50	
Shopping area	70	60	
Industrial zone	**80**	**70**	
(1): ***from 07:01 to 22:00.***			
(2): ***from 22:01 to 07:00.***			

Use: In accordance with the Regulation of National Environmental Quality Standards for Noise (D.S. No. 085-2003-PCM).
Fountain: Own elaboration.

8.5. Monitoring results

Sampling location: Outside the company. Sampling

date: Daytime 2024-04-15.

Table VIII-4: Measurement Results – Ambient-Daytime Noise Levels.

Point	Measuring point description	Noise Level (dBA)		
		Min.	Max.	Equivalent L_{AeqT}
DA-01	Located behind the warehouse	56.72	67.7	61.88
DA-02	Located in a log yard	39.35	63.71	47.17
DA-03	Located close to tap and workers' housing	37.88	79.14	56.55
DA-04	Located at door No. 2	34.9	55.71	41.80
DA-05	Located on the road	45.16	58.82	49.87
DA-06	Located next to dining room and home	45.16	63.61	49.87
ECA for noise (Industrial zone) (1)				**80,0**

(1) Environmental quality standard for Noise (D.S. No. 085-2003-PCM) – Industrial Zone.
Fountain: Own elaboration.

8.6. Comment

During the monitoring of Environmental Noise Quality in the external part of the plant, low traffic of cargo transport vehicles, public transport and light vehicles was observed, there is no significant source of noise that alters the environmental quality of the area.

IX. Fauna and Flora

9.1. Specific goal

- Determine the amount of Flora and Fauna present in the Maderacre area.

9.2. Flora

This monitoring is carried out in the facilities of the Maderacre company, said area does not use the natural resources present, maintaining the ecosystem present in the area.

9.2.1. Sampling and Analysis Methodology

A. Materials and Method

To carry out biotic monitoring, it is essential that the installation of plots be well georeferenced and their perimeter adequately delimited, thus avoiding future inconveniences that may alter the monitoring data.

Location: The use of GPS is essential for the location of the points to be sampled.

Installation: Because the monitoring is in temporary plots, the marking of their perimeter is done with the help of a flexometer, one meter on one side and one meter on the other side is considered.

Measurement: Diameter tape or flexometer to measure and record the DAP (Diameter at Breast Height) at 1m of each individual in the plot.

Field sheets: Field sheets or notebook, preferably waterproof, to collect field information on the individuals in each plot, as well as characteristics relevant to each species, with the use of a pencil.

Collect: To identify the species, it is necessary to take photographs using a professional camera that allows the clarity of the photo and can be identified according to the morphology of the leaves.

B. Factors that influence the proposed methodologies

Accessibility: Due to the presence of swamps at several monitoring points, close verification with the help of a zoom lens for visualization was complicated.

Adverse weather conditions: Constant rainfall delays work whether in the installation of plots, data collection or species identification.

Species identification: The fact of not being able to collect certain individuals because they are in a swampy area at this time makes their identification difficult to a great extent. Another variant that makes identification difficult is that certain species are difficult to identify vegetatively.

C. Field Phase

The present study was carried out from April 13 to 18, 2024 to monitor eight temporary plots of 50x2m corresponding to quantitative sampling.

D. Quantitative Inventories

To carry out quantitative inventories in this case eight temporary plots of 50x2 m, the installation of the plots is carried out with the help of a flexometer, appropriately delimiting their perimeter, stakes are placed in each corner of the plot.

To identify the species in each individual, a direct observation of dendrological aspects is carried out such as type of bark (Detachable, smooth, etc.), color of the bark, type of root (Plant, adventitia, etc.), shape of the stem. (Regular, irregular), exudates in the stem (Latex, resins, etc.), smell and at the same time collections are made with the help of a climber and aerial pruner to directly observe type of leaves, presence or absence of resins, latex, stipules, glands, nectaries and tomentum in them in order to proceed to identify them, they are also photographed “in situ” to identify them with the help of virtual herbaria.

E. Monitoring Points

Table IX-1: Flora Monitoring Points

Point	Measuring point description	UTM coordinates (WGS-84)	
		IT IS	NORTH
T-1	Very close to residents and the interoceanic highway	437 277	8 787 525
T-2		437 283	8 787 544
T-3		437 292	8 787 562
T-4		437 304	8 787 581
T-5		437 323	8 787 609
T-6		437 347	8 787 664
T-7		436 926	8 787 718
T-8		436 888	8 787 782

F. Cabinet Phase

The Cabinet Phase is executed once measurement records, height estimation and identification of each individual in the plot have been entered for subsequent statistical analysis, obtaining results regarding richness, abundance, basal area, relative density, relative dominance, Value Index of Importance, Diversity Index of each sampled area.

Species identification is generated “in situ” through direct observation of the morphology of each species such as type of leaf, root, stem, flower and/or fruit; presence or absence of resins, latex, stipules, glands, nectaries and tomentum in the different structures of the plant, it being important to determine odors, flavors and textures in them. Photographs taken in the field were important to compare with species from virtual herbariums.

The verification of the previous report was important in order to verify the stocks of species and compare them with those currently located.

G. Analysis of data

The ecological information obtained by plots within subplots was organized in a database in the Microsoft Excel program. This information presents the coverage of species by sampling point and by plant formation, then the result was divided by the number of plots that each sampling point or coverage implied for each species within a sampling point or plant formation. From these average coverage data per species within a sampling point or plant formation, diversity will be found, which should not be based solely on density (Whittaker 19722); density is a data may not be precise due to the fact that in a plant community not all species have the

same degree of coverage. The diversity indices used for the analysis are the Shannon-Weaver (H') and Simpson (1-D) diversity index; these indices were obtained using the PAST 2.0 statistical program.

- **The Shannon-Wiener index (H')**
  It assumes that the individuals in the populations come from random collections and that the populations are effectively infinite. It also assumes that all species are represented in the sample.

$$H' = -S pilog2pi$$

  Where:
  Pi = Number of species / total number of individuals in the sample.

- **Simpson's dominance (1-D)**
  It is expressed as the uniformity of the importance values of all the species in a sample, measuring the degree of uncertainty in predicting which species an individual chosen at random from a collection will belong to, assuming that all species are represented in the sample. The statistic that defines it is:

$$D = \frac{\sum_{i=1}^{s} n_i (n_i - 1)}{N(N-1)}$$

  Where:
  S = is the number of species
  N = is the total number of organisms present (or square units) n
  = is the number of specimens per species

- **Pielou Equity Index:**
  This index measures the proportion of the observed diversity in relation to the maximum expected diversity. Its value ranges from 0 to 1, so that 1 corresponds to situations where all species are equally abundant (Magurran, 19886).

H. Wealth and Abundance

The term richness refers to the net number of species present within a community; that is, it is estimated using the number of species divided by the number of records found. This data allows a direct comparison to be made between the vegetation plots in terms of the diversity (richness) of tree species,

even when the number of trees or individuals varies between samplings. The data always takes a value between 0 and 1: if all the trees in the samples were of different species, they would have a value of 1; a value of 0.5 or higher means high species richness).

Abundance is defined as the number of individuals found for each species recorded within a sampling unit. Both parameters (richness and abundance) determine two axes of species diversity, related to their equity within the analyzed sample.

I. Species Categorization

The list of plant species found in the project area was compared with the lists of species categorized as sensitive or threatened by the Peruvian State, the International Union for Conservation of Nature (IUCN) and the International Convention for Trafficking in Wild Species. (CITES); It will also be compared with the lists of endemic species of Peru (León et.al, 2006). Sensitive plant species are species of wild plants which, due to being at risk of disappearing from their natural habitat, due to their unique nature in the world or due to their excessive use and commercial value, are subject to protection by the Peruvian state or by international conventions. . In Peru, this protection is made effective in accordance with the provisions of the Forestry and Wildlife Law, Law No. 27308 updated on August 3, 2010, which has as one of its objectives to standardize, regulate and supervise sustainable use. of forest resources. Article 22 of this Law stipulates that the state must adopt special measures that guarantee the protection of flora species that, according to their characteristics or vulnerability, require such treatment.

Article 23 stipulates that this Law defines the official categorization of protected species as well as their possession, extraction and commercialization regime. The inventory of protected flora species, as well as their categorization, is approved and published within Supreme Decree No. 042 – 2006 AG.

The threat categories are the following: Critical Danger (CR), when the habitat of a species is less than 100 km^2, has less than 250 adult individuals or half of its population will disappear in 10 years; Danger (EN), when the habitat of a species is less than 5000 km^2 , has less than 2,500 adult individuals or a fifth of its population will disappear in 20 years; and Vulnerable (VU), when the habitat of a species is less than 20,000 km^2 , has less than 10,000 adult individuals or a tenth of its population will disappear in 100 years.

The International Union Conservation of Nature (IUCN) is an organization founded in 1948 and brings together 83 states and dozens of non-governmental organizations. Its purpose is to promote nature conservation and the sustainable use of resources. Within it, the species survival commission prepared a list in

1994, to classify species at high risk of global extinction which provides an objective and explicit structure for the classification into categories of the widest range of species according to their risk of extinction, within the threat categories we have: Critical Danger (CR), Endangered (EN) and Vulnerable (VU).

The International Convention on Wildlife Trafficking (CITES) is an international agreement made between governments whose purpose is to ensure that international trade in wild species is not a threat to their existence. Regulation for the trade in wild species is necessary especially for those that are in danger of extinction.

The Convention has a list of species divided into three appendices, which offer different levels and types of protection against excessive exploitation. These are: Appendix I, contains endangered species whose trade is prohibited and, if so, must be approved by both countries; Appendix II, species that are not seriously threatened and whose trade must be controlled; Appendix III contains the species in which the government of the country of origin already regulates its trade and requests support from other countries for its control.

Regarding endemism, this is a necessary and important instrument to determine and examine the objectives and priorities of a strategy for the conservation of biological diversity. The red book of Endemic Plants of Peru (León et al, 2006) brings together a list of the plant species considered as unique and exclusive that inhabit Peruvian territory. Despite not being explicitly considered in the environmental regulations for the categorization of threatened species, due to its strong scientific basis, its consideration is an essential requirement in the impact studies that are issued to government entities that have jurisdiction in environmental sampling. .

Table IX – 2: Conservation Categories of Protected Flora Species

List	Category	Description
D.S. N° 043-2006-AG	Critically Endangered Species(CP)	When the best available evidence about a taxon indicates reduction in population numbers, a limited distribution (less than 100 km^2), a small population size (estimated at less than 250 mature individuals), and quantitative analysis shows that the probability of extinction in the wild is at least 50% within 10 years or three generations.
	Endangered Species (EN)	When the best available evidence about a taxon indicates reduction in population numbers, a limited geographic distribution (less than 5,000 km^2), a small population size (estimated at less than 2,500 mature individuals), and quantitative analysis shows that the probability of extinction in the wild is at least 20% within 20 years or five generations.
	Vulnerable Species (VU)	When the best available evidence about a taxon indicates a reduction in population numbers, a limited geographic distribution (less than 200,000 km^2), a small population size (estimated to be less than 100,000 individuals), and quantitative analysis shows that the probability of extinction in the wild is at least 10% within 100 years.
	Near Threatened Species (NT)	When the best available evidence shows that although a taxon does not meet the criteria: Critically Endangered (CR), Endangered (EN) and/or Vulnerable (VU), it is close to meeting said criteria, or possibly meeting them, in A near future.
IUCN	Critically Endangere d (CR)	A taxon is in CR when the best available evidence indicates that it meets any of the criteria for the CR category and is therefore considered to be at extremely high risk of extinction.
	In danger (EN)	A taxon is EN when the best available evidence indicates that it meets any of the criteria for EN status and is therefore considered at high risk of extinction in the wild.
	Vulnerable (VU)	A taxon is in VU status when the best available evidence indicates that it meets one of the criteria for the Vulnerable category and, therefore, is considered at high risk of extinction in the Wild.
	Almost threatened s(NT)	A taxon is in Near Threatened (NT) status when it has been evaluated according to the category criteria and does not meet the criteria for CR, EN, or VU; but is close to meeting the criteria, or possibly will meet them, in the near future.
CITES	Appendix I	List of animal and plant species most in danger of extinction.
		They are threatened with extinction.
	Appendix II	List of species that are not necessarily threatened with extinction, but could become so unless their trade is strictly controlled. This Appendix also includes so-called “similar species”, that is, species whose specimens in trade are similar to those of the species included for conservation reasons.
	Appendix III	List of species included at the request of a Party that already regulates trade in said species and needs the cooperation of other countries to avoid unsustainable or illegal exploitation of them.

Source: D.S. N° 043-2006-AG, IUCN 2018-II and CITES 2017

9.2.2. Results

The Peruvian Amazon (Andean part, high jungle, low jungle), comprises a large mass of forests, with cores or biomass of humid, mesophytic and xerophytic forests, and a great variety of types related to the locality (altitude and latitude), where A complex diversity of plants develops, classifiable into families, genera, species, subspecies, varieties and clones; and differentiated by their size and height structure, diameter variability of their trunks and strata, and degrees of association in frequency and density.

As a result of the quantitative and qualitative evaluations of the Flora and vegetation components, carried out in eight (08) sampling stations and distributed in a vegetal cover during the biological monitoring for the monitoring area, a total of 77 species of plants were recorded included. in 30 families.

Table IX – 3: Number of Species recorded in the study area

N°	Family	Species	Door	Common name
1	Acanthaceae	*Justicia manserichensis*	shrub	---
2	Annonaceae	*Duguetia spixiana*	arboreal	"carahuasca negra"
3	Annonaceae	*Guatteria megalophylla*	arboreal	"carahuasca negra"
4	Apocynaceae	*Couma macrocarpa*	arboreal	"huayo milk"
5	Apocynaceae	*Himatanthus sucuuba*	shrub	"bellaco caspi"
6	Arecaceae	*Iriartea deltoid*	palm	"huacrapona"
7	Arecaceae	*Wettinia sp.*	palm	"on a pony"
8	Burseraceae	*Dacryodes peruviana*	arboreal	"copal"
9	Burseraceae	*Protium of Guianense*	arboreal	"copal"
10	Burseraceae	*Protium locked up*	arboreal	"copal"
11	Calophyllaceae	*Calophyllum brasiliense*	shrub	"lagarto caspi"
12	Chrysobalanaceae	*Chrysobalanaceae sp.*	arboreal	---
13	Combretaceae	*Terminalia amazonia*	arboreal	"yuckshapana"
14	Elaeocarpaceae	*Sloanea guianensis*	shrub	---
15	Euphorbiaceae	*Hevea guiana*	arboreal	"syringe"
16	Euphorbiaceae	*Hieronyma alchorneoides*	arboreal	---
17	Euphorbiaceae	*Mabea nitida*	shrub	"shiringuilla"
18	Euphorbiaceae	*Nealchornea yapurensis*	shrub	---
19	Fabaceae	*Creators sp.*	arboreal	"good caspi"
20	Fabaceae	*Brownea grandiceps*	arboreal	"cruz caspi"
21	Fabaceae	*Cedrelinga cateniformis*	arboreal	"screw"
22	Fabaceae	*No sp.*	arboreal	"birds"
N°	Family	Species	Door	Common name

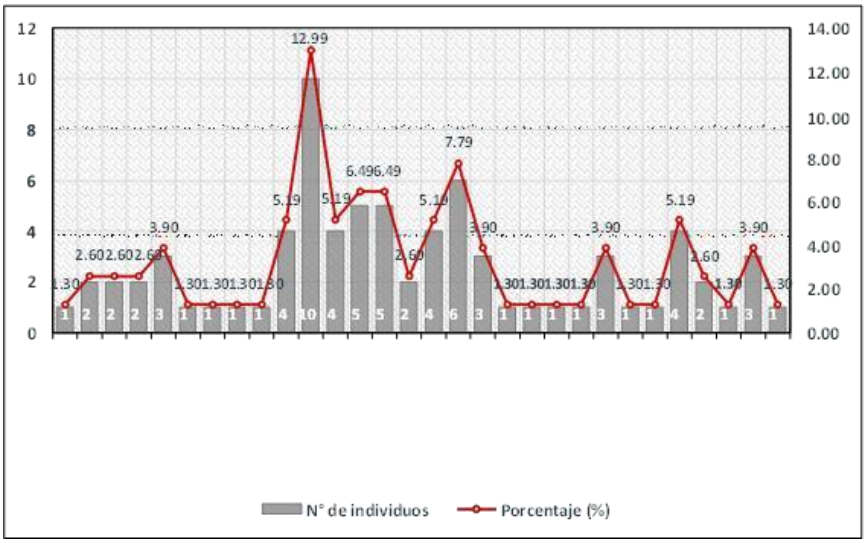
23	Fabaceae	*Ormosia coccinea*	arboreal	"huayruro"
24	Fabaceae	*Parkia velutina*	arboreal	"pashaco"
25	Fabaceae	*Pterocarpus rohrii*	arboreal	"birds"
26	Fabaceae	*Tachigali paniculata*	arboreal	"boyfriend"
27	Fabaceae	*American triplaris*	arboreal	"boyfriend"
28	Fabaceae	*Zygia coccinea*	arboreal	"birds"
29	Lauraceae	*Aniba panurensis*	shrub	"bed"
30	Lauraceae	*Findieria directonervia*	shrub	"bed"
31	Lauraceae	*Findieria paniculata*	shrub	"bed"
32	Lauraceae	*Nectandra sp.*	shrub	"yellow moena"
33	Lecythidaceae	*Eschweilera coriacea*	arboreal	"machimango blanco"
34	Lecythidaceae	*Eschweilera parviflora*	arboreal	"machimango blanco"
35	Lecythidaceae	*Grias neuberthii*	arboreal	"sachamango"
36	Lecythidaceae	*Acute hysteria*	arboreal	---
37	Lecythidaceae	*Bertholletia excelsa*	arboreal	"chestnut"
38	Malvaceae	*Apeiba was rough*	arboreal	"monkey comb"
39	Malvaceae	*Apeiba tibourbou*	arboreal	"monkey comb"
40	Malvaceae	*Matisia malacocalyx*	arboreal	"sapotillo"
41	Malvaceae	*Theobroma subincanum*	arboreal	"sacha cocoa"
42	Malvaceae	*Pyramidal ochroma*	arboreal	"find"
43	Melastomataceae	*Bellucia pentamera*	shrub	---
44	Melastomataceae	*Bubalina miconia*	shrub	---
45	Meliaceae	*Guarea macrophylla*	arboreal	"rest"
46	Meliaceae	*Cedrela odorata*	arboreal	"bitter cedar"
47	Meliaceae	*Sweetenia macrophylla*	arboreal	"mahogany"
48	Meliaceae	*Trichilia pallida*	shrub	"white requia"
49	Moraceae	*Brosimum guianense*	shrub	"chimicua"
50	Moraceae	*Naucleopsis incinna*	arboreal	"chimicua"
51	Moraceae	*Naucleopsis glabra*	arboreal	"chimicua"
52	Moraceae	*Perebea guiana*	arboreal	"motelo chaqui"
53	Moraceae	*Pseudolmedia laevis*	arboreal	"chimicua"
54	Moraceae	*Toulicia reticulata*	arboreal	---
55	Myristicaceae	*Iryanthera juruensis*	shrub	"cumala colorada"
56	Myristicaceae	*Iryanthera macrophylla*	shrub	"cumala colorada"
57	Myristicaceae	*Iryanthera polyneura*	shrub	"cumala colorada"
58	Myrtaceae	*Eugenia sp*	shrub	"guayabilla"
59	Olacaceae	*Minquartia guianensis*	arboreal	"huacapu"
N°	**Family**	**Species**	**Door**	**Common name**
60	Piperaceae	*August pepper*	shrub	---
61	Polygonaceae	*Coccoloba climbing*	palm	---

62	Rubiaceae	*Calycophyllum spruceanum*	arboreal	---
63	Rubiaceae	*Isertia sp*	shrub	---
64	Rubiaceae	*Stop sp.*	shrub	---
65	Sabiaceae	*Ophiocaryon heterophyllum*	shrub	---
66	Sapindaceae	*choosing Matayba*	shrub	---
67	Sapotaceae	*Bloody Chrysophyllum*	arboreal	---
68	Sapotaceae	*Gautteria cf. ramiflora*	shrub	---
69	Sapotaceae	*Pouteria bangi*	arboreal	"caimitillo"
70	Sapotaceae	*Pouteria guianensis*	arboreal	"caimitillo"
71	Solanaceae	*Brunfelsia grandiflora*	shrub	"chuchuhuasha"
72	Solanaceae	*Solanum tree*	arboreal	---
73	Ulmaceae	*Trema micrantha*	shrub	---
74	Urticaceae	*Cecropia sciadophylla*	arboreal	"cetic"
75	Urticaceae	*Pourouma tomentosa*	arboreal	"howl"
76	Urticaceae	*Pourouma cecropiifolia*	arboreal	"howl"
77	Verbenaceae	*Vitex cymosa*	shrub	---

Fountain: Own elaboration

A total of 30 families were recorded, within which the Fabaceae family was represented by 10 species, followed by the Moraceae family with 06 species. Other representative families were Lecythidaceae and Malvaceae with 05 species each; Meliaceae, Euphorbiaceae, Lauraceae and Sapotaceae with 04 species each. The rest of the families (22) were represented by 03 or fewer species each.

Graph N° 1. Number of Species per Family of Flora and Vegetation recorded in the study area



The total abundance was 484 individuals. According to the abundance of recorded species, the monitoring station T6 was the most predominant with a total of 77 individuals followed by the monitoring station T1 with a total of 67 individuals as shown in the following Table.

Table IX – 4: *Number of Species counted at monitoring points*

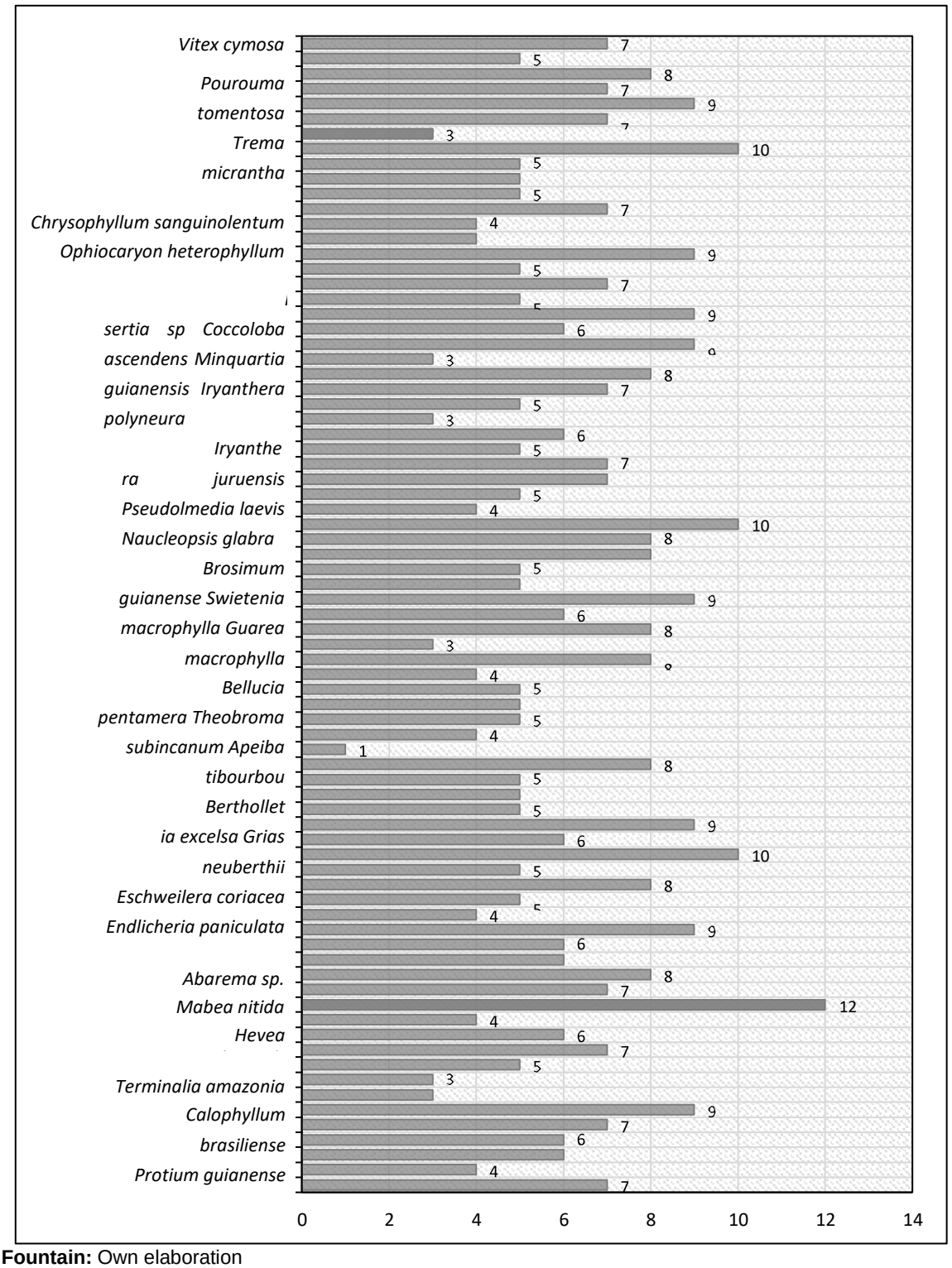
N°	Family	Species	Secondary vegetation							
			T1	T2	T3	T4	T5	T6	T7	Q8
1	Acanthaceae	Justicia manserichensis	2	1	0	0	0	2	2	0
2	Annonaceae	Duguetia spixiana	0	2	1	1	1	0	1	0
3	Annonaceae	Guatteria megalophylla	3	1	1	0	1	1	1	0
4	Apocynaceae	Couma macrocarpa	1	1	1	1	1	1	0	0
5	Apocynaceae	Himatanthus sucuuba	0	1	1	2	1	1	1	0
6	Arecaceae	Iriartea deltoid	2	1	1	1	2	1	1	1
7	Arecaceae	Wettinia sp.	1	1	1	0	1	1	0	0
8	Burseraceae	Dacryodes peruviana	1	0	0	0	1	0	0	1
9	Burseraceae	Protium of Guianense	0	1	2	0	0	1	0	1
10	Burseraceae	Protium locked up	1	2	2	1	1	0	1	0
11	Calophyllaceae	Calophyllum brasiliense	0	1	1	0	1	1	0	1
12	Chrysobalanaceae	Chrysobalanaceae sp.	0	1	1	0	0	1	0	1
13	Combretaceae	Terminalia amazonia	2	2	2	1	1	1	1	2
14	Elaeocarpaceae	Sloanea guianensis	0	2	1	1	1	1	1	0
15	Euphorbiaceae	Hevea guiana	2	1	1	0	2	2	0	1
16	Euphorbiaceae	Hieronyma alchorneoides	1	2	1	0	1	1	1	0
17	Euphorbiaceae	Mabea nitida	0	1	0	1	0	3	0	1
18	Euphorbiaceae	Nealchornea yapurensis	2	2	0	2	0	2	0	1
19	Fabaceae	Creators sp.	0	0	1	1	0	1	1	
20	Fabaceae	Brownea grandiceps	1	1	0	0	1	0	1	1
21	Fabaceae	Cedrelinga cateniformis	2	0	2	0	2	0	1	1
22	Fabaceae	No sp.	0	3	0	1	0	1	0	0
23	Fabaceae	Ormosia coccinea	2	0	3	0	2	0	2	1
24	Fabaceae	Parkia velutina	0	3	0	1	0	2	0	0
25	Fabaceae	Pterocarpus rohrii	2	0	2	0	2	2	1	0
26	Fabaceae	Tachigali paniculata	1	1	0	1		1	0	1
27	Fabaceae	American triplaris	0	0	1	1	2	1	0	0
28	Fabaceae	Zygia coccinea	1	0	1	0	0	1	0	2
29	Lauraceae	Aniba panurensis	0	2	0	3	0	1	1	1
30	Lauraceae	Findieria directonervia	1	0	0	0	0	0	0	0
31	Lauraceae	Findieria paniculata	1	0	1	0	1	0	1	0
32	Lauraceae	Nectandra sp.	0	2	0	2	0	0	0	1
33	Lecythidaceae	Eschweilera coriacea	1	0	1	0	1	1	1	0
34	Lecythidaceae	Eschweilera parviflora	0	0	0	4	0	0	1	0
35	Lecythidaceae	Grias neuberthii	1	0	0	1	0	1	0	1
36	Lecythidaceae	Acute hysteria	2	0	2	0	2	0	1	1
37	Lecythidaceae	Bertholletia excelsa	0	1	0	1	0	1	0	0
38	Malvaceae	Apeiba was rough	2	0	1	0	2	0	2	1
39	Malvaceae	Apeiba tibourbou	0	3	0	1	0	2	0	0
40	Malvaceae	Matisia malacocalyx	2	0	2	0	2	2	1	0
41	Malvaceae	Theobroma subincanum	1	1	0	1	0	1	0	1
42	Malvaceae	Pyramidal ochroma	0	0	1	1	2	1	0	0
43	Melastomataceae	Bellucia pentamera	1	0	1	0	0	4	0	2
44	Melastomataceae	Bubalina miconia	0	2	0	3	0	1	1	1
45	Meliaceae	Guarea macrophylla	0	0	2	0	3	4	1	0
N°	Family	Species	Secondary Vegetation							
			T1	T2	T3	T4	T5	T6	T7	T6
46	Meliaceae	Cedrela odorata	0	1	0	2	0	1	0	0
47	Meliaceae	Sweetenia macrophylla	2	0	1	1	0	0	0	1
48	Meliaceae	Trichilia pallida	3	1	0	0	2	0	1	0
49	Moraceae	Brosimum guianense	0	0	2	1	0	1	0	3
50	Moraceae	Naucleopsis incinna	2	0	1	0	1	0	1	0
51	Moraceae	Naucleopsis glabra	0	1	0	1	1	3	0	0

52	Moraceae	Perebea guiana	1	0	0	0	1	0	0	1
53	Moraceae	Pseudolmedia laevis	0	1	2	0	0	1	0	1
54	Moraceae	Toulicia reticulata	1	2	1	1	1	0	1	0
55	Myristicaceae	Iryanthera juruensis	2	1	1	0	2	0	1	1
56	Myristicaceae	Iryanthera macrophylla	0	1	0	1	0	1	0	0
57	Myristicaceae	Iryanthera polyneura	3	0	1	0	2	0	2	1
58	Myrtaceae	Eugenia sp	0	2	1	1	0	2	0	0
59	Olacaceae	Minquartia guianensis	2	1	1	0	2	2	1	0
60	Piperaceae	August pepper	1	1	0	1	0	1	0	1
61	Polygonaceae	Coccoloba climbing	0	0	1	1	2	1	2	0
62	Rubiaceae	Calycophyllum spruceanum	1	0	1	0	0	1	0	2
63	Rubiaceae	Isertia sp	0	2	2	1	0	2	1	1
64	Rubiaceae	Stop sp.	0	0	1	0	0	2	1	0
65	Sabiaceae	Ophiocaryon heterophyllum	0	1	0	1	1	1	0	0
66	Sapindaceae	choosing Matayba	2	0	1	1	2	0	0	1
67	Sapotaceae	Bloody Chrysophyllum	1	1	0	1	1	0	1	0
68	Sapotaceae	Gautteria cf. ramiflora	0	1	1	1	0	1	0	1
69	Sapotaceae	Pouteria bangi	1	0	1	0	0	1	0	2
70	Sapotaceae	Pouteria guianensis	0	1	1	2	2	2	1	1
71	Solanaceae	Brunfelsia grandiflora	0	0	1	0	0	1	1	0
72	Solanaceae	Solanum tree	0	1	0	1	1	2	2	0
73	Ulmaceae	Trema micrantha	2	2	1	1	0	0	2	1
74	Urticaceae	Cecropia sciadophylla	1	1	2	0	2	0	1	0
75	Urticaceae	Pourouma tomentosa	0	0	1	2	0	1	0	4
76	Urticaceae	Pourouma cecropiifolia	1	1	0	0	1	1	1	0
77	Verbenaceae	Vitex cymosa	2	0	1	1	0	1	1	1
Total			**67**	**65**	**64**	**55**	**61**	**77**	**47**	**48**

Fountain: Own elaboration

Among the most abundant species (number of individuals), the *Terminalia amazonia* with 12 individuals as the most abundant, followed by *Pouteria guianensis, Guarea macrophylla and Ormosia coccinea* with 10 individuals each, as the most abundant species.

Graph N° 2. Abundant species by type of vegetation cover



Fountain: Own elaboration

Comparing the vegetation covers of the study area, the richness was greater in the secondary vegetation with a total of 484 individuals. Regarding the diversity indices recorded, these fluctuated between 4,291 bits/individual for Shannon and between 0.9975 probits/individuals for Simpson. High diversity values, result of the distribution of recorded abundances, which show a high predominance of species within the evaluated ecosystem.

Table IX-5: Richness, abundance and diversity of plant species

Diversity Indices	Secondary vegetation
Specific wealth	77
Abundance	484
Simpson 1-D	0.9975
Shannon_H	4.291
Equitatibility_J	0.9865

Fountain: Own elaboration

9.2.3. Floristic analysis by plant cover

The results are described below by vegetation cover.

Vegetable Cover	Description
	In this type of vegetation cover, a total of 77 species in 484 individuals were identified. Among the families best represented in number of species, Fabaceae stands out with ten (10) species. Among the abundant species, the presence of *Terminalia amazonia* and with 12 individuals. The diversity value for this type of vegetation cover is, according to the Shannon index, 4.285 bit/ind and a dominance of 0.9855 according to the 1-D index.
	

Fountain: Own elaboration

9.2.4. Growth form

Among the recorded species, six types of canopy species were identified: trees, herbs, shrubs, palms, lianas and epiphytes.

The Arborea form was the one that recorded the highest number of species, representing 62.34% of the total species recorded. Likewise, the shrubby habit represented 33.77% of the total species recorded, while the palm trees were represented by 5.13% of the total species.

Table IX-6: Number of Species registered by growth form

Growth	Trees	Shrubs	Palms
No. of Individuals	48	26	04
Percentage	62.34%	33.77%	5.13%

Fountain: Own elaboration

9.2.5. Species in conservation category

In accordance with Supreme Decree No. 043-2006-AG, no threatened species were identified in any conservation category. However, 03 species were identified in the Vulnerable Category (Vu), which are also found within Appendix II of the IUCN 2021-II and one endemic species. *Justicia manserichensis*.

Table IX-7: Flora and Vegetation Species in any conservation category

Family	Species	State of conservation			ENDEMISM
		D.S. N° 004-2014-MINAGRI	UICN 2021-II	CITES2017	
Acanthaceae	*Justicia manserichensis*	-	-	-	**AND**
Arecaceae	*Iriartea deltoid*	-	LC	-	-
Combretaceae	*Terminalia amazonia*	-	LC	-	-
Lecythidaceae	*Bertholletia excelsa*	-	See	-	-
Malvaceae	*Pyramidal ochroma*	-	LC	-	-
Melastomataceae	*Bellucia pentamera*	-	LC	-	-
Melastomataceae	*Bubalina miconia*	-	LC	-	-
Meliaceae	*Cedrela odorata*	-	See	II	-
Meliaceae	*Sweetenia macrophylla*	-	See	II	-
Olacaceae	*Minquartia guianensis*	-	-	-	-
Piperaceae	*August pepper*	-	LC	-	-
Solanaceae	*Brunfelsia grandiflora*	-	LC	-	-
Solanaceae	*Solanum tree*	-	LC	-	-
Ulmaceae	*Trema micrantha*	-	LC	-	-
Urticaceae	*Pourouma cecropiifolia*	-	LC	-	-

Fountain: Own elaboration

9.3. Fauna

This monitoring is carried out in the facilities of the Maderacre company, said area does not use the natural resources present, maintaining the ecosystem present in the area.

9.3.1. Sampling and Analysis Methodology

A. Materials and Method

To carry out biotic monitoring, it is essential that the location of the point is well georeferenced, thus avoiding future inconveniences that may alter the monitoring data.

Location: The use of GPS is essential for the location of the points to be sampled.

Installation: Because the monitoring is in temporary areas of influence, it is done with the help of professional cameras, binoculars and, if possible, a recorder. A route of approximately 1 km is considered.

Measurement: The route is carried out 1 km away from the monitoring point, capturing images, noise, and rodents are temporarily captured using non-harmful cages.

Field sheets: Sheets or field notebook, preferably waterproof, to collect field information on the individuals at each point, supported by a checklist from the previous report of identified species.

Collect: To identify the species, it is necessary to take photographs using a professional camera that allows the clarity of the photo and can be identified according to the morphology of the species, as well as recordings that allow the identification of characteristic sounds of each species.

B. Factors that influence the proposed methodologies

Accessibility: Due to the presence of swamps at several monitoring points, close verification with the help of a zoom lens for visualization was complicated.

Adverse weather conditions: Constant rainfall delays work due to the movement of animals, data collection or identification of species.

Species identification: The fact of not being able to collect any individual makes their identification very difficult, having to use

photographic shots that are precise and a recorder that allows the capture of the characteristic sound of each species.

C. Field Phase

The present study was carried out from April 13 to 18, 2024 to monitor 4 points where 4 km would have to be traveled for proper inspection.

D. Quantitative Inventories

Ornithofauna: For bird monitoring, the Point Count Census Method Not Limited by Distance was used (Bibby et al., 19929). This method consists of locating a fixed point and staying there for a while, taking note of all the birds seen and heard in a certain radius (Ralph et al., 199610), the evaluation will be carried out at the times where the peaks occur. of bird activity, these being the intervals between 6:00 am - 10:00 am and 4:00 pm - 6:30 pm.
The census points were georeferenced and characterized in terms of vegetation type; After the counting period, observations will be made to record some type of behavior related to reproduction (courtship, displays, pairs, nests, tracks, chicks, etc.). For bird watching, binoculars were used in addition to relying on photographic recording. With this methodology, data is obtained on the number of individuals per species, and behaviors (songs, nests, territories, feeding methods), reproductive stages such as juveniles and adults, as well as male and female individuals can be observed.

Mastofauna: For the evaluation of mammals, different methodologies were used, depending on the group of mammals to be evaluated: minor non-flying mammals, minor flying mammals and major mammals.

- Minor flightless mammals
  For the evaluation of minor non-flying mammals (rodents), the transect method with Sherman brand live capture traps was used. 4 live capture traps will be placed, arranged in a single transect with 4 stations. The variation of traps will make the work a little more effective due to the affinity of some smaller mammals to a different type of traps. Traps will be primed and re-baited daily. For rodents, a mixture of oat flakes, peanut butter, honey, raisins and vanilla essence will be prepared. For the marsupials, a mixture will be prepared with peanut butter, honey and a cotton soaked in it will also be placed

of vanilla essence, as an attractant. The inspection of each trap will be carried out both in the morning and in the afternoon. Therefore, they will remain active during the night, being removed at the end of the field activity.
Each captured individual was determined to the species level, recording data on the sampling location, station number and trap type. Additionally, standard measurements, weight, sex, age and reproductive condition were taken for each captured specimen.

- older mammals
  The evaluation was carried out through tours of the different habitats in each location in the study area, where the presence of older mammals was recorded through direct and indirect evidence. Direct evidence will correspond to observations (sightings) and vocalizations, and indirect evidence will correspond to all types of evidence that the species have left in their wake (interviews with local residents, footprints, feces, hair, feeders, roosts, bone remains, scratches, etc). The daytime routes were carried out between 06:30 and 13:00 and the night routes from 17:30 to 23:00 walking at 1km/h.
  The starting point of the route and the end point will be georeferenced. In the case of recording observations, information will be taken on the species, number of individuals, sex and age (if possible), date, time of sighting, location on the trail, geographic location (UTM), and habitat characteristics. All these tools to verify species distributions, also applying geographic information systems, will help us define conservation strategies at the local and regional level. Likewise, unstructured interviews will be carried out with local residents and Project workers in order to determine the presence or absence of the species. This information will be part of the analysis, as part of the discussion of critical areas and uses of fauna species in the project area.

Herpetofauna: In the field, the sampling points proposed in the monitoring program were considered, having a total of two sampling stations for each of the 04 sampling points. At each sampling station, daytime and nighttime evaluations were carried out, where daytime sampling will cover from 08:00 to 17:00 hours and night sampling between 19:00 to 01:30 hours.

The estimate of the richness, abundance and diversity of amphibians and reptiles in the study area will be calculated from the data obtained through the “Visual Encounter Survey” (VES) method. During the

For this monitoring, collections will be made only when it is not possible to identify the specimens in the field, ensuring that, as long as the collections are minimal.

The first sampling methodology used in this evaluation corresponds to Fixed Band Transect Evaluation, where each sampling unit will comprise an area of 100 m. long by 2 m. wide for each monitoring station. The transects are ideally straight, with the sampling time being approximately 30 minutes (man hours). The transects will be arranged perpendicularly and between 5 and 10 m away from the access, path or movement trail generated by the equipment. They are spaced from each other between 50 and 250 meters. Two fixed band transects will be carried out per monitoring station.

In addition, timely records will be taken into account; these records are made outside the sampling transect.

The second methodology, and in a complementary way, is the VES (Visual Encounter Survey), this is a method that allows obtaining quantitative and qualitative data, it consists of the systematic search for reptiles and amphibians within a given habitat or vegetation unit for a period of time. pre-established period. During the searches, leaves, branches and other substrates where they can perch are reviewed, and various materials such as fallen trunks, stones, leaf litter, etc. are also removed, which are potential places where these animals usually take shelter.

According to this method, the sampling effort is expressed as the number of search man-hours. The duration time for each VES will be approximately 30 minutes and for each one data will be recorded such as date, time, habitat characteristics, geographic coordinates, identity of the species, number of individuals, activity, geographic coordinates, among others.

E. Monitoring Points

Table IX-8: Wildlife Monitoring Points

Point	Measuring point description	UTM coordinates (WGS-84)	
		It is	North
P1	Very close to residents and the interoceanic highway	436 949	8 787 695
P2		434 326	8 787 577
P3		436 798	8 787 804
P4		**8.437. 4376**	8 787 261

F. Cabinet Phase

The Cabinet Phase is executed once measurement records have been entered, obtaining results regarding wealth and abundance.

Species identification is generated “in situ” through direct observation of the morphology of each species such as type of fur, feathers, sounds, feces, footprints and nests. The photographs taken in the field were important to compare with species according to official literature.

The verification of the previous report was important in order to verify the stocks of species and compare them with those currently located.

G. Analysis of data

With the data generated in the field evaluations, the information was systematized and the Shannon-Wiener diversity indices (H'), the Simpson index (1-D) (Magurran, 1988; Krebs, 198921), Pielou's equity (J´). To carry out the calculations of the different indices, the PAST program (Hammer et al., 200122) was used, which is based on Information Theory and takes into account two aspects of diversity, species richness and heterogeneity. (the distribution of the number of individuals of each species).
The calculation of the different parameters related to the estimation of biological diversity was carried out with the results of the abundances obtained in the quantitative evaluation.

- **The Shannon-Wiener index (H')**
  It assumes that the individuals in the populations come from random collections and that the populations are effectively infinite. It also assumes that all species are represented in the sample.

$$H' = -S pilog2pi$$

  Where:
  Pi = Number of species / total number of individuals in the sample.

- **Simpson's dominance (1-D)**
  It is expressed as the uniformity of the importance values of all the species in a sample, measuring the degree of uncertainty in predicting which species an individual chosen at random from a collection will belong to, assuming that all

species are represented in the sample. The statistic that defines it is:

$$D = \frac{\sum_{i=1}^{s} n_i (n_i - 1)}{N(N-1)}$$

Where:
S = is the number of species
N = is the total number of organisms present (or square units) n = is the number of specimens per species

- **Pielou Equity Index:**
  This index measures the proportion of the observed diversity in relation to the maximum expected diversity. Its value ranges from 0 to 1, so that 1 corresponds to situations where all species are equally abundant (Magurran, 1988).

H. Wealth and Abundance

Specific richness is the simplest way to measure biological diversity, since it is based solely on the number of species present, without taking into account their importance value (Moreno, 2001).

Relative abundances are expressed as a percentage (%) and will be considered as the number of individuals of each species with respect to the total number of individuals recorded in a habitat or sampling area, obtained with all the sampling methodologies used. Relative abundance has an important comparative value and variations in this parameter can mean variations in the community (Krebs & Correa, 1985). It is calculated as follows: Ari=number of individuals of species i/ total number of individuals, where Ari= Relative abundance of species “i”.
To obtain the diversity values, the Shannon-Weaver (H') and Simpson (1-D) indices were used, which are obtained according to the following calculations (Krebs 1989 and Magurran 1991).

I. Species Categorization

The conservation status of amphibians and reptiles was determined by verifying whether the species recorded during monitoring are included in international (CITES, 2014; IUCN 2014) and national (D.S. Nº 004-2014-MINAGRI) conservation lists or catalogues;
Likewise, its degree of endemism was determined, for which sources such as virtual platforms and specialized documentation were reviewed.

9.3.2. Results

Ornithofauna: From the qualitative and quantitative evaluations developed, a total of 40 bird species distributed in 20 families and 11 orders were counted (see Table IX-9).

Table IX-9: Birdlife recorded in the monitoring area

N°	Order	Family	Species	Common name
1	Apodiformes	Trochilidae	*Amazilia lactea*	"Sapphire-breasted Hummingbird"
2	Apodiformes	Trochilidae	*Campylopterus largipennis*	"Grey-breasted Saberwing"
3	Cathartiformes	Cathartidae	*Cathartes aura*	"Red-headed chicken"
4	Cathartiformes	Cathartidae	*Coragyps atratus*	"Black-headed chicken"
5	Charadriiformes	Jacanidae	*Jacana jacana*	"Water cock"
6	Cuculiformes	Cuculidae	*Piaya cayana*	"Squirrel cuckoo"
7	Cuculiformes	Cuculidae	*Crotophaga ani*	"Smooth-billed Woodpecker"
7	Cuculiformes	Cuculidae	*Crotophaga sulcirostris*	"Striated-billed Woodpecker"
8	Columbiformes	Columbidae	*Columbina talpacoti*	"Reddish Dove"
9	Galliformes	Cracidae	*Penelope jacquacu*	"Amazonian turkey"
10	Passerines	Jaundice	*Cacicus this*	"Yellow-backed chieftain"
11	Passerines	Jaundice	*Icterus cronotus*	"Orange-backed Turpial"
12	Passerines	Jaundice	*Molothrus bonariensis*	"Shiny thrush"
13	Passerines	Fringillidae	*Euphonia chlorotica*	"Purple-throated euphony"
14	Passerines	Fringillidae	*Euphonia minute*	"Euphony of White Subcaudals"
15	Passerines	Hirundinidae	*Pygochelidon cyanoleuca*	"Blue and White Swallow"
16	Passerines	Thamnophilidae	*Thamnophilus doliatus*	"Striped batara"
17	Passerines	Tyrannidae	*Pachyramphus castaneus*	"Cabezón de Corona Castaña"
18	Passerines	Tyrannidae	*Todirostra gray*	"Common Spatula"
19	Passerines	Tyrannidae	*A melancholy tyrant*	"Tirano Tropical"
20	Passerines	Tyrannidae	*Like Myiozetetes*	"Medium Benteveo"
21	Passerines	Tyrannidae	*Pitangus sulphuratus*	"Bienteveo Grande"
22	Passerines	Thraupidae	*Bishop of Thraupi*	"Tangara azulada"
23	Passerines	Thraupidae	*Ramphocelus carbo*	"Silver-billed tanager"
24	Passerines	Thraupidae	*Ramphocelus melanogaster*	"Black-bellied tanager"
25	Passerines	Thraupidae	*A bunch of palm trees*	"Tangara Azul"
26	Passerines	Thraupidae	*Thraupis bonariensis*	"Blue and yellow tanager"
27	Passerines	Thraupidae	*Volatinia jacarina*	"Bluish Black Seedling"
28	Passerines	Thraupidae	*Sporophila angolensis*	"Chestnut Belly Seedbed"
29	Passerines	Thraupidae	*Coereba flaveola*	"Reinita Mielera"

N°	Order	Family	Species	Common name
30	Passerines	Thraupidae	*A dark tiara*	"Brown Seedbed"
31	Passerines	Turdidae	*The lowly thrush*	"Black-billed thrush"
32	Passerines	Troglodytidae	*Troglodytes aedon*	"Cucarachero"
33	Passerines	Parulidae	*Phaeothlypis fulvicauda*	"Silver-backed Warbler"
34	Piciformes	Bucconidae	*Monasa nigrifrons*	"Black-fronted nun"
35	Piciformes	Picidae	*Dryocopus lineatus*	"Striped Woodpecker"
36	Piciformes	Picidae	*Colaptes punctigula*	"Spot-chested Woodpecker"
37	Psittaciformes	Psittacidae	*Aratinga weddellii*	"Dark-headed parrot"
38	Tinamiformes	Tinamidae	*Crypturellus bartletti*	"Barlett's Partridge"
39	Trogoniformes	Trogonidae	*Trogon viridis*	"Trogon de cola blanca"

Fountain: Own elaboration

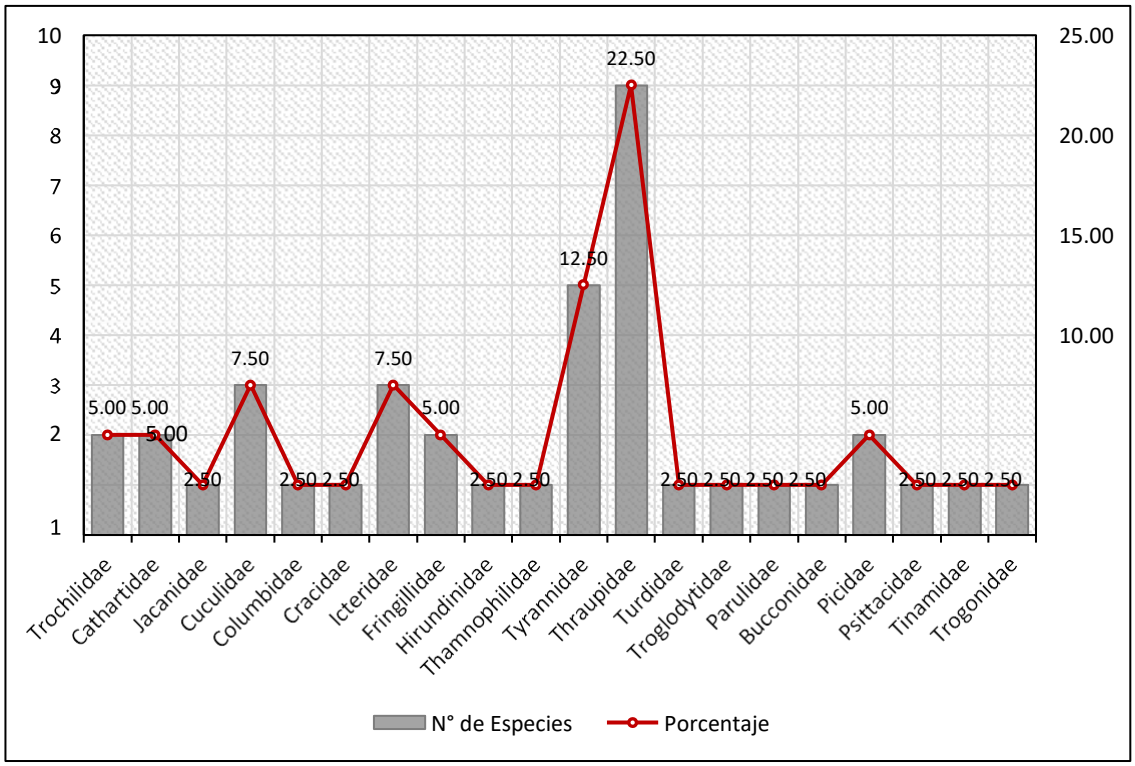
Regarding the composition of the avifauna at the order level, the order Passeriformes with 24 species represented 60.00% of the total recorded species. The next order was Piciformes and Cuculiformes with 03 species representing 7.50% each; followed by Apodiformes and Cathartiformes with 02 species each, representing 5.00% (see Table IX-10). These results are expected, if we take into consideration that the order Passeriformes brings together the largest number of species and families in the Neotropics, making it the most abundant in most ecosystems.

Table IX-10: Composition of the avifauna at Order level

Order	No. of Species	Percentage (%)
Apodiformes	2	5.00
Cathartiformes	2	5.00
Charadriiformes	1	2.50
Cuculiformes	3	7.50
Columbiformes	1	2.50
Galliformes	1	2.50
Passerines	24	60.00
Piciformes	3	7.50
Psittaciformes	1	2.50
Tinamiformes	1	2.50
Trogoniformes	1	2.50
Total	**40**	**100%**

Fountain: Own elaboration

This same analysis regarding the composition at the family level shows that Thraupidae (seedeaters) and Tyrannidae (flytraps) were the most prominent with 09 and 05 species each, representing 22.50% and 12.50% of the total species recorded each, followed by the Cuculidae and Icteridae families with 03 records, representing 7.50% each. Finally, the other families presented 02 less species each (see Graph N° 3).



Graph N° 3. Composition of the avifauna at the family level

Table IX-11 presents the quantitative analysis carried out, taking only the data collected through the application of the point counting sampling method.

Table IX-11: Community indices recorded by monitoring station in the study area

N°	Order	Family	Species	Common name	Monitoring Stations			
					Amazon forest			Herbazal
					P1	P2	P4	P3
1	Apodiformes	Trochilidae	*Amazilia lactea*	"Sapphire-breasted Hummingbird"	0	1	0	0
2	Apodiformes	Trochilidae	*Campylopterus largipennis*	"Grey-breasted Saberwing"	1	0	0	1
3	Cathartiformes	Cathartidae	*Cathartes aura*	"Red-headed chicken"	2	0	1	2
4	Cathartiformes	Cathartidae	*Coragyps atratus*	"Black-headed chicken"	4	3	6	3
5	Charadriiformes	Jacanidae	*Jacana jacana*	"Water cock"	0	0	0	5
6	Cuculiformes	Cuculidae	*Piaya cayana*	"Squirrel cuckoo"	1	0	2	0
7	Cuculiformes	Cuculidae	*Crotophaga ani*	"Smooth-billed Woodpecker"	1	0	1	1
8	Cuculiformes	Cuculidae	*Crotophaga sulcirostris*	"Striated-billed Woodpecker"	1	1	0	1
9	Columbiformes	Columbidae	*Columbina talpacoti*	"Reddish Dove"	2	1	3	2
10	Galliformes	Cracidae	*Penelope jacquacu*	"Amazonian turkey"	0	0	0	3
11	Passerines	Jaundice	*Cacicus this*	"Yellow-backed chieftain"	1	0	1	1
12	Passerines	Jaundice	*Icterus cronotus*	"Orange-backed Turpial"	2	1	2	1
13	Passerines	Jaundice	*Molothrus bonariensis*	"Shiny thrush"	3	2	1	2
14	Passerines	Fringillidae	*Euphonia chlorotica*	"Purple-throated Euphony"	0	1	1	0
15	Passerines	Fringillidae	*Euphonia minute*	"Euphony of White Subcaudals"	0	0	1	1
16	Passerines	Hirundinidae	*Pygochelidon cyanoleuca*	"Blue and White Swallow"	1	2	0	1
17	Passerines	Thamnophilidae	*Thamnophilus doliatus*	"Striped batara"	1	0	0	0
18	Passerines	Tyrannidae	*Pachyramphus castaneus*	"Cabezón de Corona Castaña"	0	1	0	1
19	Passerines	Tyrannidae	*Todirostra gray*	"Common Spatula"	1	0	0	1
20	Passerines	Tyrannidae	*A melancholy tyrant*	"Tirano Tropical"	3	2	4	2
21	Passerines	Tyrannidae	*Like Myiozetetes*	"Medium Benteveo"	1	0	1	0
22	Passerines	Tyrannidae	*Pitangus sulphuratus*	"Bienteveo Grande"	0	1	0	1

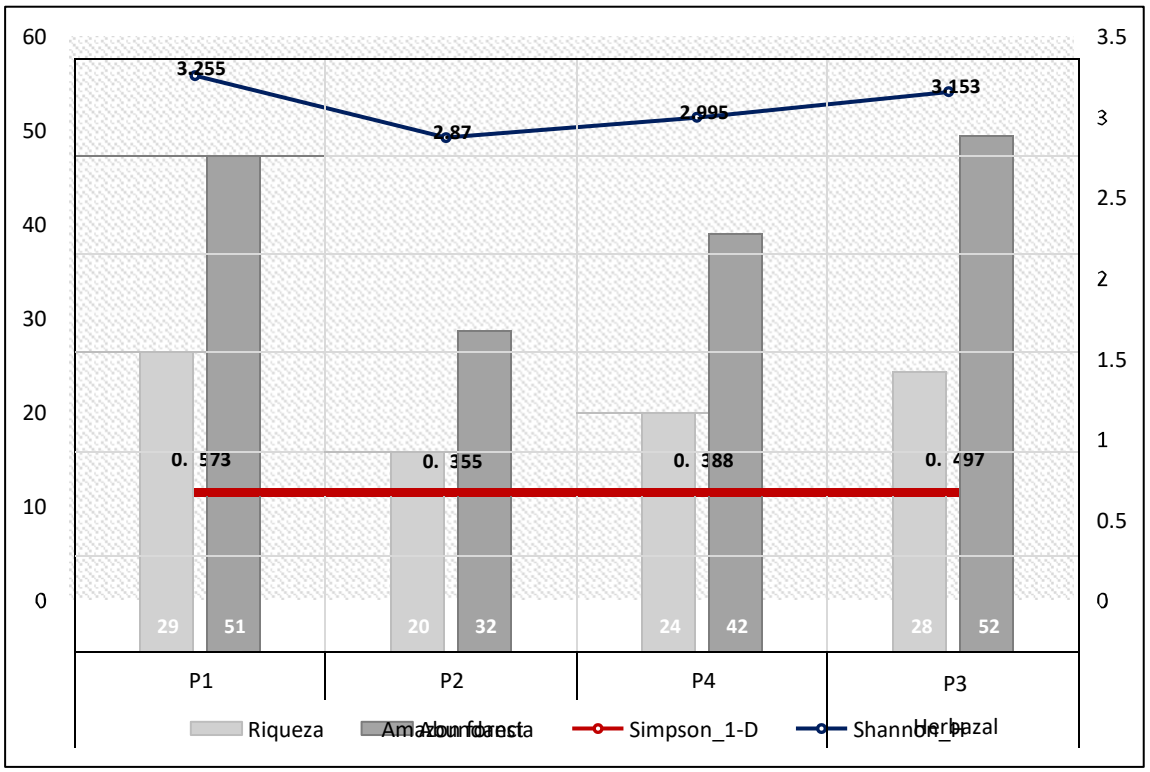
N°	Order	Family	Species	Common name	Monitoring Stations			
					Amazon forest			Herbazal
					P1	P2	P4	P3
23	Passerines	Thraupidae	*Bishop of Thraupi*	"Tangara azulada"	3	1	1	4
24	Passerines	Thraupidae	*Ramphocelus carbo*	"Silver-billed tanager"	2	1	1	3
25	Passerines	Thraupidae	*Ramphocelus melanogaster*	"Black-bellied tanager"	1	0	0	1
26	Passerines	Thraupidae	*A bunch of palm trees*	"Tangara Azul"	0	1	0	0
27	Passerines	Thraupidae	*Thraupis bonariensis*	"Blue and yellow tanager"	1	0	1	0
28	Passerines	Thraupidae	*Volatinia jacarina*	"Bluish Black Seedling"	2	2	1	2
29	Passerines	Thraupidae	*Sporophila angolensis*	"Chestnut Belly Seedbed"	2	0	3	0
30	Passerines	Thraupidae	*Coereba flaveola*	"Reinita Mielera"	3	4	2	4
31	Passerines	Thraupidae	*A dark tiara*	"Brown Seedbed"	1	0	1	0
32	Passerines	Turdidae	*The lowly thrush*	"Black-billed thrush"	3	3	2	4
33	Passerines	Troglodytidae	*Troglodytes aedon*	"Cucarachero"	1	0	2	0
34	Passerines	Parulidae	*Phaeothlypis fulvicauda*	"Silver-backed Warbler"	0	1	0	1
35	Piciformes	Bucconidae	*Monasa nigrifrons*	"Black-fronted nun"	2	0	2	1
36	Piciformes	Picidae	*Dryocopus lineatus*	"Striped Woodpecker"	0	1	0	0
37	Piciformes	Picidae	*Colaptes punctigula*	"Spot-chested Woodpecker"	2	0	1	1
38	Psittaciformes	Psittacidae	*Aratinga weddellii*	"Dark-headed parrot"	2	2	0	1
39	Tinamiformes	Tinamidae	*Crypturellus bartletti*	"Barlett's Partridge"	0	0	0	1
40	Trogoniformes	Trogonidae	*Trogon viridis*	"Trogon de cola blanca"	1	0	1	0
Wealth					**29**	**20**	**24**	**28**
Abundance					**51**	**32**	**42**	**52**
Simpson_1-D					**0.9573**	**0.9355**	**0.9388**	**0.9497**
Shannon_H					**3.255**	**2.87**	**2.995**	**3.153**
Equitability_J					**0.9668**	**0.958**	**0.9423**	**0.9463**

Fountain: Own elaboration

Regarding abundance, a total of 177 individuals belonging to 40 species were recorded. At the level of the monitoring stations, station P3 stood out with 52 individuals, followed by station P1 with 51 individuals each. Thirdly, the monitoring station P4 with 42 individuals and P2 with 32 individuals, as the stations of greatest abundance (see Graph N° 4).

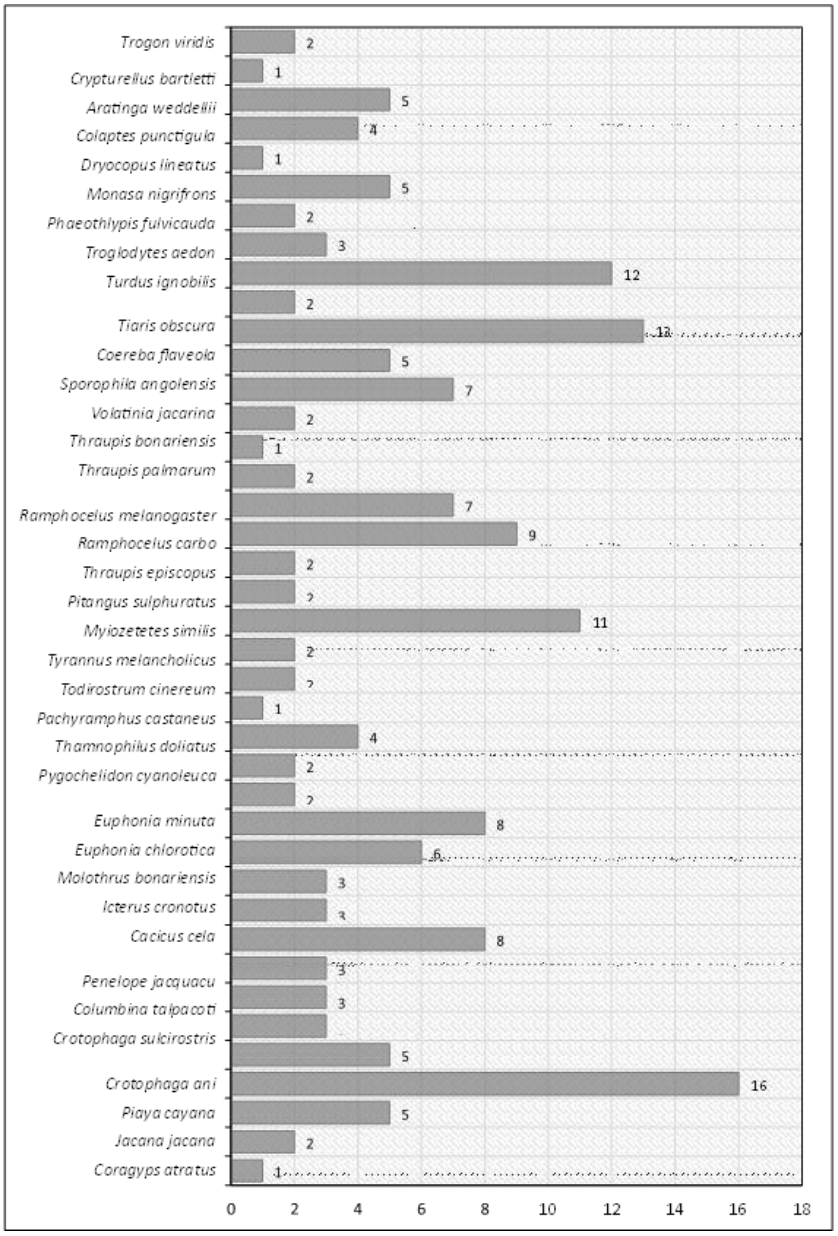
Regarding the diversity indices recorded, these fluctuated between 2.87 bits/individual to 3.255 bits/individual for Shannon and, between 0.9355 probits/individuals to 0.9597 probits/individuals for Simpson (see Graph N° 4). High to moderate diversity values, result of the distribution of the recorded abundances, which show a high predominance of the species within the evaluated ecosystem.

Graph N° 4. Community indices recorded by vegetation cover



According to the results obtained, the species *Coragyps atratus* with 16 individuals was the predominant one, followed by *Coereba flaveola* with 13 individuals. He followed *The lowly thrush* with 12 individuals, *A melancholy tyrant* with 11 individuals, and finally *Bishop of Thraupi* with 09 individuals, as the most abundant species (see Chart No. 5).

Graph N° 5. Most abundant bird species in the study area



Mastofauna: In this monitoring, records were obtained of a single species of minor non-flying mammal (rodents) and 01 single individual located at point P3 classified as Grassland.

Table IX-12: Minor mammals recorded in the monitoring area

N°	Order	Family	Species	Common name
1	Rodentia	Cricetidae	*Oligoryzomys cf. microtis*	Small-eared rice mouse

Fountain: Own elaboration

The larger mammals in the monitoring area were represented by 05 species, distributed in 05 families and 05 orders. Most of the records were through indirect evidence (IE).

Table IX-12: Major fauna recorded in the monitoring area

N°	Order	Family	Species	Common name	Evidence
1	Perissodactyla	Tapiridae	*A terrestrial tapir*	"tapir"	interview
2	Artiodactyla	Cervidae	*Mezama americana*	"red deer"	interview
3	Primates	Atelidae	*Alouatta seniculus*	"Red Howler Monkey"	visual
4	Cingulata	Chlamyphoridae	*Priodontes maximus*	"Giant armadillo"	footprints
5	Lagomorpha	Leporidae	*Sylvilagus brasiliensis*	"Amazon hare"	footprints

Fountain: Own elaboration

Table IX-13 shows the abundance reported by each monitoring station. Where you can see 07 individuals belonging to 05 species. At the level of the monitoring stations, station P2 stood out with 04 individuals, being the most representative station.

Table IX-13: Abundance by monitoring station in the study area

N°	Order	Family	Species	Monitoring Stations			
				Amazon forest			Herbazal
				P1	P2	P4	P3
1	Perissodactyla	Tapiridae	*A terrestrial tapir*	1	0	0	0
2	Artiodactyla	Cervidae	*Mezama americana*	0	0	1	0
3	Primates	Atelidae	*Alouatta seniculus*	0	3	0	0
4	Cingulata	Chlamyphoridae	*Priodontes maximus*	0	1	0	0
5	Lagomorpha	Leporidae	*Sylvilagus brasiliensis*	0	0	0	1
Wealth				**1**	**2**	**1**	**1**
Abundance				**1**	**4**	**1**	**1**
Simpson_1-D				**0**	**0.375**	**0**	**0**
Shannon_H				**0**	**0.5623**	**0**	**0**
Equitability_J					**0.8113**		

Fountain: Own elaboration

Regarding the diversity indices, only values that fluctuate between 0 bits/individual and 0.5623 bits/individual for Shannon and from 0 probits/individuals to 0.375 probits/individuals for Simpson are recorded (see Graph N° 7). These values meant low diversity and high dominance of species in the study area.

Herpetofauna: From the qualitative and quantitative evaluations developed, a total of 06 species distributed in 04 families and 02 orders were counted (see Table IX-14).

Table IX-14: Herpetofauna recorded in the monitoring area

N°	Order	Family	Species	Common name
1	Anura	Bufonidae	*Rhinella dapsilis*	"eared toad"
2	Anura	Bufonidae	*Rhinella margaritifera*	"crested toad"
3	Anura	Hylidae	*Dendropsophus rhodopeplus*	"bandage wound"
4	Anura	Hylidae	*Osteocephalus taurinus*	"Common hoofed frog"
5	Anura	Leptodactylidae	*Adenoma andrea*	"Earth Frog"
6	Scaly	Teiidae	*He is ripe, he is ripe*	"ripe"

Fountain: Own elaboration

Regarding the composition of the herpetofauna at the order level, the Anura order with 05 species represented 83.33% of the total recorded species. The next order was Squamata with 01 species representing 16.67% (see Table IX-15).

Table IX-15 Composition of the herpetofauna at Order level

Order	No. of Species	Percentage
Anura	05	83.33 %
Scaly	01	16.67 %
Total	**06**	**100 %**

Fountain: Own elaboration

This same analysis regarding the composition at the family level, shows the Bufonidae and Hylidae families as the most rich, with the record of 02 species each and with a percentage of 23.82% as shown in Graph N°6.

Graph N° 6. Composition of the herpetofauna at the family level

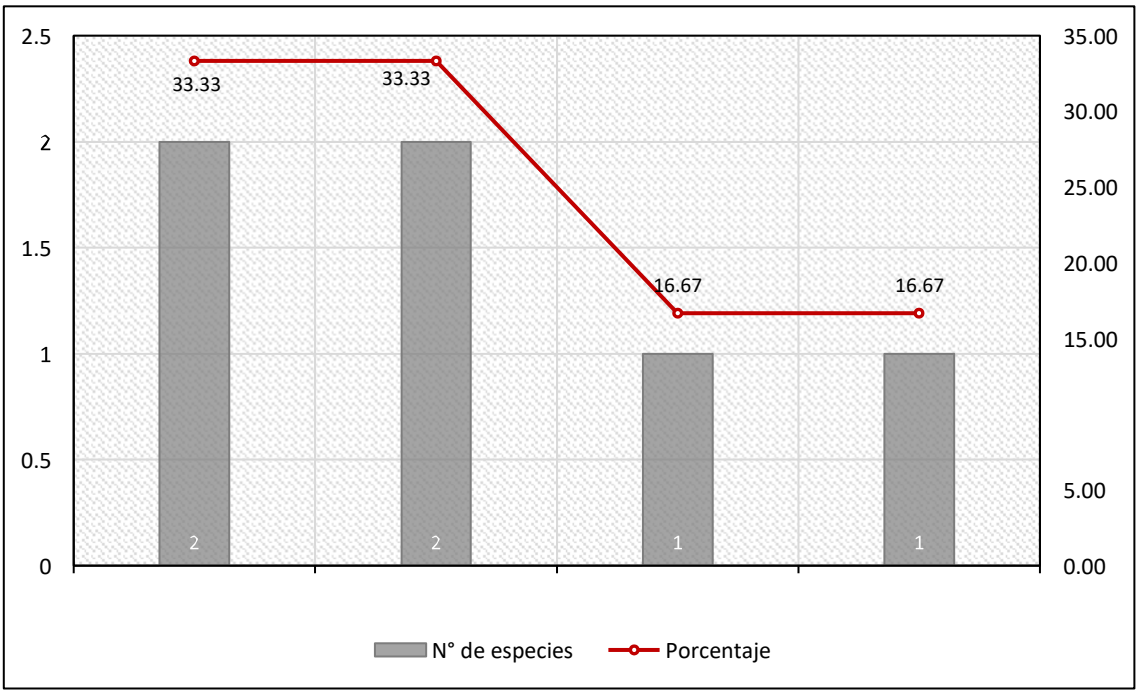


Table IX-16 presents the quantitative analysis carried out by monitoring station for the herpetofauna.

Table IX-16: Community indices recorded by monitoring station in the study area

N°	Order	Family	Species	Monitoring Stations			
				Amazon forest			Herbazal
				P1	P2	P4	P3
1	Anura	Bufonidae	*Rhinella dapsilis*	0	0	0	2
2	Anura	Bufonidae	*Rhinella margaritifera*	0	0	0	1
3	Anura	Hylidae	*Dendropsophus rhodopeplus*	1	0	0	0
4	Anura	Hylidae	*Osteocephalus taurinus*	0	1	0	2
5	Anura	Leptodactylidae	*Adenoma andrea*	0	0	0	2
6	Scaly	Teiidae	*He is ripe, he is ripe*	2	3	3	1
Wealth				**2**	**2**	**1**	**5**
Abundance				**3**	**4**	**3**	**8**
Simpson_1-D				**0.444**	**0.375**	**0**	**0.7813**
Shannon_H				**0.636**	**0.562**	**0**	**1.56**
Equitability_J				**0.918**	**0.811**	**-**	**0.969**

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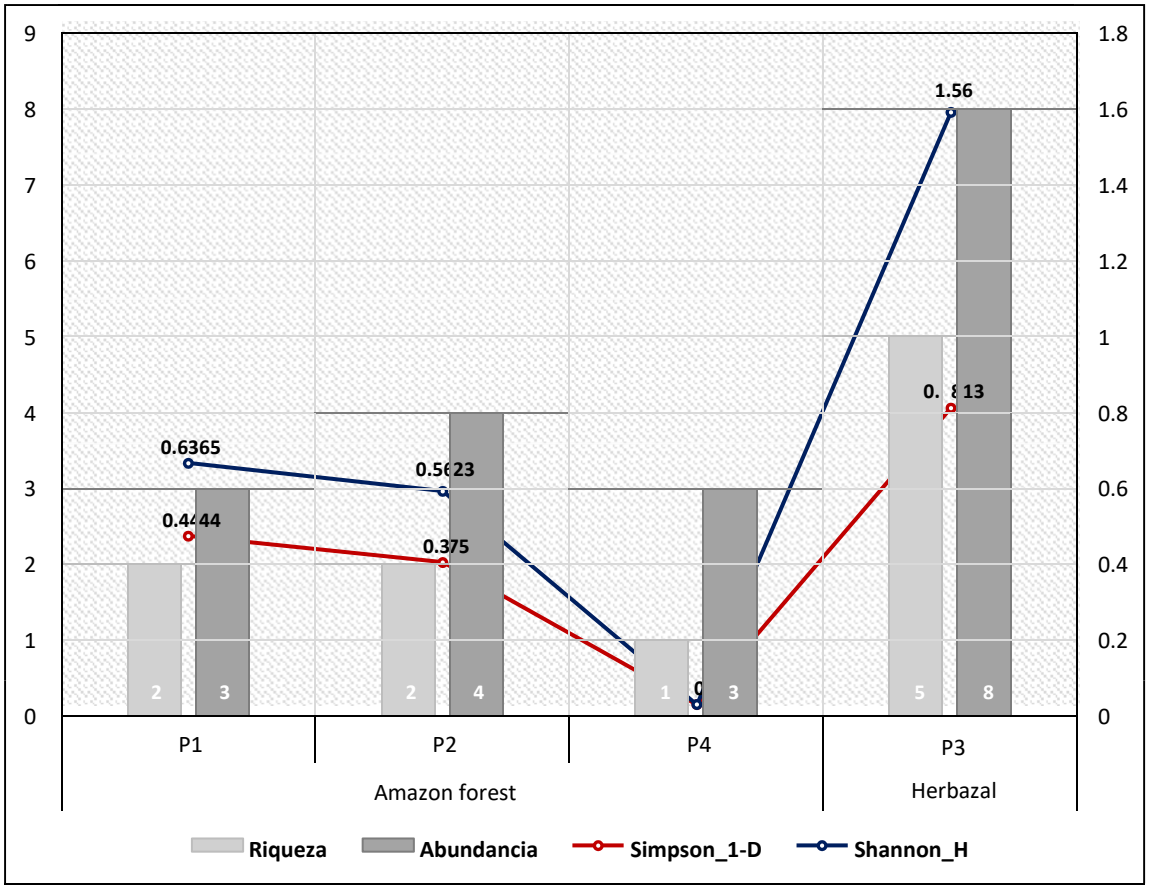
Regarding abundance, a total of 18 individuals belonging to 06 species were recorded. At the level of the monitoring stations, station P3 stood out with 08 individuals, followed by station P2 with 04 individuals, leaving stations P1 and P4 with 03 individuals each in third place (see Graph N° 7).

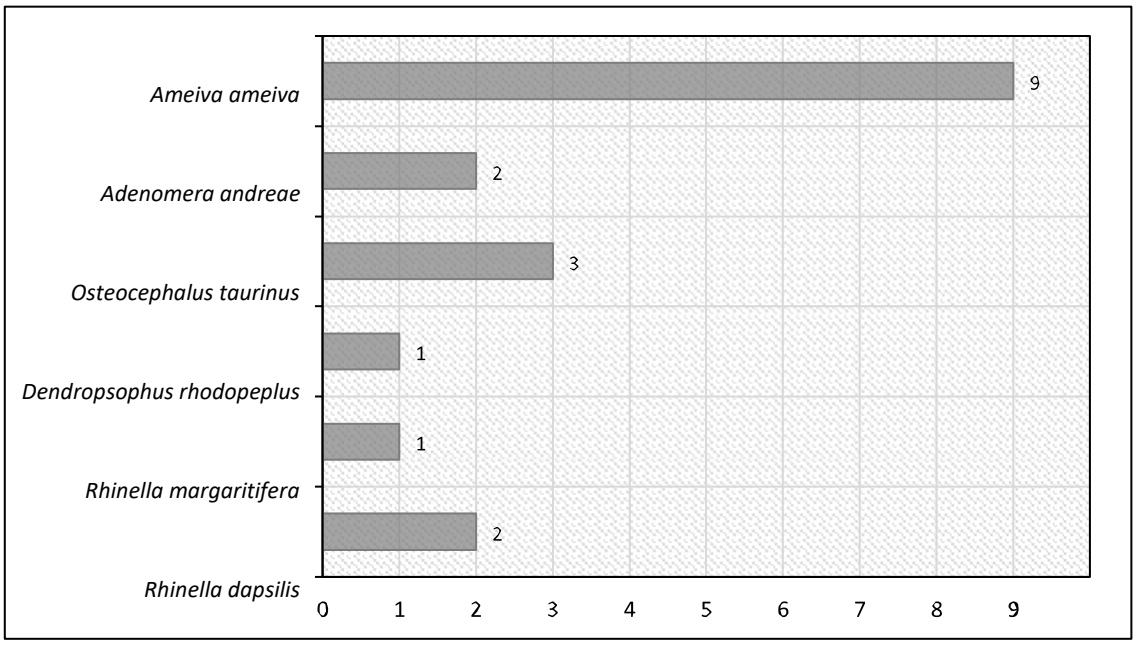
Regarding the diversity indices recorded, these fluctuated between 0.0 bits/individual to 1.56 bits/individual for Shannon and, between 0.0 probits/individuals to 0.7813probits/individuals for Simpson (see Graph N° 7). Moderate diversity values, a result of the distribution of recorded abundances, also shows a moderate dominance of species and low equity.

Graph N° 7. Community indices recorded by monitoring station

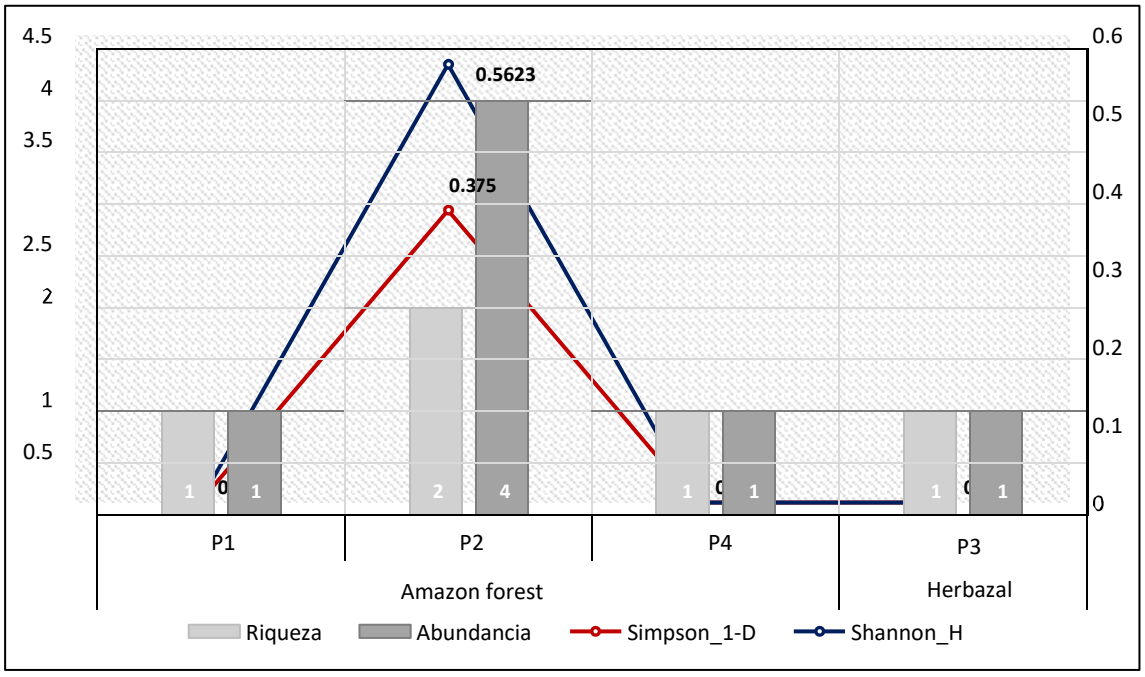


According to the results obtained, the species *He is ripe, he is ripe* with 09 individuals was the predominant one, followed by *Osteocephalus taurinus* with 03 individuals and *Adenomeraandrae y Rhinella dapsilis* with 02 individuals each. Finally, we have the remaining species with less than 01 individuals each (see Graph N° 8).

Gráfico N° 8. Especie de herpetofauna más abundante en el área de

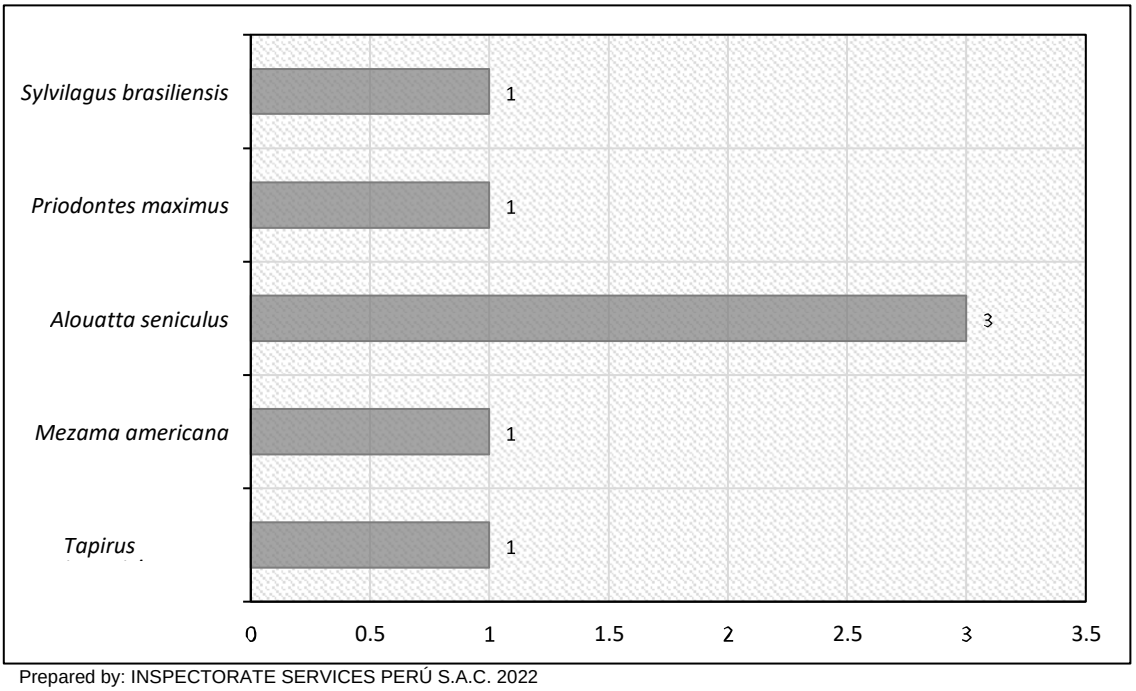


Graph N° 9. Community indices recorded by monitoring station



According to the results obtained, the species *Alouatta seniculus* with 03 individuals it was the predominant one, followed by the rest of the species that were indirectly recorded with a single individual as the least predominant in the monitoring areas (see Graph N° 8).

Graph N° 10. Most abundant species of mastofauna in the study area



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9.3.3. Species in conservation category

A. Bird fauna

According to the national categorization (D.S. Nº 004-2014-MINAGRI), no species are registered within any conservation category. For IUCN, 04 species were presented in the **category of Least Concern; while in the criteria** Internationally, 02 species are registered in Appendix II of CITES. Finally, 01 endemic species was recorded for Peru (see Table IX-17).

Table IX-17: Bird fauna species in any conservation category

Family	Species	State of conservation				ENDEMISM
		D.S. N° 004-2014-MINAGRI	UICN 2021 -II	CITES 2017	CMS	
Thraupidae	*Ramphocelus melanogaster*	-	LC	-	-	**AND**
Trochilidae	*Campylopterus largipennis*	-	-	II	-	**-**
Trochilidae	*Amazilia lactea*	-	LC	-	-	**-**
Psittacidae	*Aratinga weddellii*	-	LC	II	-	**-**
Cracidae	*Penelope jacquacu*	-	LC	-	-	**-**

Fountain: Own elaboration

B. Mastofauna

According to the national categorization (D.S. Nº 004-2014-MINAGRI), 02 species are registered within some conservation category. While in the international criteria 02 species are registered within the category of least concern of the IUCN 2021-II and 01 species within Appendix II. For this monitoring, no species endemic to Peru were recorded (see Table IX-18).

Table IX-18: Mastofauna species in any conservation category

Family	Species	National Criterion	International Criterion		Endemic Species
		D.S. Nº 004-2014-MINAGRI	IUCN 2021-II	CITES 2017	
Tapiridae	*A terrestrial tapir*	NT	See	II	-
Cervidae	*Mezama americana*	DD	DD	-	-
Atelidae	*Alouatta seniculus*	-	LC	-	-
Chlamyphoridae	*Priodontes maximus*	-	See	-	-
Leporidae	*Sylvilagus brasiliensis*	-	LC	-	-

C. Herpetofauna

No species was recorded within the supreme decree of MINAGRI, all registered species are within the category of Least Concern of the IUCN 2021-II and for this monitoring no endemic species were recorded for Peru (see Table IX-19).

Table IX-19: Herpetofauna species in any conservation category

Family	Species	State of conservation				ENDEMISM
		D.S. N° 004- 2014-MINAGRI	IUCN 2021 - II	CITES 2017	CMS	
Bufonidae	*Rhinella dapsilis*	-	LC	-	-	-
Bufonidae	*Rhinella margaritifera*	-	LC	-	-	-
Hylidae	*Dendropsophus rhodopeplus*	-	LC	-	-	-
Hylidae	*Osteocephalus taurinus*	-	LC	-	-	-
Leptodactylidae	*Adenoma andrea*	-	LC	-	-	-
Teiidae	*He is ripe, he is ripe*	-	LC	-	-	-

9.4. Comments

Flora and Fauna Monitoring according to points and location is carried out in the Maderacre facilities, where these resources are not for the use of the owners, conserving and maintaining the ecosystem.

X. CONCLUSIONS AND RECOMMENDATIONS

10.1. Conclusions

Air quality

- The concentrations of the parameters PM10, CO, NO_2 and SO_2, obtained in the windward and leeward stations during environmental monitoring, do not exceed the Environmental Quality Standards for Air, as established in Supreme Decree No. 003-2017-MINAM.
- There are specific days at the CA-01 and CA-02 stations where they exceed the Environmental Quality Standards for air parameter PM10, this is coincident with the shutdown process of Industrial Ovens where the smoke is concentrated inside the hangar due to because the extractor turns off when the carbonization process is finished.
- From the results obtained, it can be stated that the influence on air quality due to the operation of the company does not significantly influence the air quality of the area.

Atmospheric Emissions

- Regarding the monitoring of atmospheric emissions, at the boiler station (EM-01), according to the IFC guide of the World Bank (2007), it determines that the emissions from boilers (Boilers) obtained in the monitoring do not exceed the maximum limit. permissible.

Environmental Noise Levels

- The ambient noise level taken outside the plant area does not exceed the Environmental Quality Standards for Noise, as stipulated in he D.S N° 085-2003-PCM for industrial zoning.

Fauna and Flora

- The results of fauna monitoring identified three groups: ornithofauna, mastofauna and herpetofauna, with the most predominant group being ornithofauna where 40 species were recorded.

- The results obtained from flora monitoring identified 77 species of plants belonging to 30 families and vegetation cover: secondary forest.

10.2. recommendations

- Continue to comply with the maintenance program for equipment, machinery, and vehicles that transit within the plant in order to reduce noise levels and the dispersion of particulate matter.
- Continue monitoring environmental control measures, in order to reduce the impacts generated by the plant's activities.
- Consider maintaining a corrective in the Furnace shutdown process to avoid the concentration of PM10 inside the hangar.

ATTACHMENTS

List of Annexes