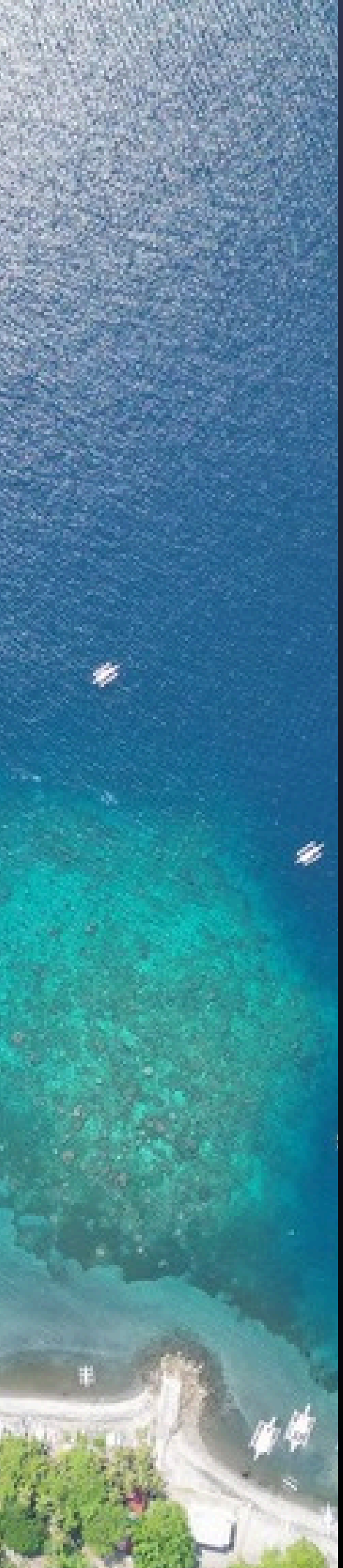


Marine Conservation Philippines

Environmental Action Plan

October 2026

Version 3.2

marineconservationphilippines.org

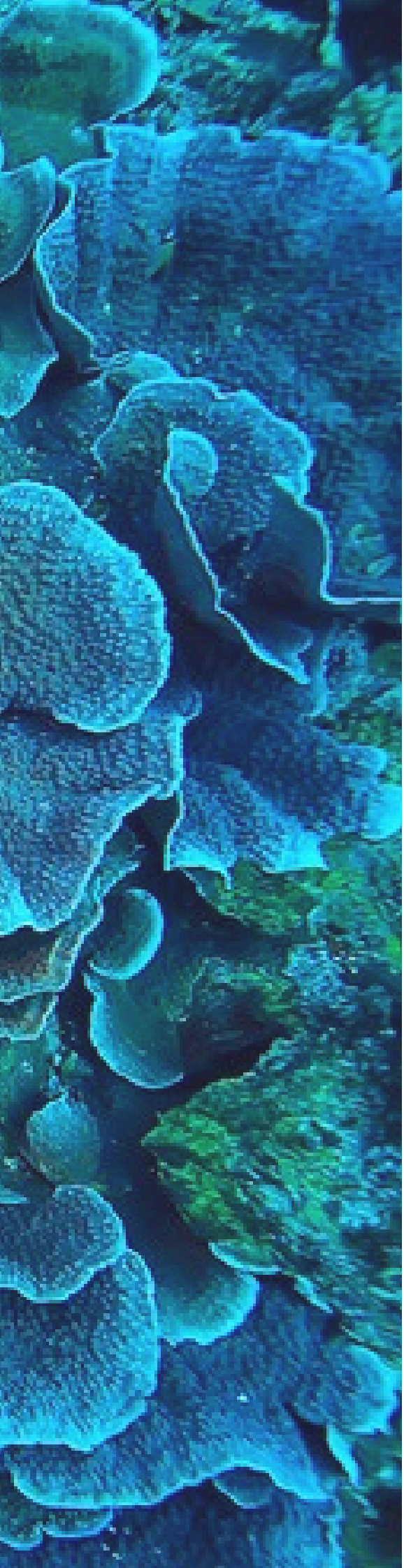


Table of Contents

- 1 Introduction
  - 1.1 Purpose and scope
  - 1.2 How we make decisions
  - 1.3 Earlier editions
  - 1.4 Responsibility and review
- 2 Water and energy
  - 2.1 Water supply and use
  - 2.2 Wastewater management
  - 2.3 Solar power and energy use
- 3 Food and waste
  - 3.1 Food policy
  - 3.2 Purchasing and equipment
  - 3.3 Waste prevention and disposal
- 4 Climate and reporting
  - 4.1 Diving and base
  - 4.2 Travel and operational emissions
  - 4.3 Measurement and communication
- 5 Mangroves and volunteer carbon impact
  - 5.1 Our mangrove planting
  - 5.2 Volunteer travel emissions
  - 5.3 Comparing planting with travel emissions
  - 5.4 Energy use on base compared with home
  - 5.5 Diet on base compared with home
- 6 Improvement register





1. INTRODUCTION

1.1. Purpose and scope

Marine Conservation Philippines (MCP) seeks to reduce the environmental impacts of operating its campus and carrying out conservation, research, training and volunteer activities. This policy covers the resources we use, the waste and wastewater we produce, our effects on habitats, and the environmental claims we publish.

The policy applies to staff, volunteers and interns. Relevant requirements will also be communicated to suppliers and contractors working for MCP. Detailed diving, research and maintenance procedures support this policy.

1.2. How we make decisions

We will prioritise actions according to environmental benefit, pollution risk, practicality, cost and the staff time required. We will maintain useful equipment and infrastructure, prevent unnecessary consumption, and assess replacements over their expected service life. Health, safe working and effective sanitation remain essential.

We will distinguish established practices from planned improvements, and measured results from estimates. Claims of reduced impact will identify the comparison period and supporting evidence.

1.3. Earlier editions

This policy develops the work begun through MCP's November 2017 staff and volunteer workshop led by Amy Slack, and the subsequent 2018 update by Søren Knudsen.

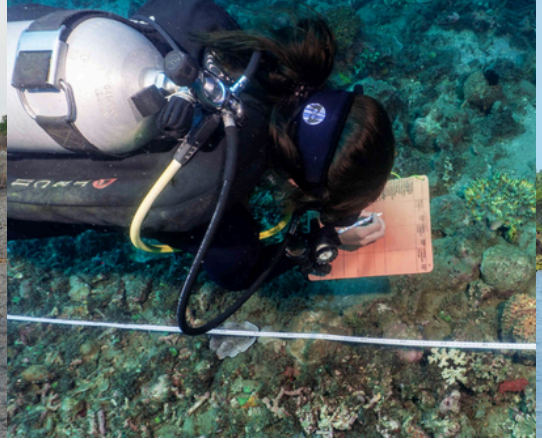
Edition date	Version
December 2017	Environmental Action Plan - 2018-2019 - v1
May 2018	Environmental Action Plan - 2018-2019 - v2
October 2026	Environmental Action Plan - 2026 - v3 - 3.2

1.4. Responsibility and review

The Director will assign permanent staff leads, agree the resources needed, and oversee implementation. The action register will be checked semi-annually.

The first public progress update and policy review are proposed for 12 months after adoption, followed by annual reviews.

Volunteers may assist, however accountability remains with MCP staff.


2. WATER AND ENERGY

2.1. WATER SUPPLY AND USE

In 2021 MCP drilled a new well to a depth of 61 meters (200 feet), to strengthen the reliability of its water supply. Groundwater was encountered at 21 meters (70 feet). The surrounding area is predominantly fields with few nearby neighbours.

We will maintain the well and distribution system, protect the source from contamination, and keep appropriate water-quality and maintenance records. Supply reliability will be assessed through available information on well performance and seasonal conditions. Borehole depth alone will not be used as evidence of unlimited supply or drinking-water quality.

Water conservation will focus on preventing leaks and unnecessary use. Larger infrastructure changes will be assessed against their likely savings, construction impacts and practical value. Water use will be measured where practicable, with any proxy estimates clearly identified.

2.2. WASTEWATER MANAGEMENT

MCP directs sewage to septic tanks. Greywater from kitchen and bathroom drains is routed directly to nearby banana and passion-fruit plantations grown for our own consumption. Excess water flows to low-lying areas on the property where we grow bamboo, which we harvest for building materials.

We will document the drainage network, septic tanks, treatment steps and final discharge or infiltration areas. Inspection and servicing arrangements will reflect system condition, occupancy and site requirements. Records will identify any desludging and the destination of removed material.

Greywater reuse will be assessed for its suitability to the receiving area, the products entering it, and the risk of runoff or contamination. Septic systems and plant irrigation will not be described as complete treatment without supporting evidence. Problems identified during the review will be assigned corrective actions.

2.3. Solar power and energy use

MCP plans to install 67 solar panels rated at 500 watts each, giving a total panel capacity of 33.5 kilowatts peak (kWp). Installation is expected in late 2026 or early 2027, subject to contractor availability.

Much of MCP's heavier electricity demand occurs during daylight, including diving compressors, office air conditioning and occasional welding or other power tools. This pattern is expected to allow substantial use of solar electricity on site and reduce electricity purchased from the grid. The size of the reduction will be measured after commissioning.

We will retain installation and commissioning records, monitor solar generation and grid purchases, and record exports where applicable. Energy comparisons will account for changes in occupancy and operations. We will maintain major equipment and include relevant vehicle, vessel, generator and cooking fuels in our assessment of energy use. Renewable-electricity claims will be based on documented supply arrangements.

3. Food and waste



3.1. Food policy

MCP's standard meals are vegetarian. We do not serve seafood, beef or lamb. Chicken or pork is served only on Saturdays and only to people who specifically request it. This approach makes lower-meat meals the default and allows the kitchen to plan meat portions from actual requests.

MCP maintains a small pigsty and a large chicken coop. We are self-sufficient in eggs for most of the year. We also grow fruit for our own consumption, including bananas, passion fruit, mangoes, pineapples and mulberries.

We plan purchases and portions to reduce avoidable waste while providing adequate meals. Food decisions will consider the type of food, how it is produced, its transport and storage requirements, packaging, affordability and suitability for the menu. We support appropriate local suppliers without treating local purchase alone as proof of low environmental impact.

We use durable, washable food containers for storage. We maintain suitable containers and lids, use safe storage and cleaning procedures, and replace items when they are no longer fit for food use.

No food leftovers enter MCP's general waste stream. All food remaining from preparation and meals is fed to our pigs or chickens. We will maintain this practice while continuing to plan purchases and portions so that avoidable surplus is kept low.

3.2. Purchasing and equipment

We will favour suitable, durable and repairable products, considering spare parts, service life, packaging, maintenance and disposal. Usable equipment will be retained where safe and effective. Bamboo grown on the property provides a source of building materials.

Where practical, we will use reusable transport and storage containers, refill systems, returnable packaging and appropriately sized bulk purchases. We will avoid buying quantities that create spoilage or unnecessary stock. The choice of cleaning products will consider effective dosing, their intended use and wastewater arrangements.

3.3. WASTE PREVENTION AND DISPOSAL

We will prevent waste where possible, reuse appropriate materials and segregate the remaining streams according to the outlets that actually accept them. The waste record will identify recipients and disposal routes, including rejected material and residual rubbish.

Batteries, electronic equipment, used oils, chemicals and other wastes requiring special handling will be stored and transferred through suitable arrangements. We will check those arrangements and retain available collection or transfer evidence.

Waste produced by the campus will be recorded separately from material collected on beaches, underwater or through other conservation activities. We will distinguish material collected, sorted, sent to a recycler and confirmed as accepted for recycling. We will state the period and basis of any published quantities.

Occasional activities using recovered materials may be included in children's camps or environmental education. We will describe their educational purpose and will not count them as a significant waste-management outcome without evidence of meaningful quantities and use.

4. Climate and reporting



4.1. Diving and base

Our diving and field procedures will address equipment control, reef contact, anchoring, wildlife disturbance and retrieval of equipment. Sampling and conservation interventions will follow applicable permissions and approved methods. Green Fins guidance will inform training and practice.

Base work will consider habitat protection, erosion, runoff, pesticides and construction impacts. Fuel and chemicals will be managed to prevent releases, including during severe weather. Staff will have a clear route for reporting environmental incidents and recording corrective actions.

4.2. Travel and operational emissions

We will inventory operational energy and relevant travel, identifying staff travel and volunteer journeys separately. Flight estimates will use a documented method and actual routes, connections and cabin class where known. Assumptions and missing information will be disclosed.

We coordinate transport and combine trips where practicable. Conservation benefits will be reported alongside travel impacts and will not be deducted from emissions without a defensible accounting basis.

4.3. Measurement and communication

The annual update will cover energy, available water-use information, wastewater, waste destinations, food purchasing and the handling of leftovers, travel and the action register. Results will identify their period, measurement or estimation method, and limitations.

We will publish absolute quantities and useful measures of efficiency, such as electricity per occupied person-day, with consistently defined denominators. Clean-up waste and habitat carbon benefits will remain separately identifiable.

Staff and volunteers will receive practical guidance. Public information will distinguish achievements, continuing practices and plans. The website and downloadable policy will be updated together when material claims change.

5. Mangroves and volunteer carbon impact

5.1. Our mangrove planting

MCP has planted mangroves since 2015 at local planting sites including:

- Sitio Polo (commonly called Turtle Island)
- Tambobo Bay
- Siit Bay
- Panaon
- Manjuyod
- Bais
- Bacong
- Santa Catalina

Our records show around 30,000 propagules planted between 2015 and 2020, and a further 1,300 between 2024 and 2026. Propagules were selected from species suited to the conditions of each planting area. We estimate that around half have survived which gives roughly 15,650 established trees, about 15,000 of them from the 2015 to 2020 plantings. This survival rate is an estimate and has not been confirmed by a field count.

Growing mangroves remove carbon dioxide from the atmosphere and store carbon in their wood, roots and the soils beneath them. Protecting existing mangroves also helps keep stored carbon in place. These climate benefits add to the value of mangroves as nursery habitat for fish and invertebrates, and as natural protection for coastal communities.

5.2. Volunteer travel emissions

Flights to and from the Philippines, and domestic flights to Dumaguete (DGT) are the largest single source of emissions linked to our volunteer programme. For 2026 we estimated the flights of our volunteer arrivals using UK Government (DEFRA) 2026 conversion factors. We used great-circle distances with an 8% routing uplift, typical connections from each volunteer's home country, and economy class throughout. Nationality was stated for 62% of our volunteers and inferred for 38%. One volunteer with no known origin was excluded.

In October 2026, we asked current volunteers which cabin class they booked for their travel to MCP.

Flight class	Percentage
Economy	81%
Premium Economy	13%
Business	6%
First Class	0%

Premium cabins take up more space on the aircraft, so the DEFRA factors assign them higher emissions, roughly 1.6 times economy for premium economy and 2.9 times for business on long-haul flights.

Applying this mix raises our original economy-only estimate by about 19% to around 360 tonnes excluding radiative forcing, or around 610 tonnes including it. That is an average of about 2.1 tonnes per volunteer, or about 0.27 tonnes per volunteer-week for a typical eight-week placement. Flight emissions are the same whatever the length of stay, so longer placements carry far less carbon per week of conservation work.

These figures are estimates built from country-of-origin averages rather than exact ticket data. The cabin class mix comes from a sample of current volunteers in October 2026, so a small number of business-class travellers has a noticeable effect on the result. Emissions from volunteers' time on site are discussed in Sections 5.4 and 5.5.

To reduce the travel footprint at its source, we will continue to encourage longer placements, as well as collect cabin class data from future volunteers to improve our estimates.

5.3. Comparing planting with travel emissions

We have made an indicative estimate of the carbon held in the living biomass of the surviving 2015 to 2020 trees. It uses published allometric equations for Southeast Asian mangroves (Komiyama et al., 2005) and the IPCC default carbon fraction of 0.47. Since trunk sizes have not yet been measured, we assumed trunk diameters of 4 to 8 cm for trees aged six to eleven years. The more recent plantings are too young to contribute meaningfully and are excluded. Soil carbon is also excluded.

Measure	Estimate
Volunteer flights, 2026 excl. radiative forcing (adjusted for cabin class)	about 360 t CO_2e
Volunteer flights, 2026 incl. radiative forcing (adjusted for cabin class)	about 610 t CO_2e
Carbon held in surviving 2015-2020 trees, accumulated to 2026	about 270 to 1,400 t CO_2 (central estimate about 700)
Average yearly uptake by those trees to date	about 30 to 165 t CO_2 per year (central estimate about 80)

On these assumptions, our surviving trees currently take up the equivalent of roughly 8% to 45% of one year's volunteer flight emissions. The central estimate is a little over a fifth.

We do not treat this as an offset, and we do not deduct it from travel emissions. The survival rate and trunk sizes are not yet measured. We have not yet established the planted area or the baseline, meaning what would have grown there without planting. The stored carbon could also be lost to typhoons, cutting or disease. Timing matters too: flight emissions happen immediately, while the trees take up carbon gradually over decades. We will report mangrove carbon alongside travel emissions, and keep the two separately identifiable, as set out in Sections 4.2 and 4.3.

5.4. Energy use on base compared with home

With few exceptions, volunteers live in shared dormitories of four to six people, cooled by fans rather than air conditioning. Each volunteer has a plug socket in their locker for charging phones, laptops and cameras. Televisions and other entertainment equipment are shared in communal areas rather than provided per person. This arrangement means a volunteer's personal electricity use on base is likely to be lower than at home. Many volunteers would otherwise use personal air conditioning or heating, large televisions, gaming computers, tumble dryers and other high-demand appliances.

Several factors limit how far this difference can be claimed as a saving. First, a volunteer's home usually keeps running while they are away. Other household members, refrigerators, heating and devices on standby continue to draw power, so only the volunteer's own share of home use is avoided. Second, the carbon content of electricity differs between locations. The Luzon-Visayas grid relies heavily on coal and has a higher emission factor per kilowatt-hour than the grids in many of our volunteers' home countries, particularly in Scandinavia and France. A kilowatt-hour used on base can therefore produce more emissions than the same kilowatt-hour at home. Our planned solar installation (Section 2.3) is expected to reduce this difference. Third, a fair comparison must include each volunteer's share of base-wide energy use, such as diving compressors, office equipment, kitchen appliances, and vehicles, not just dormitory use.

We expect the difference between home and base energy use to be small compared with flight emissions. We will not deduct it from travel emissions or describe it as a saving without measured data. Once electricity use per occupied person-day has been established (Section 4.3), we will compare it with published per-person household electricity figures for our main source countries. We will apply the relevant grid emission factors to both, and report the result with its assumptions and limitations.

5.5. Diet on base compared with home

Meals at MCP are prepared on base by our kitchen staff using local produce. Standard meals are vegetarian, and we do not serve beef, lamb or seafood. A chicken or pork option is available at Saturday dinner for those who request it (Section 3.1). For most of their stay, volunteers therefore eat a largely vegetarian diet, regardless of what they eat at home.

In October 2026 we asked current volunteers about their usual diet at home.

Diet at home	Percentage
Vegan	6%
Vegetarian	19%
Low meat eater (once per week)	28%
Moderate meat eater (once per day)	19%
High meat eater (multiple meals per day)	25%
Carnivore (all meals contain meat)	3%

To estimate the effect, we used dietary emission figures from a study of over 55,000 adults in the UK (Scarborough et al., 2014). It found average emissions of 2.89 kg CO_2e per day for vegans and 3.81 kg for vegetarians, compared with 4.67, 5.63 and 7.19 kg for low, medium and high meat-eaters.

We treated the MCP diet as equivalent to a vegetarian diet, and assumed no change for volunteers who are vegan or vegetarian at home. We matched volunteers who eat meat about once a day to the study's medium meat-eaters, and those who eat meat at several or all meals to its high meat-eaters. Volunteers who eat meat about once a week already eat a diet close to MCP's, so we counted their reduction as between zero and the study's low meat-eater figure.

On this basis, the average reduction across all volunteers is about 1.3 to 1.5 kg CO_2e per day on base, or roughly 70 to 85 kg CO_2e over an eight-week placement. That is about 3% to 4% of the average volunteer's flight emissions. If all 2026 volunteers stayed for eight weeks, the total would be about 12 to 15 tonnes CO_2e.

These figures are estimates with clear limitations. The study reflects UK diets and food supply, so production methods, transport and food losses in the Philippines will differ. The Saturday meat option means the MCP diet is not fully vegetarian, so the estimate slightly overstates the reduction. Volunteers may also eat meat or seafood off base on free days.

Our use of local produce helps reduce packaging and transport, but local purchase alone does not prove low impact (Section 3.1). The diet data comes from a sample of 32 volunteers, using self-reported categories that do not match the study's groups exactly. Matching volunteers who eat meat at every meal to the study's high meat-eaters probably understates their usual emissions.

We will report this as an estimated reduction in dietary emissions during volunteers' stays, which will not be deducted from travel emissions. We will continue to collect diet information from future volunteers to improve the estimate.

6. Improvement register

These are proposed implementation priorities for the first year.
The Director will confirm individual leads, resources and milestones at adoption.
Role descriptions below indicate functions rather than new posts.
Timing runs from the policy's effective date unless a calendar period is stated.

Action	Owner	Proposed Timing	Measurements
Review wastewater and livestock waste	Director and facilities lead	Within 3 months	• Drainage map and treatment steps documented • Crop and bamboo receiving areas assessed • Septic records and livestock-waste arrangements reviewed
Install and monitor solar	Director and installation contractor	Late 2026 / early 2027	• Commissioning record • Operating capacity confirmed • Monthly generation and grid-purchase records after installation
Establish resource baselines	Finance and facilities functions	Start within 1 month; review at 3 months	• Existing electricity and fuel records assembled • Water measurement assessed • Occupancy and activity recorded for comparison
Verify waste destinations	Operations lead	Within 3 months	• Current waste streams and recipients documented • Residual waste route confirmed • Camp and clean-up records separated
Maintain food surplus prevention and livestock use	Kitchen lead	First sample within 3 months	• Sample of meal numbers and food fed to livestock • Saturday request process checked • Practical purchasing or portion adjustments recorded
Pilot travel reporting	Administration with science support	Within 6 months	• Routes and reporting boundary documented • First sample estimate with assumptions • Cabin class and home diet data collected from volunteers

Action	Owner	Timing	Measurement
Review and publish progress	Director	Semi-annual checks; annual public update	• Named owners and resources • Completed and delayed actions recorded • Policy and website claims reconciled.

The first year should establish reliable baselines and complete feasible improvements. Percentage-reduction targets will be set when the starting position and measurement method are sufficiently clear.

Any urgent pollution problem found during the initial reviews will be addressed promptly rather than waiting for the annual review.



Marine Conservation Philippines

Thank You

Please contact us if you would like any additional information, or require assistance with any conservation activities

FOLLOW US:

@marineconservationphilippines

marineconservationphilippines.org