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1.0 INTRODUCTION

Volume 3 presents the Zoning Guidelines for the Subic Bay Protected Area (SBPA). The guidelines provide advice on the permitted and prohibited uses and activities for the various management zones and sub-zones that comprise the spatial area of the SBPA.

As such the guidelines provide a geographic basis for control and enforcement of activities and behavior within the SBPA.

1.1 Background

Management zones provide a spatial framework for protecting the SBPA through the application of use regulations (permitted and prohibited uses) presented in management zone tables. These serve as zoning guidelines.

The management zone tables provide a guide to the community uses and management activities that are appropriate to certain areas and determine which management objectives have priority. The zoning guidelines also provide ‘performance criteria’ permitted uses must comply with, and which present conditions of authorization (e.g. for development) and granting of permits, agreements and/or concessions.

The zoning guidelines are initial versions and should, until formal adoption by the PAMB (when commissioned), be viewed as draft guidelines. The final adopted guidelines will require further consideration of the practical issues that will only become apparent in the context of other strategic decisions yet to be taken within the SBMA.

Furthermore, for practical operational purposes the zoning guidelines, and even the management zones themselves, will require either constant or regular review (every 3 or 5 years). This is necessary to ensure the SBPA and the PAMB are able to respond to changing influences and conditions (resource condition, land use change, stakeholder requirements, environmental protection imperatives, changing technology, etc). The important requirement is for a secure and reliable process to be established to allow ordered changes to be made, at an appropriate rate.

1.1.1 Scope of the Zoning Guidelines

The description, justification and guidelines for the various management zones are presented in Volume 2, Chapters 4 and 5. The management zone classification is repeated in this volume. The zoning guidelines consist of a statement of objectives for the various zones, definition of terms used, and zoning regulations/prescriptions.

1.1.2 Vision Statement and Mission

The Subic Bay Protected Area vision statement is as follows:

“Healthy ecosystems conserved and enhanced to provide the full complement of human use and ecological values at levels that are sustainable for current and future generations; planned and managed with stakeholders involvement.”

The PAMB mission statement is as follows:

“Ensure ongoing custodianship over the natural resources and ecosystem of the Protected Area, to ensure that the rainforest and marine ecosystem is preserved intact, in perpetuity, for the benefit of all future generations. In so doing the PAMP will only allow such activities, uses/facilities and changes to the Protected Area that are compatible with the prime directive of ecosystem/habitat protection and that are sustainable without loss of, or impact on, any portion/aspect of the natural environment of the Protected Area. The PAMP will also endeavor to ensure the educational, scientific and other natural ecosystem related values of the park are promoted locally, nationally and internationally, for the benefits of global society and international biodiversity conservation.”

1.1.3 Statement of Policy

The SBPA and the tool for managing it, the PAMP, are both complex. In addition to the Vision and Mission Statements, a statement of policy to guide direction and intent of actions is presented.

“The zoning guidelines are formulated as a basis for making decisions and judgements concerning the management of all activities and developments within the PA. As such they are supported by, and seek to integrate relevant regulations provided under the provisions of various other Acts/Statutes and must be adhered to. The SBMA, PAMB, DENR and all third party participants (joint partners, collaborative ventures, and stakeholders) with recognized interests/activities within the area of the PA are bound by the zoning guidelines.

The policy requires that the SBMA/PAMB implement the zoning guidelines with regard to the NIPAS Act, and all Philippine legislation concerned with the protection of wildlife and the environment.

This policy requires that the management actions of the SBMA and the adjacent local jurisdictions reflect the intentions of the zoning guidelines, and that for matters relevant to the zoning guidelines, will be coordinated by the PAMB.

This policy requires that all organizations involved in any way with the SBPA, (local jurisdictions, commercial interests, stakeholders) will abide by the zoning regulations.”

1.2 Objectives

The prime objectives of the zoning guidelines are provided to give further direction and guidance to the PAMB in the implementation of the PAMP. The objectives are as follows:

1.2.1 Natural Environment

- Conserve, protect and rehabilitate the natural habitats and associated biodiversity of the PA.
- Protect and ensure the continued occurrence of non-biological natural processes operating within the PA upon which all biological values of the PA and the wider region depend.
- Conserve and protect the representative vegetation associations/complexes (terrestrial/aquatic) throughout the PA.
- Protect and preserve the natural habitats of each zone.
- Protect rare, threatened, near threatened and other important species of flora and fauna contained in all zones.
- Maintain viable populations of threatened species within the PA and contained in different management zones.
- Protect the surface drainage catchments and subcatchments contained in the PA and ensure that drainage/flow regimes consistent with natural conditions are maintained.
- Achieve the restoration of degraded watersheds and natural habitats through both active management and natural rehabilitation at a rate specified in the PAMP programs (Vol. 4).
- Reduce the incidence of illegal activities by 80% over the first 5-year period of the PAMP.
- Reduce the incidence of fire by 75% over the first 5-year period of the PAMP.
- Reduce the incidence of illegal fishing activity and techniques by 90% in the first 5-year period of the PAMP

1.2.2 Social Environment

- Achieve the progressive involvement of organized communities and stakeholders in the PA activities in the first 5-year period of the PAMP.
- Strengthen the management capabilities and management contribution of the Aeta in the first 5-year period of the PAMP.
- Increase the environmental management/protection understanding and capability of all active community and commercial participants in the PA in the first 5-year period of the PAMP.

- Ensure that appropriate, representative community organizations are properly represented in the PAMB management committees within 2 years of the operation of the PAMP.
- Ensure that all tenure issues and disputes are resolved in the first 5-year period of the PAMP.
- Remove all inappropriate activities and uses from within the principal management zones of the SBPA within the first 5- to 10-year period of the PAMP.
- Coordinate with the SBMA and local jurisdictions in the SBFZ (and wider region) to locate incompatible land uses and/or developments existing within the PA to more appropriate external locations.
- Formulate and implement community resource management plans in the first 5-year period of the PAMP.

1.2.3 Economic Environment

- Encourage the establishment of ecologically sound commercial and non-commercial activities within the appropriate zones of the SBPA (rate to be determined) over the first 5- to 10-year period.
- Establish and promote the benefits of the SBPA to the regional (SBFZ) economy, with evidence gained from quantitative data, in the first 5- to 10-year period of the SBPA.
- Encourage, establish and promote a range of ecotourism activities operating in premises both within and external to the SBPA that provide a broad range of visitor opportunities.
- Encourage development and operation of a broad range of ecotourism options within the SBPA that suitably represent/exploit the diverse range of environments, experiences and unique attributes found in the SBPA.
- Ensure the identification and implementation of well regulated, environmentally sound and economically beneficial/viable alternative livelihood strategies, both within and external to the SBPA, within the first 5-year period of the PAMP.
- Formulate management prescriptions for various zones to ensure that commercially based activity is ecologically sustainable and well within the carrying capacity of the site/location.
- Ensure that all commercial activities established within the SBPA (excluding Special Use Zones) are subject to non-negotiable ‘sunset clauses’ (terminations) within agreed time-frames, executed on the basis of non-performance, non-compliance, zoning change, or policy changes at the discretion of the PAMB and validated by an independent third party.
- Establish a market system that regulates use of the overall PA resources at appropriate levels and avoid conflict and overuse.
- Ensure compliance by all community and commercial interests operating within the SBPA with management zone guidelines, within the first five years of the PAMP

1.2.4 Administrative Environment

- Ensure that PAMB staff is fully capable of implementing and enforcing management zone regulations within the first three years of the PAMP.
- Ensure effective, integrated and coordinated park management of the various management zones within the first three years of the PAMP.
- Ensure coordinated administration and collection of fees, rents, rates, levies, bonds, and agreed income from commercial activities and services within the PA in an efficient, timely and accountable manner and to take effect within the first year of such agreements being set in place.
- Ensure that all stakeholders are aware of the management plan and its provisions and understand their roles in its implementation within the first 2 years of the PAMP and within 1 year of the stakeholder agreement being set in place.
- Establishment of linkages with national and international agencies and organizations for technical assistance and financing within the first year of the PAMP.

1.3 Definition Of Terms

A number of terms are used in a document as complex and broad in scope as the PAMP. These are defined below.

Stakeholders: individuals, groups or organizations having an interest (potential or realized) in some dimension or aspect of the Protected Area.

Participants: any individual, group or organization partaking in an activity, about to partake in an activity, or having partaken in an activity.

Community: an identifiable populace. The SBFZ resident population, or any sub-set of that population, forming an identifiable social grouping, whether on geographic, demographic, ethnic, or occupational/activity grounds.

Organized community: a community (as above) that has formed itself into a coordinated, organized group for the purposes of being consulted with, or taking proactive steps in engaging with the outside world or on any matter of concern to that community.

Commercial interests: any interest of a commercial or pecuniary nature.

Conserve: to retain and maintain an environmental attribute through active involvement/intervention, allowing that attribute to alter according to accepted, agreed parameters of change.

Protect: to isolate an environment or attribute from external influences or change by creating perimeter barriers, without intervening or manipulating the protected attribute/area itself.

Restore: to reinstate or bring back. Restoration of environments usually refers to retrieval of environmental conditions as a prerequisite for further action (e.g. wildlife rehabilitation, habitat management, etc)

Rehabilitate: to take, allow, or encourage the return of pre-existing environmental conditions or qualities, either passively by allowing natural colonization of flora and fauna, or by active management (seeding, selective manipulation of populations, catch and release, etc.).

Fire prevention/pre-suppression: to prevent the occurrence of fire before it occurs through management actions (e.g. strategic reduction in fuel loads, cool burns, installing fire-breaks, restricting fire inducing activities, etc.).

Fire control/suppression: to control and extinguish fires and to prevent them from re-igniting; commonly referred to as ‘fire-fighting’.

Principal management zones: the main management zones prescribed in the PAMP. These zones are the Core Ecological, Sustainable Use, Habitat Protection, Recreation, Multiple Use, Special Use, and Buffer.

Carrying capacity: the capacity of a land unit, site, or area to accommodate a specified use or condition, or combination of uses/activities, without deterioration. Land units are usually geographically defined on the basis of selective criteria, and invariably include soil type, terrain and vegetation cover.

Ecologically sustainable: the capacity for an activity to occur or site to exist in such a way that any associated ecology/ecosystem is able to maintain itself, ongoing, without being diminished.

Nature based recreation: recreation obtaining from some aspect of the environment; for example, trekking, environmental interpretation, rock climbing, sea or river kayaking, scuba diving, etc. Nature based tourism have two major sub-sets: ecotourism, and adventure tourism.

Ecotourism: Essentially, it is a recreational tourism the prime objective of which is the appreciation and ‘experience’ of nature and natural environments in such a manner that the environment is not impacted.

Performance standards: a set measure of performance to which any given activity, function or development should comply; often specifies a minimum acceptable standard or mandatory requirement.

Best practice: a level of performance or a technique that is considered to be as good or as proficient as one can reasonably achieve – ‘state of the art’ practice.

2.0 MANAGEMENT ZONES

This Chapter describes the SBPA Management Zones and provides a summary of the corresponding permitted and prohibited activities for each management zone.

As explained in Volume 2 of the PAMP, the SBPA management zones were initially derived from the NIPAS Act guidelines. However, strict translation of NIPAS management zone categories were found not appropriate to the unique circumstances obtaining in the Subic Bay Watershed where high land use complexity exists.

Consequently, the following management zones are designated in the Subic Bay PA (Figure 1).

Protected Area Zones:

- Core Ecological Zone (Terrestrial and Marine)
- Sustainable Use Zone (Terrestrial and Marine)
- Habitat Protection Zone (Terrestrial and Marine)
- Restoration Zone (Terrestrial and Marine)
- Recreation Zone (Terrestrial and Marine)
- Multiple Use Zone
- Special Use Zone
- Buffer Zone

In addition, a number of subsidiary or minor zones, are designated. These are as follows.

Protected Area Sub-Zones:

- Turtle Nesting Sub-Zone
- Forest Ecosystem Corridor Sub-Zone
- Swimming Sub-Zone
- Beach Sub-Zone
- Special Use Landscape Protection Sub-Zone
- Special Use Park Infrastructure and Administration Sub-Zone

Table 1 shows the comparison of Zones and Sub-zones.

Figure 1. PA Management Zones and Sub-Zones

Table 1. Comparison of Zones and Sub-Zones

NIPAS ZONES	SUBIC BAY PAMP MANAGEMENT ZONES	SUBIC BAY PAMP SUB-ZONES
<i>Strict Protection</i>	<i>Core Ecological (terrestrial, marine)</i>	
<i>Sustainable Use</i>	<i>Sustainable Use (terrestrial, marine)</i>	<i>Turtle nesting beach Forest Ecosystem Corridor</i>
<i>Restoration</i>	<i>Restoration</i>	
<i>Habitat Management</i>	<i>Habitat Protection</i>	
<i>Multiple-Use</i>	<i>Multiple-use</i>	
<i>Buffer</i>	<i>Buffer</i>	
<i>Cultural</i>	<i>(not applicable)</i>	
<i>Recreational</i>	<i>Recreation (terrestrial, marine)</i>	<i>Beach Swimming</i>
<i>Special Use</i>	<i>Special Use</i>	<i>Vegetation protection Park infrastructure and administration</i>
<i>Other</i>		

2.1 Permitted and Prohibited Activities

Appropriate activities within the Management Zones are initially indicated by a list of permitted and prohibited activities/uses. This qualifies to a large extent the intentions of the management zones and the degree to which other uses or activities may or may not be acceptable.

Table 2. Management Zones – Permitted and Prohibited Activities

Management Zone	Permitted	Prohibited
Core Ecological Zone – Terrestrial	<ul style="list-style-type: none"> • science research and monitoring • Aeta and science purposes • agreed and authorized traditional indigenous peoples’ activities 	<ul style="list-style-type: none"> • passive recreation • active recreation • landscape/landform modification • development of any kind • placement of any permanent fixture

Management Zone	Permitted	Prohibited
		<p>(emergency beacon, survival station, indigenous peoples structure excepted)</p> <ul style="list-style-type: none"> • destruction or removal of natural vegetation
<p>Core Ecological Zone – Marine</p> <p><i>Note: Fishing vessels of over 3 gross tons are considered commercial fishing vessels.</i></p>	<ul style="list-style-type: none"> • Restricted preservation zones • science research • ecological base-line monitoring • guided underwater scuba tours • marine micro-photography • sailing (dinghy, windsurfer) 	<ul style="list-style-type: none"> • anchorages (permanent or temporary) • sports fishing • spearfishing • unsupervised scuba diving • power boating in waters less than 5 meters deep (under keel) • sullage discharge • navigation channels for vessels over 3 tons
<p>Sustainable Use – Terrestrial</p>	<ul style="list-style-type: none"> • passive recreation: walking, picnicking, photography and other appreciative pursuits • active recreation: ridge climbing, tree climbing/absailing, mountain biking, forest, trekking, botanical tours, nature photography, equestrian activities (trail riding, cross country), etc • approved structures associated with authorized ecotourism (trails, pedestrian bridges, overhead canopy walkways, areal tramways). • nature based sporting events: orienteering, marathons, triathlons 	<ul style="list-style-type: none"> • permanent development (structures) unless part of an approved ecotourism facility or experience (e.g. boardwalk, trail, look out, overhead canopy walkway, etc.) • landscape or landform modification (except installing trails, management access tracks, etc) • any sports or active recreation pursuit that is environmental destructive, including disturbance of fauna, damage to vegetation, or that causes soil erosion.

Management Zone	Permitted	Prohibited
	<ul style="list-style-type: none"> • Indigenous peoples’ traditional activities: hunting, gathering forest materials, ritual/ceremony • Other activities: jungle survival training, military jungle training (on foot only) subject to EIA and specific controls • Developed ecotourism node (e.g. Hill 394) – subject to EIA and specific performance criteria, established site guidelines 	
Sustainable Use – Forest Ecosystem Corridor	<ul style="list-style-type: none"> • scientific research • nature study • supervised nature based recreation according to an approved plan containing detailed performance specifications, limited to specific sites or forest areas • other environmentally benign activities that have zero environmental impact subject to PAMB approval 	<ul style="list-style-type: none"> • unsupervised, informal recreation • sports of any kind • all development (except trails, pedestrian bridges and overhead canopy walkways appropriately designed and constructed)
Sustainable Use – Marine	<ul style="list-style-type: none"> • unrestricted swimming and non-motorized water sports • unrestricted scuba diving and snorkeling • unrestricted small dinghy sailing, and sea kayaking/canoeing • fixed keel yachting permitted in designated 	<ul style="list-style-type: none"> • all extractive activities • large vessels (+3 tons), except in designated navigable channels accessing berths/docks • sports fishing • spear fishing • power boat racing • removal of coral, reef fish, benthic material

Management Zone	Permitted	Prohibited
	<ul style="list-style-type: none"> • navigable zones • power boat usage permitted in designated navigable zones • water skiing, jet skiing and para-gliding allowed in designated zones only • lure and fly catch and release fishing • anchorages in designated zones or buoys only 	<ul style="list-style-type: none"> • mining (sand, limesand, limestone, etc) • aquaculture or aquaculture structures • farming/structures • drop anchorage
Turtle Nesting Beach (SUZ-M)	<ul style="list-style-type: none"> • pedestrian access only • beach recreation activities (except during turtle nesting season) 	<ul style="list-style-type: none"> • vehicle access • disturbance of turtles • removal of turtle eggs • temporary or permanent structures
Restoration – Terrestrial	<ul style="list-style-type: none"> • earthworks • drainage works • forward planting • demolition of existing structures and removal of foreign materials and site remediation (of toxic substances) • construction and installation of ‘improvements’ according to approved protected area management plan • reforestation 	<ul style="list-style-type: none"> • continuation of degrading activities • any activity not in accordance with approved management plan and/or in conflict with restoration objectives
Restoration – Marine	<ul style="list-style-type: none"> • active management to prevent or negate degrading influences • activity to restore habitat or biological values • monitoring and science research, including 	<ul style="list-style-type: none"> • any environmentally degrading activity • dumping of wastes (garbage and sewage) • anchoring in non-designated areas • aquaculture

Management Zone	Permitted	Prohibited
	<p>experiments on artificial underwater structures.</p> <ul style="list-style-type: none"> • ‘marine’ human use activities compatible with restoration activities • mariculture activities • reseeding 	
Habitat protection – Terrestrial	<ul style="list-style-type: none"> • monitoring • proactive wildlife management • land management • scientific research • fauna observation and wildlife interpretation 	<ul style="list-style-type: none"> • passive recreation, except on formalized interpretation trails, board walks, etc • active recreation • sports activities • any development (fixtures or structures) not directly associated with habitat management or wildlife observation (as in permitted uses)
Habitat protection – Marine	<ul style="list-style-type: none"> • scientific research and monitoring • active habitat management • swimming and snorkeling • traditional indigenous peoples activities • supervised scuba diving • non-powered (engine or sail) small boats activity (dinghy, kayak, canoe, row boat) in open water zones only • launches with engines under 50hp, in minimum water depth of 1.5 meter, with maximum speed of 8 knots (only for purposes 	<ul style="list-style-type: none"> • all extractive activities • water sports involving motor powered craft (speed boats, jet skis, launches) • sports fishing, • spearfishing, • turtle eggs collecting • harvesting of ducks and other shore birds • mining • dumping of wastes (garbage, sewage, etc.) • drop anchorage • restriction on all boat/water craft activity within 200 meters of nesting zones (shoreline) during breeding season.

Management Zone	Permitted	Prohibited
	<p>of access and management of approved activities and facilities – e.g. Ocean Adventure)</p>	
Recreation – Terrestrial	<ul style="list-style-type: none"> • Passive and active recreation nodes with a range of facilities • Recreation and sports venues of varying size and sophistication (within already developed sites where no additional land clearing is required and deemed suitable) • ‘Design/site sensitive’ tourism nodes (activity, accommodation) based on natural resource interest (e.g. bat viewing, marine exploratorium, jungle setting nature-based tourism (with and without accommodation, etc) • Commercial tourism facilities designed to benefit from the Protected Area setting and do not detract from landscape/scenic, and natural PA environmental values 	<ul style="list-style-type: none"> • commercial developments incidental or unrelated to specified park use zones and/or park management objectives (e.g. manufacturing, agriculture, silviculture, aquaculture, fabrication, mining, timber/forestry, infrastructure, depot and storage, etc) • commercial, mass tourism development that is unrelated to the purpose and function of the SBPA
Beach (RZ-T)	<ul style="list-style-type: none"> • pedestrian access • beach recreation activities 	<ul style="list-style-type: none"> • vehicle access • built or permanent • incidental boat launch • dumping of wastes • modification of the natural beach landform, or near shore marine

Management Zone	Permitted	Prohibited
		environment (i.e. abutments, revetments, groynes, channels, artificial pools, etc)
Recreation – Marine	<ul style="list-style-type: none"> • swimming • yacht and dinghy sailing • canoeing and kayaking • rowing (sculling etc) • paragliding • scuba diving • sports fishing • ‘catch and release’ competition fishing • anchoring in designated anchorages 	<ul style="list-style-type: none"> • spear fishing • power boat racing • all commercially extractive activities (commercial fishing, mining) • drop anchoring • aquaculture or mariculture installations
Swimming (RZ-M)	<ul style="list-style-type: none"> • swimming within 50 meters of the shoreline • snorkeling to within 100 meters of the shoreline 	<ul style="list-style-type: none"> • swimming beyond 50 meters from the shoreline • use of motorized recreational vehicles (jet skis, speedboats, launches, etc) • removal or disturbance of any materials (marine benthos, or beach materials)
Multiple Use	<ul style="list-style-type: none"> • indigenous peoples’ traditional activities (forest materials gathering, hunting, forest species planting/husbandry, ritual/ceremony, etc) • specifically identified and approved alternative livelihood activities for indigenous people and other nominated groups • passive and active recreation (trekking, 	<ul style="list-style-type: none"> • urbanization • commercial retailing • manufacturing (light, heavy, natural resource processing) • infrastructure • use of explosives, chemicals and fine meshed nets for fishing • other commercial activity unrelated to SBPA objectives and function

Management Zone	Permitted	Prohibited
	<p>walking, equestrian/trail riding)</p> <ul style="list-style-type: none"> • natural area sporting activities (orienteering, mountain bike racing, etc) • reforestation and land rehabilitation works as approved by the PAMB 	
Special Use	<ul style="list-style-type: none"> • historically inherited land use activities that can not be terminated or removed despite incompatibility with PAMP objectives (airport, port functions, storage, depots) • historically inherited sites and activities that are compatible with PAMP objectives (e.g. commercial tourism nodes, golf courses, equestrian centres, residential precincts) • mining/basic raw material quarrying only as specified in existing approvals/licenses 	<ul style="list-style-type: none"> • any use with either air pollution/emission contours or risk and hazard contours that are unacceptable for protected area/national park/human use and human presence localities (by accepted international standards) • dumping of wastes into the marine environment
Vegetation Protection	<ul style="list-style-type: none"> • existing residential and holiday accommodation development • appropriate landscape modification 	<ul style="list-style-type: none"> • removal of large (deep rooted) tree species • removal of natural shrubbery vegetation cover that constitutes visual screening of airport facility
Park Infrastructure and Administration	<ul style="list-style-type: none"> • park administration center activities • park visitor facilities (visitor conveniences, visitor parking, 	<ul style="list-style-type: none"> • incidental uses or activities not connected to park administration and management • activities unrelated to

Management Zone	Permitted	Prohibited
	<p>interpretation center)</p> <ul style="list-style-type: none">• interpretation trails• education/training center• park infrastructure and support (depot and supplies, plant nursery, etc)	<p>PA visitor services or recreation</p>

3.0 USE REGULATIONS

This Section presents the use regulations that apply to each management zone.

3.1 Preamble to the Use Regulations Tables

Tables 3 to 19 provide guidance on what activities are acceptable in each zone and sub-zone and the management actions or approaches that should be applied.

This information is intended to guide the PAMB in the overall management approach that is intended for the zone (or sub-zone) in question, indicating broad emphasis, objectives, tasks and activities. It is also intended to guide the PAMB in the preparation of more detailed action planning that is required, and the preparation of tools required to undertake the wider PA management role.

A comprehensive set of Action Plans is necessary to direct daily operations, particularly activities associated with administering and enforcing the Use Regulations, which is the core of the management plan. Action Plans detail the weekly/monthly tasks to be undertaken in the management of the SBPA and particularly the work of the professional staff, scientists and the rangers. Action Plans are very detailed, and will be prepared when the SBPA is operational.

3.2 List of Management Zones and Sub-zones

The following is the list of zones and sub-zones in the use regulation tables:

Core Ecological Zone – Terrestrial

- CEZ-T1: buffer area adjacent to Bataan Natural Park
- CEZ-T2: degraded sites in upper Binanga River
- CEZ-T3: vicinity of Hill 394

Core Ecological Zone – Marine

- CEZ-M1: marine and coastal foreshore, Chiquita Island and Binanga Pt.
- CEZ-M2: marine environment between Chiquita and Grande Islands

Sustainable Use Zone – Terrestrial

- SUZ-T1: Camayan and Binanga Pts. coastal fringe
- SUZ-T2: coastal landscape, Port Binanga to Triboa Bay
- SUZ-T3: forest ecosystem corridors

Restoration Zone – Terrestrial

- RTZ- T1: forest restoration area east of the PA, due south of Mt Santa Rita
- RTZ-T2: naval magazine

- RTZ-T3: Argonaut Highway site
- RTZ-T4: cleared sites near Camayan Point

Restoration Zone – Marine

Habitat Protection Zone – Terrestrial

- HPZ-T1: Cubi bat roost
- HPZ-T2: mangroves – Ilanin, Triboa, Batan, Binictican, Malawan rivers
- HPZ-T3: Ilanin and Binanga rivers

Habitat Protection – Marine

Recreation – Terrestrial

- REZ-T1: Naval Magazines
- REZ-T2: Marine Exploratorium
- REZ-T3: Grande Island
- REZ-T4: existing recreation developments – e.g. golf, recreation
- REZ-T4: miscellaneous industry sites
- REZ-T5: DJ Aerospace Warehouse facility

Recreation Zone – Beach (REZ-T)

Multiple Use Zone (MUZ)

Special Use – Zone (SPZ)

- SPZ-T1: vegetation protection
- SPZ-T2: park infrastructure and administration

3.3 Management and Use Regulation Tables

Table 3. Core Ecological Zone – Terrestrial (CEZ – T)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
Core Ecological Zone – Terrestrial (Figure 2)	<p>Management Emphasis is to retain intact existing environmental and ecosystem values of the zone with minimum-to-nil disturbance by human activity.</p> <p>Management Objectives are to achieve:</p> <ul style="list-style-type: none"> • biodiversity maintenance 	<p>science researches and purposes and specified traditional peoples’ (Aeta) practices.</p> <p>These uses are to be tightly controlled and monitored, and can only be allowed</p>

	<p align="center">Management Emphasis</p>	<p align="center">Acceptable Uses and Facilities – performance standards</p>
	<ul style="list-style-type: none"> • ecological systems maintenance • gene-pool protection • unaltered natural process continuance • sustainable traditional heritage practices (cultural, ritual, livelihood) at an appropriate level <p>Management Tasks include:</p> <ul style="list-style-type: none"> • enforcement of PAMP ordinances • surveillance • prevention and control of illicit activities • fire control • weed/pest suppression where practical • undertaking focussed rehabilitation of degraded sites • removal of alien materials (e.g. incidental solid waste or rubbish) • removal of unauthorized persons <p>Management Activity will be confined to access by PA rangers on foot or by helicopter drop. Any existing tracks suitable for vehicle usage will be progressively downgraded to pedestrian track access. The exceptions are tracks required for access to vital installations (e.g. safety installations, survival beacons, current restoration, etc.). A strategic emergency access track may be identified and designated in the zoning tables if considered appropriate.</p>	<p>subject to agreed specifications, i.e. time, place, numbers involved, duration and code of practice. Specific authorization from the PAMB will be required.</p> <p>In general, uses of any type will only be permitted provided the following conditions are met:</p> <ul style="list-style-type: none"> ▪ no permanent environmental disturbance ▪ no permanent environmental damage ▪ no environmental change ▪ no unacceptable change to the forest landscape ▪ for traditional Aeta activities, environmental disturbance is allowable provided it is in keeping with sustainable traditional practices
<p>CEZ-T 1 (buffer area adjacent to Bataan Natural Park)</p>	<p>Management Emphasis in the area adjacent to Bataan Natural Park will be integration to the maximum degree with the management prescriptions for Bataan Natural Park Management Plan</p>	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ no permanent environmental disturbance ▪ no permanent environmental damage ▪ no environmental change

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	<p>Management Objectives:</p> <ul style="list-style-type: none"> • to restrict all human access and prevent movement across the PA boundaries except for Aetas undertaking traditional practices • restrict and eradicate the spread of illicit activity from the Bataan Natural Park Buffer Zone • avoid change or damage to the environment resulting from human activity <p>Management Tasks include:</p> <ul style="list-style-type: none"> • restoration activities where necessary • surveillance and control • coordination of planning and management programs with Bataan Natural Park <p>Management Activity involves ongoing communications and liaison with Bataan Natural Park, routine surveillance, liaison and consultation with nearby communities and populations (e.g. Aeta, etc.)</p>	<ul style="list-style-type: none"> ▪ no unacceptable change to the forest landscape ▪ for traditional Aeta activities, environmental disturbance is allowed provided it is in keeping with sustainable traditional practices and subject to PAMB approval and authorization
<p>CEZ-T 2 (degraded sites upper Binanga River)</p>	<p>Management Emphasis is to achieve the progressive removal of illicit activities (swidden agriculture, forest clearing, etc.) and restore the affected sites.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • prevent spread of existing human activity • restrict and remove existing human presence • negotiate and organize alternative livelihood options for the involved population • ensure natural/assisted rehabilitation of affected locations to forest 	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ rehabilitation of modified locations to allow restoration of forest habitat ▪ potential site for ‘deep forest’ ecotourism node, or temporary research purposes to study restoration may be considered ▪ for traditional Aeta activities, environmental disturbance is allowable provided it is in keeping

	<p align="center">Management Emphasis</p>	<p align="center">Acceptable Uses and Facilities – performance standards</p>
	<p>environment condition</p> <ul style="list-style-type: none"> consider re-use of any site for specialized ecotourism node 	<p>with sustainable traditional practices</p>
<p>CEZ-T 3 (vicinity of Hill 394)</p>	<p>Management Emphasis is to provide a management response to pressures arising from visitation and use of Hill 394 as an ecotourism site.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> retain the quality of the forest environment in the vicinity of Hill 394 maintain the quality of forest landscape experience for visitors to Hill 394 provide and maintain specified forest trekking trails in the immediate vicinity only (maximum 200 meters radius) of Hill 394 to amplify the forest ecotourism experience <p>Management Tasks:</p> <ul style="list-style-type: none"> prepare detailed development and operational design guidelines for all intended activities in the vicinity of Hill 394 strong regulatory control over proposed ecotourism development – liaison with operators and other departments of the SBMA surveillance and monitoring to ensure that no unapproved activities or developments occur <p>Management Activity will focus on ensuring that human activity particularly by approved ecotourism operators in the PA to comply with the management and environmental protection objectives for the area. PAMB and other decision making bodies (i.e. SBMA) should not</p>	<p>There shall be:</p> <ul style="list-style-type: none"> no permanent environmental disturbance no permanent environmental damage no environmental change no unacceptable change to the forest landscape for traditional Aeta activities, environmental disturbance is allowable provided it is in keeping with sustainable traditional practices no structures of any kind, other than those approved under specific PAMB guideline (e.g. pedestrian paths, boardwalks, steps/stairs, signage) and justified as essential for safe access to Hill 394 – and providing they are installed and constructed according to acceptable and approved standards

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	depart from strict management objectives and allow decisions or enter into agreements that are contrary. Prevention of illicit activities and legal action to redress unauthorized developments (remove and rehabilitate sites) are expected.	

Figure 2. Core Ecological Zone – Terrestrial (CEZ – T)

Table 4. Core Ecological Zone – Marine (CEZ – M)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
<p>Core Ecological Zone – Marine (Figure 3)</p>	<p>Management Emphasis is to retain intact existing environmental and ecosystem values of the zone with minimum-to-nil disturbance by human activity.</p> <p>Management Objectives are to achieve:</p> <ul style="list-style-type: none"> • biodiversity maintenance • ecological systems maintenance • gene-pool protection • unaltered natural process continuance • natural re-colonization and rehabilitation of any damaged or impacted sites by aquatic plant species • natural replenishment, re-seeding, re-stocking of marine flora and fauna populations, pelagic and reefal fish species in particular • no interference with turtle migratory movements • permanent ranger station and ranger presence based on Grande Island • limited fully guided and supervised scuba dive tours (licensed for maximum of 2 divers per dive guide) with appropriate financial performance bonds, insurance and liability cover • complete prohibition on human access to zone for not less than three year periods to restore fish numbers to sustainable population level <p>Management tasks:</p> <ul style="list-style-type: none"> • monitoring • enforcement of PAMP ordinances • surveillance of both surface water and underwater activities/conditions • moratorium on access (total restriction 	<p>Uses in the above Table 2 indicate the permissible activities and uses in the CEZ-M. These activities are required to comply with the following performance criteria:</p> <ul style="list-style-type: none"> ▪ secured ecological sustainability unaffected ecological integrity and biodiversity ▪ unmodified natural processes ▪ indigenous peoples traditional practices sustainable and monitored with prime ecological protection directive ▪ natural restoration/ rehabilitation of disturbed, degraded areas ▪ no interference with habitat values of any kind ▪ no permanent disturbance, no damage ▪ minimum 1.5m depth for any non-powered boat movement ▪ no use of anchors, no engine idling, no trolling, no use of nets, no use of long lines <p>In general terms the following environmental</p>

	<p align="center">Management Emphasis</p>	<p align="center">Acceptable Uses and Facilities – performance standards</p>
	<p>on access) for specific reef sites for periods of not less than three years, on a selective basis to allow fish populations to restore</p> <ul style="list-style-type: none"> • prevention and control of illicit activities • weed/pest suppression where practical • undertaking focussed rehabilitation of degraded sites • removal of alien materials (e.g. incidental solid waste or rubbish) <p>Management activity will involve surveillance, control and enforcement activity by patrol boat and land (shoreline) in the vicinity of Camayan and Binanga Points.</p> <p>Enforcement will focus on preventing use of cyanide bombing, illicit fishing, removal of biotic or abiotic materials, disallowed boating activity, disallowed anchorages, unsupervised scuba diving, and spearfishing.</p> <p>Where damaged or impacted sites exist, focussed site rehabilitation may be undertaken involving active restoration techniques (e.g. artificial coral reef regeneration, seeding, etc).</p> <p>Management Activity involves emphasis on coordinated educational, scientific, and interpretative programs, with the intention of changing people’s attitudes, encouraging appropriate activities, and promoting the attractions and importance of the CEZ-M.</p>	<p>management performance is to be achieved:</p> <ul style="list-style-type: none"> ▪ ecological sustainability secured ▪ ecological integrity and bio-diversity unaffected ▪ natural processes unmodified ▪ indigenous peoples traditional practices sustainable and monitored with prime ecological protection directive ▪ natural (unassisted) restoration/rehabilitation of disturbed, degraded areas able to occur ▪ removal of all man-induced physical impact (fishing, harvesting, boat movements, watercraft movements, anchorages, etc.)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
<p>CEZ-M 1 (marine coastal foreshore, Chiquita Island and Camayan and Binanga Pts.)</p>	<p>Management Emphasis on visitor access (recreation, sight seeing) in appropriate modes while ensuring maximum protection of the immediate tidal, inter-tidal and sub-tidal zones.</p> <p>Management Objectives include:</p> <ul style="list-style-type: none"> • minimal impact on beach and nearshore marine environment • no boat landings or anchorage on Camayan/Binanga Pt. sites • stabilization and restoration of the Camayan Pt. to Binanga Point foreshore <p>Management Tasks:</p> <ul style="list-style-type: none"> • restoration of foreshore cliffs to address erosion associated with a retreating shoreline • reduction of siltation/sediment load entering immediate near shore marine environment • re-establish natural vegetation cover in foreshore/cliff sites previously cleared • remediation of contaminated sites, including the search and removal of unexploded ordinances <p>Management Activity includes the planning and design of site rehabilitation and remediation activities, followed by surveillance, enforcement and monitoring</p>	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ constructed paths and steps to ensure durable, guided access to the Camayan/Binanga Pts. foreshore ▪ no vehicle access ▪ no fishing or removal of materials (no extractive activities of any sort) ▪ rubbish disposal bins, and regular rubbish removal/clean up ▪ non-motorized craft landings only at Chiquita Island ▪ fines and sanctions imposed for non-compliance with localized regulations
<p>CEZ-M 2 (marine environment between Chiquita and Grande Islands)</p>	<p>Management Emphasis is to give special protection to these locations that support the highest marine environmental values within the PA</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • zero impact on marine environment 	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ no impact on the marine habitat or populations ▪ moratorium on human access to restore populations to sustainable levels if

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	<p>values</p> <ul style="list-style-type: none"> • complete protection of marine habitat and fauna populations • total prohibition on boat movements in the designated zone • no interference with turtle migratory movements • permanent ranger station and ranger presence based on Grande Island • limited fully guided and supervised scuba dive tours (licensed for maximum number of 2 divers per diveguide) with appropriate financial performance bonds, insurance and liability cover • complete prohibition on human access to the zone for not less than three years to restore fish numbers to sustainable population levels <p>Management Tasks:</p> <ul style="list-style-type: none"> • surveillance • policing and enforcement • installation of marker buoys to clearly identify no-go area • enforcement of PAMP ordinances • monitoring habitat • prevention and control of illicit activities • removal/eradication of exotic organisms • undertaking focussed rehabilitation of impacted sites • removal of alien materials (e.g. incidental solid waste or rubbish) 	<p>required</p> <ul style="list-style-type: none"> ▪ no impact on marine water quality from any close or adjacent activities ▪ no boat movements

Figure 3. Core Ecological Zone – Marine (CEZ – M)

Table 5. Sustainable Use Zone – Terrestrial (SUZ – T)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
<p>Sustainable Use – Terrestrial (Figure 4)</p>	<p>Management Emphasis is to maintain ecological values and biodiversity, protect and strengthen biological diversity, protect habitats and habitat diversity, maintain natural processes, and maintain landscape integrity and values</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • biodiversity maintenance • ecological systems maintenance • gene-pool protection • unaltered natural process continuance • sustainable traditional heritage practices (cultural, ritual, livelihood) • reduction in the use of wild bamboo and destruction of bamboo grove habitats by Aeta and JEST, etc. <p>Management Tasks:</p> <ul style="list-style-type: none"> • enforcement of PAMP ordinances • surveillance • prevention and control of illicit activities • guiding and informing PA visitors • traffic control to prevent illicit movements of vehicles off the main road • enforcement of parking regulations • fire prevention and control • weed/pest suppression where practical • undertaking focussed rehabilitation of degraded sites • removal of alien materials (e.g. incidental solid waste or rubbish) • administer and control activities 	<p>Uses specified in the above Table 2 include the following summarized activities: passive recreation, active recreation, sporting events, indigenous peoples’ and other miscellaneous activities: jungle survival training, and developed ecotourism nodes (e.g. Hill 394)</p> <p>All such uses are to be tightly controlled and monitored and only be allowed subject to agreed specifications concerning time, place, numbers involved, duration and code of practice.</p> <p>In general, the activities will be permitted subject to the following conditions:</p> <ul style="list-style-type: none"> ▪ pedestrian activity within the rainforest environment to be on authorized trails, paths and within specified recreation nodes; no disturbance to vegetation to occur. ▪ walking and trekking trails, paths, tracks, are subject to inclusion in a Strategic Trails Plan adopted and approved by the PAMB; no

	<p align="center">Management Emphasis</p>	<p align="center">Acceptable Uses and Facilities – performance standards</p>
	<p>according to permits, agreements and contracts</p> <ul style="list-style-type: none"> • maintenance of all infrastructure and facilities under direct PAMB management control (vehicle barriers, surface drainage channels and culverts, barrier fencing, etc) • prepare a ‘Strategic Trails Plan’ <p>Management Activity involves access by PA rangers in vehicles using specified management access tracks and/or on foot. Existing tracks surplus to requirements will be modified or rehabilitated to provide pedestrian track access in accordance with a ‘Strategic Trails Plan’. Tracks required for access to vital installations will be accommodated on a case to case basis. A strategic emergency access track may be identified and designated in the zoning tables if considered appropriate.</p>	<p>disturbance to vegetation, habitats or wildlife</p> <ul style="list-style-type: none"> ▪ active recreation, sports and miscellaneous attractions or facilities are allowed subject to permits being granted, approved management plans for specific activities, and provision of performance bonds by sponsoring organizations. Approval is required for equipment use and installation. ▪ Introduction of new activities will be on a case to case basis, subject to management plans, bonds, permits, etc ▪ Development of ecotourism nodes will be subject to compliance with the PAMP strategic ecotourism development plan and will require approval of detailed design development plans, including EIA and Environmental Management Plan <p>Absolute prohibitions include:</p> <ul style="list-style-type: none"> ▪ permanent development (structures) of any kind,

	Management Emphasis	Acceptable Uses and Facilities – performance standards
		<p>except interpretative trails, signage and overhead canopy walkways and pedestrian bridges (subject to approvals, EIA, ad agreements/MOUs with the PAMB)</p> <ul style="list-style-type: none"> ▪ landscape or landform modification (except installing trails, management access tracks, etc)
<p>SUZ-T 1 (Camayan and Binanga Pts. coastal fringe)</p>	<p>Management Emphasis is on protecting the critically important rainforest coastal landscape and on managing the demand and pressure for visitor access and facilities.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • to protect and retain extremely rare and valuable coastal landscape qualities • to protect the natural processes connecting terrestrial and marine ecosystem functions • to limit visitor numbers to a sustainable level, supported by infrastructure that is well within the carrying capacity and sustainability of the site <p>Management Tasks:</p> <ul style="list-style-type: none"> • restoration of foreshore cliffs to address erosion associated with a retreating shoreline/cliff/escarpment • reduction of siltation/sediment load entering immediate near shore marine environment through cliff and soil 	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ no loss of forest vegetation cover ▪ no facilities or structures above tree canopy height ▪ consideration of specific tourism facility development subject to the prior establishment and adoption of planning and design criteria, formulated on the basis of a site ecological and land capability assessment approved by the PAMB

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	<p>stabilization projects</p> <ul style="list-style-type: none"> re-establish natural vegetation cover in foreshore/cliff sites previously cleared remediation of contaminated sites, including the search for and removal of unexploded ordinances 	
<p>SUZ-T 2 (coastal landscape – Port Binanga to Triboa Bay)</p>	<p>Management Emphasis is the same as for SUZ-T1 but with special emphasis on protection of coastal landscape and a restriction on any development considered visually intrusive or environmentally impacting</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> controlled public access via specially constructed walk trails only maintain existing forest cover disallow any proposals for increased access or tourist development, particularly motorized rejection of any ‘one off’ development proposals. consider approval of environmentally acceptable SBME developments outside recreation zone, providing environmental protection objectives are met, and providing development/activity intentions are ecotourism/nature-based recreation, education oriented. 	<p>There shall be:</p> <ul style="list-style-type: none"> no loss of vegetation cover no facilities, other than suitably constructed pedestrian and interpretation trails no specialized development of any kind no permanent structures other than signage and trails
<p>SUZ-T3 (Forest Ecosystem Corridors)</p>	<p>Management Emphasis is to retain intact the existing environmental and ecosystem values of the zone with minimum-to-nil disturbance by human activity.</p> <p>Management Objectives are to achieve:</p> <ul style="list-style-type: none"> biodiversity maintenance 	<ul style="list-style-type: none"> science research, nature study supervised nature based recreation according to an approved plan containing detailed performance specifications limited to

	<p align="center">Management Emphasis</p>	<p align="center">Acceptable Uses and Facilities – performance standards</p>
	<ul style="list-style-type: none"> • ecological systems maintenance • gene-pool protection • unaltered natural process continuance • sustainable traditional heritage practices (cultural, ritual, livelihood) <p>Management tasks:</p> <ul style="list-style-type: none"> • enforcement of PAMP ordinances • surveillance • prevention and control of illicit activities • fire control • weed/pest suppression where practical • undertaking focussed rehabilitation of degraded sites • removal of alien materials (e.g. incidental solid waste or rubbish) • removal of unauthorized persons <p>Management activity will be confined to access by PA rangers on foot, or in vehicle along established tracks retained for management purposes, including tracks required for access to vital installations (e.g. safety installations, survival beacons, current restoration, etc.). Surplus tracks will be progressively downgraded to pedestrian track access. A strategic emergency access track may be identified and designated in the zoning tables if considered appropriate.</p>	<p>specific sites or forest areas prescribed precincts</p> <ul style="list-style-type: none"> ▪ other environmentally benign activities that have zero environmental impact (subject to approval by the PAMB) ▪ specified traditional peoples’ (Aeta) practices. <p>Disallowed activities include:</p> <ul style="list-style-type: none"> ▪ unsupervised, informal recreation ▪ sports of any kind <p>These uses are to be tightly controlled and monitored, and can only occur subject to agreed specifications concerning time, place, numbers involved, duration and code of practice. Specific authorization from the PAMB will be required for all activities.</p> <p>In general, uses of any type will only be permitted provided the following conditions are met:</p> <ul style="list-style-type: none"> ▪ no permanent environmental disturbance ▪ no permanent environmental damage ▪ no environmental change

	Management Emphasis	Acceptable Uses and Facilities – performance standards
		<ul style="list-style-type: none">▪ no unacceptable change to the forest landscape▪ for traditional Aeta activities, environmental disturbance is allowable provided it is in keeping with sustainable traditional practices

Figure 4. Sustainable Use Zone – Terrestrial (SUZ – T)

Table 6. Sustainable Use Zone – Marine (SUZ – M)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
<p>Sustainable Use – Marine (Figure 5)</p>	<p>Management Emphasis is to maintain ecological values and biodiversity, protect and strengthen biological diversity, protect habitats and habitat diversity, maintain natural processes, and maintain landscape integrity and values</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • biodiversity maintenance • ecological systems maintenance • gene-pool protection • unaltered natural process continuance • habitat protection • coral reef protection • seagrass meadow protection • water quality maintenance <p>Management Tasks:</p> <ul style="list-style-type: none"> • enforcement of PAMP ordinances • surface water activity surveillance by patrol boat • prevention and control of illicit activities • administer and control activities according to permits, agreements and contracts • coordinate with the Subic Bay Harbor Authority on the alignment and maintenance of navigable channels for shipping of over 50 tons to avoid impacts on sensitive marine habitats. <p>Management activity will include general water based surveillance from PAMO patrol boats/vessels, and shore-based control and interception of visitors and illicit/destructive activities. Management</p>	<p>Permitted uses are specified in Table 2 above, and includes:</p> <ul style="list-style-type: none"> ▪ unrestricted swimming, non-motorized water sports, scuba diving, snorkeling, small dinghy sailing, and sea kayaking/canoeing ▪ fixed keel yachts and power boats in designated navigable zones ▪ water skiing, jet skiing and para-gliding in designated zones ▪ lure and fly catch and release fishing ▪ anchorages in designated zones or buoys only <p>These uses are permissible subject to compliance with the following requirements:</p> <ul style="list-style-type: none"> ▪ swimming and snorkeling from beach, boats, and swimming structures, subject to acceptable water quality ▪ scuba diving within specified dive zones, launched from designated mooring buoys, or drift platforms ▪ non-motorized boat use and racing/events within designated zones, and

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	<p>activity will also include significant emphasis on information dissemination, education and promotion of selected information and materials to the community and specific stakeholder groups</p>	<p>subject to minimum depth requirement of 5 meters under keel.</p> <ul style="list-style-type: none"> ▪ Motorized boat use restricted to locations with minimum depths of 5 meters under keel/chine, max 8 knots speed (to protect seagrasses, fish nurseries), and use of authorized fuel bowsers only ▪ power boats/water skiing at minimum depths of 10 meters under keel ▪ fishing without trawling/nets or long lines, and using designated anchorage only.

Figure 5. Sustainable Use Zone – Marine (SUZ – M)

Table 7. Turtle Nesting Beach

	Management Emphasis	Acceptable Uses and Facilities – performance standards
<p>Turtle Nesting Beach (within SUZ-M) (Figure 6)</p>	<p>Management Emphasis is to balance ongoing recreational use of the beach with seasonal nesting of green turtles</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • retain the environmental, scenic and amenity value of the beach • accommodate use pressures and visitors in an appropriate manner • protect the habitat value of the beach for nesting turtles over all other uses <p>Management Tasks include:</p> <ul style="list-style-type: none"> • install and maintain signage to inform visitors • install and maintain suitable pedestrian access • install appropriately located public toilets and shelters near car park access points • install and maintain rubbish bins • removal of litter on a regular basis and removal of obstructions that might impede turtles during nesting season • during the turtle nesting season, restrict unsupervised access, instead provide supervised turtle nesting observation and interpretation/education activities • coordinate with schools and research institutions <p>Management Activities include a combination of year-round site maintenance to ensure adequate standards of hygiene and cleanliness, high visitor interface for purposes of informing visitors</p>	<p>There shall be: normal recreational beach activities (swimming, picnicking, sun basking, walking, soft beach activities such as volley ball)</p> <p>There shall be:</p> <ul style="list-style-type: none"> ▪ no development on the beach ▪ no vehicle access to the beach ▪ no lighting in the vicinity of the beach that could cause disorientation to nesting turtles ▪ no shore landing by motorized boats at any time of year ▪ no clearing or removal of foreshore vegetation

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	of the opportunity and influencing and controlling visitor behavior. The management of anti-social and harmful behavior towards the turtle-nesting site will be a high priority task.	

Figure 6. Turtle Nesting Beach

Table 8. Restoration Zone – Terrestrial (RZ – T)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
<p>Restoration – Terrestrial (Figure 7)</p>	<p>Management Emphasis is to restore specific degraded sites within the PA that, by virtue of their location or site conditions, represents high priority for rehabilitation. Management will therefore involve a combination of protection and active intervention and restoration activities.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • prevent further degradation • rehabilitate sites to restored habitat value, landscape value • restore area for ecotourism or recreation purposes <p>Management Tasks:</p> <ul style="list-style-type: none"> • control and prevention of degrading activities • removal of materials, plant and equipment • land management (fencing, fire prevention, etc) <p>Management Activities include control and removal activities, perimeter control and conventional land management. Management also requires undertaking active land restoration, construction, and cultivation/seedling/ planting for revegetation</p>	<p>Permissible and prohibited uses:</p> <ul style="list-style-type: none"> ▪ earthworks and drainage ▪ forward planting ▪ demolition, removal and site remediation ▪ construction and installation ▪ reforestation <p>Following site restoration the area in question will be redesignated to a new zone (e.g. habitat management, sustainable use, ecological core, recreation) according to the provisions of the Strategic Use and Development Plan, at which time new zoning use regulations would apply.</p>
<p>RTZ-T 1 (forest restoration area east of the PA, due south of Mt</p>	<p>Management Emphasis is on broad scale land management and reforestation practices to restore the majority of the area to forest habitat. Significant consultation and participation of Pastolan Aeta will be involved.</p>	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ cessation of existing human activities that are incompatible with reforestation practices ▪ appropriate

	Management Emphasis	Acceptable Uses and Facilities – performance standards
Santa Rita)	<p>Management Objectives:</p> <ul style="list-style-type: none"> • remove current activities in the area • replant open cleared grassland with suitable forest species • re-establish rainforest habitat with appropriate natural species diversity • re-introduce selected fauna from adjacent forest areas • accommodate agreed traditional livelihood resources/practices within the area 	<p>management and stabilization of erosion prone landscapes/landform</p> <ul style="list-style-type: none"> ▪ prevention and control of fire ▪ removal of pests ▪ managed introduction of alternative livelihood practices
RTZ-T 2 (naval magazine area)	<p>Management Emphasis is on removal and restoration of a selected portion of the naval magazines in order to consolidate an excessively fragmented (spatially scattered) sections of the former naval magazine facility</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • remove any existing uses or occupiers of the naval magazines in the nominated area • demolish structures and remove materials • restore sites to rainforest habitat, incorporating interpretation and trekking trails as appropriate • controlling community access during the restoration period 	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ restriction on any use of the existing facilities prior to restoration ▪ investigations to ensure no site contamination exists ▪ remediation of any contaminated sites as part of restoration ▪ no public access to sites during restoration activity
RTZ-T 3 (Argonaut Highway locality)	<p>Management Emphasis is on strong coordination and liaison with other units of the SBMA to secure the future environmental protection of several key, remnant sites in this locality. Compatible restoration to be undertaken wherever possible.</p>	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ cessation of destructive practices wherever possible ▪ strong control on ‘collateral damage’ ▪ negotiation with appropriate bodies to

	<p align="center">Management Emphasis</p>	<p align="center">Acceptable Uses and Facilities – performance standards</p>
	<p>Management Objectives:</p> <ul style="list-style-type: none"> • prevent further destruction of small habitats under threat and important niche habitats • negotiate cooperative restoration of critical environments degraded by adjacent developments and infrastructure works (e.g. mangrove destruction, clearing of steep terrain, installation of high impact surface drainage, etc.) • undertake consultation and negotiation to establish suitable end use and protective measures for threatened environments 	<p>instigate tight control on unsupervised works activities associated with major developmental projects</p> <ul style="list-style-type: none"> ▪ retrofitting of appropriate drainage, boundary fencing and perimeter control where problem/conflicting land uses are involved
<p>RTZ-T4 (cleared sites near Camayan Point)</p>	<p>Management Emphasis is to ensure the most appropriate future use of the three former NavMag/cleared sites in the vicinity of Camayan Point relying on the excellence of ‘restrained’ and environmentally compatible/appropriate design solutions. This stipulation is inserted to avoid:</p> <ul style="list-style-type: none"> - ‘over’ design and excessive development (of scale, height, bulk, prominence, and intensity of use) - poor design and development that would detract from the wider values of the valuable foreshore/coastal landscape - development that intrudes on the surrounding environmental values and causes greater impact than what could be avoidable <p>Sites sensitive particularly the Camayan Point site both from a visual and environmental standpoint. Nevertheless,</p>	<p>For these important sites, the intention of these provisions is to set in place a procedure that allows full consideration of the potential use of the sites, and a systematic planning and assessment procedure that ensures the best possible outcome. The following points should be read with this in mind.</p> <p>For these sites, and the Camayan Point site in particular, there shall be:</p> <ul style="list-style-type: none"> ▪ no presumption that the site(s), or any portion of the site(s) are automatically available for redevelopment for intensive commercial use – if compelling

	<p align="center">Management Emphasis</p>	<p align="center">Acceptable Uses and Facilities – performance standards</p>
	<p>the sites are extremely attractive to future development. Sensitivity associated with the sites include:</p> <ul style="list-style-type: none"> - visual prominence to a wide landscape/seascape catchment - UXO’s and site contamination of unknown extent - fragility of retreating and exposed cliff causing considerable siltation/sedimentation of the nearshore marine and beach environment - potential for insufficiently controlled development to severe vital ecosystem corridor (Forest Ecosystem Corridor) <p>Management Objectives:</p> <ul style="list-style-type: none"> • restoration of the sites to natural environment values, and/or environmental stability (e.g. cliff edge and beach/marine shallow and intertidal zone) • allow consideration of alternative use, or redevelopment of visually screened portions of the southern NavMag site • ensure that appropriate site assessment and investigations are conducted to determine parameters for future use <p>Management Tasks:</p> <ul style="list-style-type: none"> • detailed site investigations to determine the degree and nature of site contamination • detailed site assessment to determine restoration and site remediation requirements • planning investigations to determine 	<p>environmental, amenity or visual impact concerns remain outstanding</p> <ul style="list-style-type: none"> ▪ in-depth investigations by the PAMB to determine the right balance between maintenance of the Forest Ecosystem Corridor (SUZ-T Sub-zone) objectives and any future activities encouraged in the location, prior to any decision to be made for future use of these sites ▪ a preference for future uses of the northern and southern (of the three) sites, and limited landscape works and development forward of the tree line on Camayan Point.

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	future use options of the appropriate portions of the sites <ul style="list-style-type: none">• preparation of detailed site management plans, restoration plans and/or redevelopment plans, with appropriate site design guidelines approved by the PAMB	

Figure 7. Restoration Zone – Terrestrial (RZ – T)

Table 9. Restoration Zone – Marine (RZ – M)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
Restoration – Marine	<p>Management Emphasis is on restoration of degraded sites with suitability for rehabilitation</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • restore and enhance degraded marine habitat sites suitable for rehabilitation • reduce the range and incidence of impacting activities • encourage and promote the adoption of new values that result in the reduction of impacting behavior on the marine environment <p>Management Tasks:</p> <ul style="list-style-type: none"> • identify sites suitable for restoration activity • prepare restoration programs • design and undertake restoration projects • protect sites and monitor results <p>Management Activities: Identify critical areas and reduce impacts from:</p> <ul style="list-style-type: none"> • fishing • recreation --- motor-based recreation activities • recreation --- negative activities involving coral collecting, stepping on corals, overturning corals and large rocks, etc. • pollution ----land based sources of pollution, sewage, garbage, agriculture, etc. 	<p>Permissible and prohibited activities in the marine restoration areas as outlined in Table 2 include:</p> <ul style="list-style-type: none"> ▪ active management to stop impacts ▪ habitat restoration ▪ monitoring and science research ▪ ‘marine’ human use activities compatible with restoration activities ▪ mariculture activities ▪ reseedling <p>Restoration activities in the marine environment require the combination of:</p> <ul style="list-style-type: none"> ▪ small scale, specific site restoration action ▪ broad scale regional environmental protection to prevent, control diffuse source impacts (terrestrial, coastal, marine based) ▪ widely targeted information, awareness programs to change behavior and practices of impacting community groups and sectors

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	<p>From identified impacts design and implementation of:</p> <ul style="list-style-type: none"> • sedimentation control with sediment experts / foresters for remedial coastal reforestation • interventions to control mining and quarrying activities • appropriate coastal recreation approaches that are not detrimental to coral reef and coastal areas health • monitoring, surveillance and control measures <p>Explore rehabilitation measures consistent with the local ecology, topography, natural resource use, e.g.</p> <ul style="list-style-type: none"> • coral replantation where feasible and necessary • reseeded (giant clams, etc.) • rock mounds for groupers 	

Table 10. Habitat Protection – Terrestrial (HPZ – T)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
<p>Habitat protection – Terrestrial (Figure 8)</p>	<p>Management Emphasis on the conservation and protection of distinct, unique and otherwise important habitats, combined with the promotion of such areas to the visiting public and education/research institutions.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • establish inventory and data base for important habitat areas • raise awareness of important habitats • secure and protect habitats with sustainable management practices • establish sustainable visitor attractions/destinations that generally promote the values of and interest in the SBPA <p>Management Tasks:</p> <ul style="list-style-type: none"> • identify important habitat areas in need of protection • determine habitat protection needs • implement habitat management action plans • prepare and implement ongoing education, interpretation, and research programs <p>Management Activities include site assessment and research to identify and understand management needs, together with active habitat management to:</p> <ul style="list-style-type: none"> • protect habitat values • reintroduce flora and fauna species • remove influences of degradation or destruction • promote ecological values among 	<p>Permissible uses within habitat protection zones are:</p> <ul style="list-style-type: none"> ▪ monitoring ▪ proactive wildlife management ▪ land management ▪ scientific research ▪ controlled fauna observation and wildlife interpretation <p>All activities undertaken within habitat protection zones will be according to specific plans and designs approved by the PAMB. Intensive management presence by PAMB staff will be required to prevent unauthorized activity and entry.</p> <p>Uses will only be permitted provided:</p> <ul style="list-style-type: none"> ▪ activities are approved under the provisions of an adopted habitat protection plan ▪ design and construction of habitat management aids have no deleterious impact on non-target species or other habitats ▪ environmental interpretation and observation, etc., do not interfere with the primary objective of

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	<p>visitors and the general public</p> <p>Management activities will also involve the construction and maintenance of specific aids to habitat protection (e.g. boundary fencing, closure of roads/tracks and trails) and visitor use (observation trails/hides, etc.)</p>	<p>protecting habitat and the fauna it supports</p>
<p>HPZ-T 1 (Cubi bat roost)</p>	<p>Management Emphasis on the total protection of the bat roost habitat while accommodating intensive visitor activity and tourism accommodation immediately adjacent, in such a way that both values are sustainable and integrated. The protection of the bat population remains a management priority.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • permanent protection of the bat roost habitat values • protection and retention of the fruit bat colony population at sustainable numbers in perpetuity • complete restriction on entry into the bat roost habitat except by park managers or approved researchers • national and international promotion of the unique attraction to visitors • general improvement in visitor interpretation and observation facilities <p>Management Tasks:</p> <ul style="list-style-type: none"> • coordinate research and investigations into habitat protection needs • review international literature on protection needs and approaches • review current visitor, tourist facilities 	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ no further reduction in the distance buffer between visitors, observers and the bat roost habitat. ▪ no interpretation trails or facilities within the bat roost habitat itself ▪ no detrimental impacts on the habitat coming from the adjacent tourist/visitor center and facilities (e.g. contaminated run-off from car parks, etc.) ▪ improved material for education and interpretative purposes to engage the public in the wider issues of fruit bat conservation

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	<ul style="list-style-type: none"> review current environmental interpretative facilities and approaches and recommend improvements 	
<p>HPZ-T 2 (Mangroves – Ilanin, Triboa, Batan, Binictican, Malawaan, and downstream portions of Binictican, Malawaan Rivers)</p>	<p>Management Emphasis on the protection of this unique and highly important habitat type with careful provision for environmental interpretation and education opportunities.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> conservation and protection of mangrove habitat ensuring the continuance of key natural processes (e.g. no interference with natural drainage conditions) planning and construction of interpretative boardwalks, observation hides, and trails ensure parking and vehicle access are provided at suitable locations for potential sites for interpretation and wildlife observation provide adequate public toilets at ‘use nodes’ maintain general environment free from litter and waste allow the continued harvesting of food and medicines by indigenous Aeta at sustainable rates ensure minimum development setbacks for portions of river environment passing through developed land (e.g. Subic Gateway, Subic Port localities) <p>Management Tasks:</p> <ul style="list-style-type: none"> surveillance 	<p>There shall be:</p> <ul style="list-style-type: none"> no destruction of mangrove vegetation no interference with natural drainage regimes no reduction in the overall mangrove habitat area no encroachment on the mangrove habitat area adequate buffers (min 50 meters) of terrestrial non-mangrove vegetation to be maintained between visitor arrival/parking areas and mangrove environments no installation of underground or overhead infrastructure (e.g. pipes, wires, drainage channels, drainage basins, roads/tracks) <p>Allowable Access into Mangroves by Watercraft Non-powered watercraft (canoes, kayak, row boats) may enter deeper, permanent channels of the major mangrove areas during the ‘upper tidal range’ period (i.e. at water</p>

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	<ul style="list-style-type: none"> • monitoring • control and enforcement • construction of trails and boardwalks • regular clean up and refuse removal • education and interpretation • guidance and information dissemination • close liaison with the SBMA Planning Department concerning development intentions likely to intrude on the mangrove and riverine environments <p>Management Activity involves ongoing communications and liaison with the SBMA Planning Department regarding ongoing land use development activity adjacent to habitats in close proximity to built-up environment. Normal ranger activities (surveillance, monitoring, control and enforcement, removal of alien materials) in other locations.</p>	<p>depth at or above median tide/sea level) to a distance indicated by marker posts (set in mid channel, with non-corrosive metal indicator tag) installed by PAMB rangers</p> <p>Setbacks Setbacks for development beside river alignments should not be less than 40 meters on either side of the channel alignment (Law pertaining to Timber Lands, PD 707). Ideally, setbacks should include non-riverine habitat environment to provide an easement alignment into which essential below ground linear infrastructure (pipes, wires) can be installed without causing environmental impact. This particularly applies to the Subic Gateway/Port Boton locality.</p>
<p>HPZ-T 3 (Rivers – Ilanin, Binanga)</p>	<p>Management Emphasis on retaining the forest streams and rivers as ‘wild rainforest watercourses’ with full habitat value while simultaneously recognizing their intrinsic value as landscape features and visitor attractions.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • maintain river channels and adjacent river banks ravines as unmodified environments 	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ no destruction of forest or fringing vegetation ▪ no interference with the natural drainage regimes ▪ no reduction in the overall stream/river habitat area ▪ no encroachment on the edge of the watercourses or their

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	<ul style="list-style-type: none"> • protect habitat values • maintain natural drainage regimes • allow ecotourism trails access to selective portions of surface watercourses • develop specific river/stream sites (water pools, waterfalls, etc.) as visitor attractions • develop and maintain essential visitor infrastructure in suitable locations <p>Management Tasks:</p> <ul style="list-style-type: none"> • surveillance and monitoring • control and enforcement • clean up and rubbish removal • construction of trails and boardwalks • guidance and information dissemination 	<p>associated landscapes (valleys, ravines)</p> <ul style="list-style-type: none"> ▪ adequate buffers (min 40 meters) of vegetation to be maintained between visitor facilities (trails) and wetland/stream habitats

Figure 8. Habitat Protection – Terrestrial (HPZ – T)

Table 11. Habitat Protection Zone - Marine (HPZ – M)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
Habitat Protection – Marine (Figure 9)	<p>Management Emphasis on surveillance and enforcement and coordination with stakeholders and government agencies. The success of habitat protection is entirely dependent on the control of a wide variety of potential users of this zone.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • biodiversity maintenance • ecological systems maintenance • gene-pool protection • unaltered natural process continuance • natural re-colonization and rehabilitation of any damaged or impacted sites by aquatic plant species • natural replenishment, re-seeding, re-stocking of marine fauna populations, pelagic and reefal fish species in particular • provision of managed and controlled low impact water based ecotourism and recreational pursuits • eradication of illegal, destructive, impacting and intrusive activities and behavior <p>Management Tasks:</p> <ul style="list-style-type: none"> • monitoring • enforcement of PAMP ordinances • surveillance of both surface water and underwater activities/conditions • prevention and control of illicit activities • weed/pest suppression where practical • undertaking focussed rehabilitation of 	<ul style="list-style-type: none"> - scientific research and monitoring - habitat management - swimming and snorkeling - traditional indigenous peoples’ activities - guided, supervised scuba diving - small boats activity (dinghy, kayak, canoe, row boat) but no wind or motorized recreational craft - recreational water craft only allowed to acceptable water depths (min 1 meter) outside the inter-tidal zone in order to avoid ‘keel drag’, paddle scooping/disturbance of benthos - motorized maintenance and park management boats (four stroke engine technology, maximum speed 5 knots) allowable <p>All such uses are to be tightly controlled and monitored and subject to agreed specifications concerning time, place, numbers involved, duration and adopted code of practice.</p>

	<p align="center">Management Emphasis</p>	<p align="center">Acceptable Uses and Facilities – performance standards</p>
	<p>degraded sites</p> <ul style="list-style-type: none"> • removal of alien materials (e.g. incidental solid waste or rubbish) <p>Management activity involves surveillance, control and enforcement activity by patrol boat, and land (shoreline in the vicinity of Ilanin and Triboa Bays)</p> <p>Enforcement will focus on preventing all illegal and harmful activities (e.g. cyanide bombing, illicit fishing, removal of biotic or abiotic materials, disallowed boating activity, disallowed anchorages, unsupervised scuba diving, and spearfishing)</p> <p>Where damaged or impacted sites exist, focussed site rehabilitation may be undertaken involving active restoration techniques (e.g. artificial coral reef regeneration, seeding).</p> <p>Management activity will also emphasize coordinated educational, scientific, and interpretative programs, with the intention of changing people attitudes, encouraging appropriate activities, and promoting the attractions and importance of the CEZ-M.</p>	<p>In general, uses of any type will only be permitted provided the following conditions are met:</p> <ul style="list-style-type: none"> ▪ no permanent environmental disturbance ▪ no environmental damage ▪ no environmental change ▪ no unacceptable change to the seascape or coastal landscape

Figure 9. Habitat Protection Zone - Marine (HPZ – M)

Table 12. Recreation Zone – Terrestrial (REZ – T)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
<p>Recreation – Terrestrial (Figure 10)</p>	<p>Management Emphasis on the provision of nature-based recreation and tourism in specified sites that have been previously modified while maintaining maximum environmental protection standards with no encroachment on adjacent forest environment</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • encourage and develop a diverse range of ecotourism opportunities • provide a suitable range of nature based recreation opportunities • maintain best practice infrastructure • service and manage appropriate visitor numbers • maintain visitor numbers, and operate attractions/destinations within site carrying capacity • involve appropriate stakeholders in the running of various recreational venues/activities <p>Management Tasks:</p> <ul style="list-style-type: none"> • monitoring • surveillance • enforcement • negotiation with recreation, ecotourism and tourism operators • administration of contracts, agreements, contracts associated with recreation/tourism service operators • education and attitude/value changing <p>Management Activities: A high degree of contact with ecotourism, recreation and tourism operators to ensure</p>	<p>Permitted uses include:</p> <ul style="list-style-type: none"> ▪ ecotourism ▪ passive and active recreation nodes ▪ recreation and sports ▪ ‘design/site sensitive’ nature-based tourism ▪ commercial tourism facilities designed to benefit from the Protected Area setting <p>All such uses to be closely controlled and monitored and subject to legal agreements and contracts.</p> <p>In general, uses of any type will only be permitted provided the following performance standards are met:</p> <ul style="list-style-type: none"> ▪ built park and sporting facilities to accepted standards ▪ architectural standards that meet park design guidelines (construction type, materials, roof cladding, design vernacular, etc.) ▪ ‘water sensitive design’ landscaping, incorporating nutrient stripping ‘treatment trains’, etc. ▪ earthworks in conformance with

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	<p>activities are and in accordance with legal/contract agreements. Activities will include regular audit of operators, sites, review of agreements. Inspection of establishments on continuing and regular basis. Maximum degree of coordination and consultation with operators to ensure early detection of problems/issues. High degree of negotiation and conflict resolution to resolve disputes, management conflicts, etc.</p>	<p>prescribed limits (as specified in Management Plan)</p> <ul style="list-style-type: none"> ▪ height limits to all structures ▪ aerobic wastewater package treatment plants development nodes, and/or appropriate technology options for toilets and gray-water uses (ablutions, kitchens, accommodation) ▪ vehicle parking to accepted standards ▪ access and circulation to park planning standards (one way systems, limited road width, traffic calmers, vehicle barriers) ▪ appropriate environmental buffers (natural or designed) between developments and sensitive habitats (e.g. bat roost) and natural systems (e.g. mangroves), vegetation, etc. ▪ toll booths for visitor/user control
<p>REZ-T 1 (Naval magazines)</p>	<p>Management Emphasis on the coordination of interim land use and future planning and development</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • cessation of inappropriate uses • relocation of conflicting uses 	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ no impact on overall forest zone landscape ▪ no structures rising above the canopy/vegetation cover ▪ no interference with

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	<ul style="list-style-type: none"> • establishment of new recreation/ecotourism oriented uses • adoption of appropriate design standards • installation of appropriate infrastructure (effluent treatment, refuse collection and disposal) • maximize site opportunity and development for appropriate uses • design and establish appropriate traffic circulation system • plan, design and establish a ‘park and ride’ eco-friendly internal ‘visitor transport system’. <p>Management Tasks:</p> <ul style="list-style-type: none"> • interim land management • surveillance • enforcement • coordination with stakeholder interests • negotiating agreements and outcomes • planning and design • traffic management • eco-friendly transport system establishment • EIA • general maintenance and ranger activity 	<p>adjacent forest habitat</p> <ul style="list-style-type: none"> ▪ no interference with natural drainage ▪ no major earthworks impact on terrain outside boundary/perimeter fencing ▪ provision of adequate services and infrastructure to cater to visitors/users needs <p>Delineation requirement: <i>Identification of ALL NavMag sites, with accurate delineation of all boundaries based on existing perimeter fences – no inclusion of external forest habitat. Include detailed boundary plan as appendix to PAMP</i></p>
<p>REZ-T 2 (Marine Exploratorium)</p>	<p>Management Emphasis on liaison and coordination of management activities with SBME operations, ensure compliance by SBME, and implement jointly agreed cooperative marine and terrestrial habitat management objectives, education and environmental awareness programs</p>	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ minimum impact on adjacent forest environment and habitat ▪ controlled access to foreshore areas ▪ controlled vehicle access according to a strategic access and

	<p align="center">Management Emphasis</p>	<p align="center">Acceptable Uses and Facilities – performance standards</p>
	<p>Management Objectives:</p> <ul style="list-style-type: none"> • maintain high environmental quality • protect all shoreline coastal fringe habitats • protect all forest habitat within the SBME ‘agreement’ area • achieve high level of visitor appreciation of unique coastal, foreshore, seascape landscapes • control all incidental visitor activities and movements in the non-managed portion of the SBME area • restrict visitor movements in nominated ‘no go areas’ and sensitive habitat • enhance SBME visitor PA experience through integrated/coordinated interpretation and education programs • coordinate planning and implementation of future SBME land based activities, to ensure compliance with PA objectives and zoning • consider approval of environmentally acceptable SBME developments outside recreation zone, providing environmental protection objectives are met, and providing development/activity intentions are ecotourism/nature-based recreation, education oriented. <p>Management Tasks:</p> <ul style="list-style-type: none"> • surveillance • monitoring • coordination and liaison • policing and enforcement • education and guidance • general maintenance, ranger activity 	<p>parking plan</p> <ul style="list-style-type: none"> ▪ no unauthorized commercial activities ▪ no unauthorized development expansion or activity expansion of existing facilities (i.e. not in compliance with approvals given) ▪ scientific collection permits (live specimens) to SBME for ‘short term’ education/interpretation and science/monitoring purposes ▪ all motorized water craft to be limited to appropriately sized 4-stroke technology

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	Management Activity will emphasize balance of cooperative liaison with SBME; control activities to restrict unauthorized activity, and surveillance.	
REZ-T 3 (Grande Island)	<p>Management Emphasis on protecting the unique landscape, architecture and heritage values of Grande Island</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • retaining and restoring natural vegetation cover • upgrading visitor facilities (amenities, signage, shelter, walks, interpretation signs, etc.) • upgrade essential infrastructure (lighting, effluent disposal, rubbish removal/disposal, etc.) • enhancing attractions • enhancement of island landscape consistent with historic and heritage values • improving island access for visitors (ferry services, charter, etc.) • increasing visitor derived revenues 	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ visitor levels maintained within the carrying capacity of the island ▪ no visual intrusion on island landscape or scenic qualities ▪ no negative impacts on Subic Bay seascape qualities resulting from developments on Grande Island ▪ no exceedance of infrastructure capability
REZ-T 4 (existing recreation development, e.g. golf, equestrian)	<p>Management Emphasis on coordination with operators of existing, approved recreation facilities to ensure environmental protection measures and practices consistent with overall PA objectives</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • continued operation of existing facilities compatible with PAMP objectives <p>Management Tasks:</p> <ul style="list-style-type: none"> • liaison and coordination 	<p>There shall be:</p> <p>No adverse impacts of existing recreation, tourism activities on the environmental values of the PA.</p> <p>No development expansion or activity expansion of existing facilities without full assessment by the PAMO, including EIA (if required under the legislation)</p>

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	<ul style="list-style-type: none"> • communication • surveillance • enforcement 	
<p>REZ-T 5 (miscellaneous industry sites)</p>	<p>Management Emphasis on coordination and negotiation for re-use of strategically located sites containing activities not in conformance with PA objectives and overall intent.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • relocation of all existing non-conforming uses • re-use of sites for ecotourism, nature-based tourism or forest accommodation purposes • landscape restoration of overall sites to soften visual character and visually integrate into forest environment • take advantage of existing operational infrastructure (e.g. water supply, power supply, suitable structures, foundations, access roads/tracks) to maximize opportunities presented to visiting public, development of appropriate recreational/visitor facilities and attractions 	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ earliest cessation of non-conforming uses (no extensions or expansions) ▪ re-use and/or redevelopment of sites according to the intent and objectives of the PAMP

Figure 10. Recreation Zone – Terrestrial (REZ – T)

Table 13. Recreation Zone – Beach

	Management Emphasis	Acceptable Uses and Facilities – performance standards
Recreation – Beach (within REZ -T) (Figure 11)	<p>Management Emphasis is to balance appropriate user/visitor levels and recreational use of beaches with environmental protection requirements and seasonal nesting of green turtles, in particular.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • protect beach habitat and environmental values • retain the environmental, scenic and amenity value of the beach • ensure appropriate visitor access (e.g. walkways, steps, etc.) • accommodate use pressures and visitors in an appropriate manner • protect the habitat value of the beach for nesting turtles over all other uses. <p>Management Tasks:</p> <ul style="list-style-type: none"> • install and maintain signage for visitor information • install and maintain suitable pedestrian access • install appropriately located public toilets and shelter at nearest car park-to-beach access path if appropriate (i.e. only where existing parking and nearby vehicle access exists – hence not for isolated beaches) • install and maintain rubbish bins along paths leading to beach area • remove litter on a regular basis and remove obstructions that might interfere with wildlife and nesting turtles using the beaches • during the waterbird breeding and 	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ no development on the beach ▪ no vehicle access to the beach ▪ no lighting in the vicinity of the beach that could disorient wildlife, especially nesting turtles ▪ no shore landing by motorized boats at any time of year ▪ no clearing or removal of foreshore vegetation

	<p>turtle nesting season, restrict unsupervised access, instead provide wildlife observation and interpretation/education activities</p> <ul style="list-style-type: none">• coordinate with schools and research institutions to avail of opportunities <p>Management Activities include a combination of year-round site maintenance to ensure adequate standards of hygiene and cleanliness, high visitor interface for purposes of informing visitors of the opportunity, and influencing and controlling visitor behavior. The management of anti-social and harmful behavior to wildlife and turtle nesting in particular, will be high priority task.</p>	
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Figure 11. Recreation Zone – Beach

Table 14. Recreation Zone – Marine (REZ – M)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
<p>Recreation – Marine (Figure 12)</p>	<p>Management Emphasis on the provision of water-based recreation and sports activities in an open water environment at suitable distance from sensitive marine habitats, and where higher impact activities can be accommodated. Use conflicts are of major concern.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • ensure that active water recreation and sports activities within the PA are confined only to the designated Recreation Marine Zone • establish defined areas and schedules for different recreation/sports activities to avoid user conflict • establish defined areas and schedules for the sake of safety • achieve involvement of water sports clubs, associations and bodies in the establishment and administration of organized sporting activities and events • work progressively to replace two stroke engines with four-stroke technology in all motorized craft. <p>Management Tasks:</p> <ul style="list-style-type: none"> • surveillance • policing and enforcement • negotiation and coordination with stakeholder groups and organizations • plan and design shore-based recreation and sports support facilities in suitable locations • plan and design the installation of marker buoys to define zones for different sports, etc. 	<p>Permitted uses include:</p> <ul style="list-style-type: none"> - swimming - yacht and dinghy sailing - canoeing and kayaking - rowing (sculling, etc.) - paragliding - scuba diving - sports fishing - ‘catch and release’ competition fishing - anchoring on designated buoys only <p>An essential feature of marine recreation activities is that space requirements of the larger, higher speed and motorized activities (e.g. yacht racing) will need to spill out of the designated recreation zone to adjacent water areas. This will be allowed only in the adjacent Marine Buffer zone (northern side of zone boundary). Such activities may not, under any circumstances, intrude into the Marine Habitat zone, or Sustainable Use zone adjacent to Grande Island.</p> <p>There shall be:</p> <ul style="list-style-type: none"> ▪ no water-based recreation or sporting activities allowed to intrude into the adjacent Marine Habitat zone or

	<ul style="list-style-type: none"> • coordination and negotiation with the Subic Bay Port Authority to resolve issues associated with navigable channels, shipping movement, etc. <p>Management Activities include a high degree of contact with water recreation and water sports organizations to ensure activities are being undertaken in identified zones in accordance with legal/contract agreements. Activities will include regular audit of operators, sites, review of agreements. Inspection of shore-based establishments within the PA on continuing and regular basis. Maximum degree of coordination and consultation with operators to ensure early detection of problems/issues. High degree of negotiation and conflict resolution to resolve disputes, management conflicts, etc.</p>	<p>Sustainable Use zone (Grande Is.)</p> <ul style="list-style-type: none"> ▪ no direct disposal of waste or sillage into the marine environment ▪ no shore-based facilities, except in locations approved by the PAMO and in accordance with the PAMP ▪ no incidental launching of water sports/recreation craft from other than authorized launch sites.
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Figure 12. Recreation Zone – Marine (REZ – M)

Table 15. Recreation Zone – Swimming

	Management Emphasis	Acceptable Uses and Facilities – performance standards
<p>Recreation – Swimming (within REZ-M) (Figure 13)</p>	<p>Management Emphasis on the provision of a low intensity, low impact recreation opportunity</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • allow safe swimming venue in the immediate nearshore swimming zone of Grande Island • limit visitor numbers and activities to sustainable levels • provide sufficient visitor amenities and facilities to ensure no environmental pressure is placed on the intertidal and subtidal zone • ensure safe conditions for swimmers <p>Management Tasks:</p> <ul style="list-style-type: none"> • supervision and surveillance • policing and enforcement • control and education • installation of suitable signage • installation of marker buoys in swimming areas to avoid intrusion into sensitive habitats • coordinate swimming zones and opportunity with whole of island planning and management <p>Management Activities involve a high degree of direct interaction with the visiting public and assessment of swimming activity that may impact on sensitive marine habitat.</p>	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ swimming in open water within 50 meters of the shoreline ▪ no interference, taking, destruction or damage of marine biota ▪ suspension of swimming at any portion of the swimming zone if required to reduce impact on a marine species or habitat ▪ no use of windcraft or motorized craft in designated swimming areas (except within navigable channel to landing jetty)

Figure 13. Recreation Zone – Swimming

Table 16. Multiple Use Zone (MUZ)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
<p>Multiple Use (Figure 15)</p>	<p>Management Emphasis on multi-facetted planning and management of a variety of activities and requirements, including land management, activity management, land restoration, revegetation, and implementation of alternative livelihood strategies.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> • permit a wide range of activities compatible with the environmental conditions, terrain and carrying capacity of the sites in question • ensure that existing environmental values (e.g. remnant vegetation, habitats, wildlife populations, etc.) are generally protected • ensure that natural processes (e.g. surface drainage) are not impacted or unduly altered • ensure that natural flow regimes in surface drainage are maintained at natural, equilibrium levels • ensure that activities in the multiple use zone do not result in the increase in land degradation (e.g. fire, erosion) • achieve restoration of degraded sites • achieve reforestation of suitable areas requiring the reinstatement of forest or natural vegetation cover <p>Management Tasks:</p> <ul style="list-style-type: none"> • surveillance and monitoring of activities and environmental conditions • policing and enforcement 	<p>Permitted activities include:</p> <ul style="list-style-type: none"> ▪ indigenous peoples’ traditional activities (forest materials gathering, hunting, forest species planting/husbandry, ritual/ceremony, etc.) ▪ approved alternative livelihood activities for indigenous people and other nominated groups ▪ passive and active recreation (trekking, walking, equestrian/trail riding) ▪ natural area sporting activities (orienteeing, mountain bike racing, etc.) <p>All activities will require a high degree of interaction with various stakeholders, land occupiers and Aeta indigenous people.</p> <ul style="list-style-type: none"> ▪ Traditional activities must be environmentally compatible and will be subject to management plan provisions, regulation and monitoring, and subject to permits ▪ Alternative livelihood programs will be

	<ul style="list-style-type: none"> • liaison with stakeholders, activity organizations, land occupiers, land owners, government agencies • participation in formulation and supervision of alternative livelihood practices • negotiation with recreation, ecotourism and tourism operators • administration of contracts, agreements, contracts associated with recreation/tourism service operators • education and attitude/value changing <p>Management Activities include: A high degree of contact with ecotourism, recreation and tourism operators to ensure activities are being undertaken in accordance with the requirements of the PAMP and legal/contract agreements. Activities will include regular audit of operators, sites, review of agreements. Inspection of establishments on continuing and regular basis. Maximum degree of coordination and consultation with operators to ensure early detection of problems/issues. High degree of negotiation and conflict resolution to resolve disputes, management conflicts, etc.</p>	<p>subject to project feasibility studies and environmental impact assessment – and must be in compliance with the PAMP</p> <ul style="list-style-type: none"> ▪ Passive and active recreation must be in accordance with the provisions of PAMP ▪ Trails (trek, equestrian, mountain bike, etc.), will only be permitted on authorized trails and routes ▪ Nature based sports will only be permitted on authorized sites/routes <p>Specifically prohibited activities in this zone include:</p> <ul style="list-style-type: none"> ▪ urbanization ▪ commercial retailing ▪ manufacturing (light, heavy, natural resource processing) ▪ infrastructure ▪ use of explosives, chemicals and fine meshed nets for fishing
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Figure 14. Multiple Use Zone (MUZ)

Table 17. Special Use – Zone (SPZ)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
<p>Special Use (Figure 15)</p>	<p>Management Emphasis on the consultation and liaison with land use activities and operators in the various special use zones/areas</p> <p>Management Objectives include the following.</p> <ol style="list-style-type: none"> 1. to ensure that land use activities and developments within the Special Use zone adopt accepted planning and design standards with respect to: <ul style="list-style-type: none"> • height restrictions; • architectural design standards; • appropriate landscape treatment, including restrictions on the use of inappropriate exotic plant species, low impact lighting, retention of existing/remnant natural vegetation, etc.; • appropriate traffic management (access and egress, and parking provision); • providing design guidelines for road maintenance and highway upgrades that protect the environmental values and ecological processes of the zones and habitats through the road/highway passes (see Strategy 12 – Volume 2, Section 6.3.12) • appropriate scale of development and intensity of activity, according to site capacity and condition; • appropriate hours of operation; • appropriate provision for 	<p>Permitted activities include:</p> <ul style="list-style-type: none"> ▪ historically inherited land use activities that can not be terminated or removed despite incompatibility with PAMP objectives (airport, port functions, storage, depots) ▪ historically inherited sites and activities that are compatible with PAMP objectives (e.g. commercial tourism nodes, golf courses, equestrian centers, residential precincts) ▪ mining/basic raw material quarrying ▪ road upgrades subject to EIA process and compatibility of engineering solution with environmental protection requirements of the SBPA management zone through which each section of the road passes (see also Strategy 12 – Volume 2, Section 6.3.12) <p>Prohibited Activities include:</p> <ul style="list-style-type: none"> ▪ any use of either air pollution/emission contours or risk and

	<p>management of surface run-off, containment of contaminants and surface water (stormwater) treatment;</p> <ul style="list-style-type: none"> • control of air emissions; and • appropriate perimeter controls, adequate development boundary setbacks, and buffer treatment (i.e. screening, security, manageable edge, etc). <p>2. to ensure there is a maximum degree of integration of Special Use zone activities with the management objectives of adjacent PAMP management zones</p> <p>Management Tasks:</p> <ul style="list-style-type: none"> ▪ surveillance and reporting ▪ coordination and participation ▪ education and information dissemination ▪ liaison with all operators, occupiers and land owners on a need basis ▪ participation in the planning for special use zone activities and developments and represent PAMB interests ▪ guide and administer the EIA process for highway upgrade programs, to ensure compatibility with management zone objectives <p>Management Activities involves a high degree of liaison with all stakeholders and government agencies (SBMA Departments) with control over activities in the Special Use zone areas.</p>	<p>hazard contours that are unacceptable for protected area/national park/human use and human presence localities (by accepted international standards)</p> <ul style="list-style-type: none"> ▪ dumping of wastes to the marine environment ▪ unauthorized extension of any Special Use zone activity into the adjacent PA management zones
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Figure 15. Special Use – Zone (SPZ)

Table 18. Special Use Zone – Vegetation Protection

	Management Emphasis	Acceptable Uses and Facilities – performance standards
Vegetation Protection (within SPZ-T1) (Figure 16)	<p>Management Emphasis on achieving a cooperation with landowners, occupiers in pursuit of landscape protection objective.</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> ▪ retention of existing vegetation covers along northern side of Triboa Bay, in the vicinity of the airport and holiday chalets. ▪ Protect northern coastal landscape and scenic qualities of Triboa Bay <p>Management Tasks:</p> <ul style="list-style-type: none"> ▪ Liaison ▪ Negotiation <p>Management Activity involves careful, ongoing negotiation and liaison at developing a mutual and binding agreement on retention and/or replacement of existing vegetation cover on the nominated sites.</p>	No change of existing use, or density of use, such that existing vegetation (tall canopy, deep rooted) can remain intact is preferred.

Figure 16. Special Use Zone – Vegetation Protection

Table 19. Special Use Zone – Park Infrastructure and Administration

	Management Emphasis	Acceptable Uses and Facilities – performance standards
<p>Park Infrastructure and Administration (within SPZ-T2) (Figure 17)</p>	<p>Management Emphasis on creating a strong sense of park administration</p> <p>Management Objectives:</p> <ul style="list-style-type: none"> ▪ demolish and remove all redundant activities and structures ▪ relocate existing incompatible uses ▪ develop strong park theme ▪ create a design approach that conveys core park functions ▪ establish education, interpretation, and scientific research center ▪ establish conference, workshop and seminar/events center ▪ create total complex of visitor attractions ▪ establish a key park control point, for visitor and vehicular traffic ▪ establish a core vehicle park and terminus for internal mass transport <p>Management Tasks: Plan and design a park center complex and facility</p> <ul style="list-style-type: none"> • undertake land use redevelopment, recycle existing structures, remove redundant structures, and construct new infrastructure • negotiate agreements and participation of stakeholders and education, research institutions • land management and habitat protection • monitoring and reporting 	<p>There shall be:</p> <ul style="list-style-type: none"> ▪ acceptable levels of environmental protection maintained ▪ high level of landscape quality and design maintained ▪ maximum degree of integration with park complex facilities and park infrastructure (depot, nursery, etc.)

	Management Emphasis	Acceptable Uses and Facilities – performance standards
	Management Activities: <ul style="list-style-type: none">• ongoing planning and design• ongoing land management and maintenance of infrastructure• management of PA visitors and through traffic	

Figure 17. Special Use Zone – Park Infrastructure and Administration

4.0 BUFFER ZONE

An integrated buffer system is advocated by the PAMP, including both the formalized buffer components recognized under NIPAS, and the additional designations outlined above. The combined buffer system consists of the following (see Figure 18):

- Buffer zone in total, both terrestrial and marine;
- Buffer sub-zones, including;
 - Terrestrial (Urban) sub-zone 1
 - Terrestrial (Economic and Multiple Use) sub-zone 2
 - Terrestrial (Settlement/multiple use) sub-zone 3
 - Terrestrial (Complementary buffer Bataan National Park) sub-zone 4
 - Marine (Outer Bay) sub-zone 1
 - Marine (Inner Bay) sub-zone 2
 - Information, Education and Communications Area;
 - Integrated Catchment Management Policy Area (Subic location);
 - Olongapo Watershed and Integrated Catchment Management Policy Area; and
 - Other portions of the SBFZ.

In the Flora and Fauna Protection Guidelines report a further set of sub-categories is used (e.g. Urban, Rural/Agricultural, Forest, Marine/Coastal) in order to allow easy definition of the various guidelines and techniques.

Table 20 illustrates the relationship of the varied terms in use and the various categories identified. See also Figure 18.

Table 20. Relationship of Specific Area Guidelines to Buffer Zone Categories

Subic Bay PAMP Buffer Zone - Subzones (DENR guidelines)	Outer Buffer Areas (not DENR guidelines)	Broad Land Use type	Flora Fauna Protection Guidelines Report - terms (Section 4 Specific Area Guidelines)
Terrestrial Sub-zone 1		Mixed built urban (residential and industrial)	<i>Urban Areas</i>
Terrestrial Sub-zone 2		Settlements, grassland, plantation agriculture, traditional activities, etc.	<i>Rural Agricultural Areas</i>
Terrestrial Sub-zone 3		Settlements, fishing, intensive irrigated agriculture, grasslands, plantation agriculture	<i>Rural Agricultural Areas</i>

Subic Bay PAMP Buffer Zone - Subzones (DENR guidelines)	Outer Buffer Areas (not DENR guidelines)	Broad Land Use type	Flora Fauna Protection Guidelines Report - terms (Section 4 Specific Area Guidelines)
Terrestrial Sub-zone 4		Open grassland, plantation agriculture, forest clearing, forest gathering, alternative livelihoods	<i>Forest Areas and Rural Agricultural Areas</i>
Marine Sub-zone 1		Navigation, shipping, fishing and recreation. Grasslands, and forest clearing.	<i>Marine Coastal Areas</i>
Marine Sub-zone 2		Navigation, shipping, fishing and recreation	<i>Marine Coastal Areas</i>
	Information, Education, Communication Area	Fishing, shipping, recreation, aquaculture	<i>Marine Coastal Areas</i>
	Integrated Catchment Management Policy Area	Farming, forest clearing, timber felling, settlements, industry, aquaculture, etc.	<i>Forest Areas, Marine Coastal Areas, Rural Agricultural Areas</i>
	Olongapo Watershed Integrated Catchment Management Policy Area	Urban, farming, timber felling, clearing, plantation agriculture, water shed	<i>Urban Areas, Marine Coastal Areas, Forest Areas, Rural Agricultural Areas</i>

4.1 Terrestrial Sub-Zone 1 (Urban – Built-up)

Terrestrial Sub-zone 1 is predominantly an urban land use environment. Due to the complexity of the environment type, for description purposes it is divided further into four sub-areas. These are:

- Subic Industrial Park and Subic Gateway
- East Bajac-bajac
- Kalayaan Residential Area
- Linear Highway Development Corridor

Figure 18. Buffer Zones

4.1.1 Subic Industrial Park and Subic Gateway

Issues

Urban land use activity over the vacant land parcels is expanding towards the PA boundary. Distinct urban land use ‘edge’ exists, although informal periphery activities are not well controlled in places. Effluent/waste water disposal to a reticulated drainage system is in place. Potential exists for air pollution and visual intrusion having detrimental impact upon the PA.

Needs/Strategies

Use of policy and regulations to maintain a high level of urban land use and ‘built’ environmental amenity is required. Strict control and maintenance of the PA boundary is also required. Reticulated sewerage treatment needs to be upgraded and capacity increased in due course.

4.1.2 East Bajac-Bajac

Issues

Poorly serviced or unserviced urban enclave, with depressed and low-income socio-economic characteristics. Poor layout and probable absence of development control. Tenure is uncertain and possibly complicated by informal ownership and occupancy. Urban edge/perimeter fence is habitually breached in places and requires constant management/surveillance. Steep terrain in parts is potentially unstable and a potential fire hazard exists due to the higher density development of substandard housing.

Needs/Strategies

Ultimately this area would benefit from urban redevelopment and in parts rehabilitation to non-urban use. In the meantime, a need exists to retrofit this area with basic urban services (streets and access, stormwater drainage, sewerage, lighting and security, etc.). The PA boundary and perimeter fence requires continuing surveillance and high standard of maintenance, with control over unauthorized incursions into the PA from the neighboring residential area.

4.1.3 Kalayaan Residential Area

Issues

Effluent and urban drainage is currently disposed of to the natural drainage system. A high quality and well-maintained perimeter fence exists.

Needs/strategies

Urban effluent and stormwater disposal needs to be upgraded. Wastewater treatment is required. Continued maintenance of perimeter fencing should be undertaken.

4.1.4 Linear Highway Development Corridor

Issues

Linear strip development dominates. This reflects and reinforces inadequate forward planning and insufficient control over development. A key issue is the potential for increased pollutants entering the Santa Rita River catchment system due to poor land use standards and development control (e.g. settlement spread without basic infrastructure). This would result in increased pollution pressure on the Subic Bay marine environment.

Needs/Strategies

A need exists for more ordered highway planning and adjacent development control. Forward strategic planning to address strip development and lack of infrastructure services is required.

4.2 Terrestrial Sub-Zone 2 (Economic, Multiple Use)

This sub-zone is an area dominated by rural settlements, general agricultural land use and plantation agriculture. Identifiable land use/environment 'sub-sets' of this sub-zone fall under the following categories:

- Remnant vegetation areas
- Agricultural/rural land use
- Cropping areas
- Major river valleys
- Roosevelt National Park
- Pastolan Aeta Community Area

Apart from Roosevelt National Park, these sub-sets or areas do not have tightly defined spatial areas. Their areas tend to merge where transitional change to a different land use/landscape type occurs.

4.2.1 Remnant Vegetation Areas

Issues

There is a notable decline in areas of remnant natural forest and vegetation. The principal threats are the encroachment of development, hunting and poaching by the general community, and the spread of fires.

Needs/strategies

Remnant forest, woodland and enclaves of remnant vegetation require active protection to avoid slow loss over time. Other areas require re-establishment in the form of active reforestation in order to secure and strengthen remaining values. Stands of timber that are essential to local communities should be established and made available through active mechanisms to offset destruction of remnant natural forest. Coordination of strategies, control mechanisms and management programs with activities in Bataan Natural Park should be undertaken.

4.2.2 Agricultural/Rural Areas

Issues

The large areas within this sub-set have developed in a haphazard manner. There is an absence of forward strategic planning to guide future land use change. The legal status of large tracts of land is also uncertain. Natural resource values as a basis for determining future land use change are not well analyzed or documented.

Needs/Strategies

Such areas need a comprehensive rural planning strategy to guide future change. Where uncontrolled activities have occurred, consolidation of fragmented land holdings and small farmlots into more efficient units of production with appropriate cooperative membership, participation and control should be taken.

4.2.3 Cropping Areas

Issues

A significant degree of fragmentation of landholdings is occurring and represents a damaging trend to overall natural resource utilization and management. Low productivity result from ineffective means of production. The status of tenure over much of the land area is unclear.

Needs/Strategies

The implementation of agricultural development programs, in conjunction with strategic planning initiatives should take place. Other requirements include the provision of alternative livelihood strategies for the communities in need, reforestation projects in locations suitable for rehabilitation (uplands, steep terrain, remote locations), and coordinated fire prevention strategies in exposed grassland environments. Finally, planning strategies and development control procedures should ensure that there is a restriction on the further unplanned spread of existing settlements.

4.2.4 Major River Valleys

Issues

There is a need to retain all riverine associated vegetation, and hence maintain riverine habitat values, the integrity of river landscape features, as well as the linear ‘green’ (wildlife movement) corridors through the catchment. The main concerns are the potential for riverbank erosion and for siltation in surface water bodies, and the sediment load transported downstream into Subic Bay.

Needs/Strategies

The main need is for ongoing protection of surface water bodies through the following initiatives:

- establishing development set-backs in the vicinity of river banks and floodplain areas;
- retaining vegetation corridors and buffers along the full length of river courses;
- placing ‘easements’ beside river systems to ensure unwise development is kept away from river tributaries;
- implementing river bank stabilization programs; and
- formalizing the function of vegetated river corridors as linear linkages through the landscape for the movement of wildlife.

4.2.5 Roosevelt National Park

Issues

The Roosevelt National Park contains important natural values that are important aspects of the environmental values of the overall Buffer Zone. The main concerns are erosion of these values due to encroaching development and land use and by the spread of incompatible uses within the park itself.

Needs/Strategies

There is a need to ensure that management of the Roosevelt National Park is coordinated and strengthened with strategies and actions to protect environmental values in the Buffer Zone. Reforestation and adequate fire prevention/management are key requirements.

4.2.6 Pastolan Aeta Community Area**Issues**

The landform in areas of higher sloping country is moderately erosion prone. The fire risk is potentially high in less well-tended areas of vegetation cover.

Needs/Strategies

This area is in the control of the Aeta community. There is therefore a need to strengthen the environmental management capability and expertise of the Aeta. Environmental management needs include erosion control and re-vegetation of footslopes and steeper terrain. Strategies to protect remnant stands of forest are also required.

4.3 Terrestrial Sub-Zone 3 (Built up, Settlement, Economic, Rural/Agricultural, Forest)

This sub-zone is an area of mixed land use ranging from significant enclaves of remnant forest to intensive irrigated agriculture and coastal settlements. The corresponding land use sub-sets in this buffer sub-zone include:

- open woodland/brushland rural landscape
- open grassland
- intensive agricultural (e.g. rice paddies)
- fishing settlements
- major ridge-lines and escarpment
- sand beach
- surface water course/river valley

4.3.1 Open Woodland/Brushland Rural Landscape**Issues**

Inefficient land use patterns in the absence of a strategic planning framework presents high risk for environmentally impacting land use development in the future and presents high exposure to ill-conceived land/development speculative activities. Low productivity agriculture combined with poor land management increases the risk of widespread

environmental deterioration (loss of vegetation cover, fire, spread of pests, exposure to erosion and sedimentation, etc. Potential input of nutrients and contaminants to the Subic Bay environment from intensive agriculture and coastal settlements is high. Overall this area is a highly strategic location, in view of its relative location to high quality terrestrial landscapes, coastline and marine environment. It also holds high potential for land use investment and development by its close proximity to both the Protected Area and Bataan Natural Park.

Needs/Strategies

Terrestrial Sub-zone 3 requires the preparation of a strategic rural plan to guide overall land use change. A rural development strategy is therefore a high priority. To ensure that agricultural activity is more productive and efficient, and to protect environmental values, assistance for agricultural and farm development planning is a high priority.

4.3.2 Open Grassland

Issues

Land management practices are uniformly poor throughout the zone. The resultant vegetation cover of grasses is overgrown and dense in parts, presenting a correspondingly high fire risk during the drier parts of the year. On steeper slopes especially, and where the grass cover is sparse, a high vulnerability to soil erosion is evident.

Needs/Strategies

The principal environmental measures required for this sub-zone are comprehensive fire protection and reforestation. These measures first require the preparation and implementation of:

- rural land use strategy to guide future land use;
- agricultural and farm development programs to improve land management practices;
- coordinated fire prevention/protection plans; and
- reforestation programs as part of all of the above, to reinstate appropriate deep rooted vegetation cover and create greater potential economic return for existing land occupiers/owners.

4.3.3 Intensive Agricultural (Rice Paddies)

Issues

This land use unit is likely or has the potential to be an intense source of pollutants entering the surface drainage system and being transported directly into both the Binanga River and marine environment of Port Binanga Bay. Pollutants are expected to include nutrients (fertilizer, organic material, animal waste) and contaminants (crop pesticides,

fecal coliforms from animal wastes). During dry periods, formerly wet paddies present a fire risk, given the relatively higher level of workers and local community in the area. Very close proximity to the edge of the PA forest (Sustainable Uses Zone) is also an issue requiring careful edge/boundary management.

Needs/strategies

This intensive agricultural zone requires the following instruments to minimize impacts on adjacent environmental values:

- rural strategy to ensure that consistent and compatible land use continues in the location, and that settlement growth or expansion of residences is restricted;
- agricultural/farming improvement plans are needed to guide and encourage suitable land management practices;
- provide pesticide use and control programs; and
- provide nutrient control/minimization strategies.

It is likely that some form of ‘farm extension advisory’ program will be required to instruct and guide farmers on various new practices.

4.3.4 Fishing Settlements**Issues**

Field investigation suggests that the settlement have no urban wastewater treatment system and possibly no solid waste collection/disposal facilities. The absence of these facilities presents a considerable pollution threat to the waters of Port Binanga Bay. Although the village is long established, and shows little sign of recent expansion or new development, it is nevertheless strategically located in an attractive setting and hence could be the focus of redevelopment intentions associated with the tourism and recreation development industry.

Needs/Strategies

The settlement requires strategic settlement master plan in anticipation of future potential growth and investment. In addition, there is a need to provide improved water supply, as well as waste water treatment and solid waste disposal strategy/facilities.

4.3.5 Major Ridgelines and Escarpment**Issues**

These are prominent and important landscape/physical features. The steep slopes are highly susceptible to erosion; hence the retention of maximum vegetation cover is paramount. Their other major value is as key landscape features. This value would be

severely compromised and would result in a significant degradation of the visual qualities of the area (in addition to soil erosion) if the existing vegetation cover is not maintained. Because these locations are close to centers of population, the risk of fire during the dry season is high.

Needs/Strategies

Existing vegetation should be protected as a matter of high priority. Where vegetation has been cleared, reforestation is required. There is therefore need for the *barangay* to establish landscape protection zones over these key feature and ensure no further clearing occurs and that development does not intrude. The principal mechanism to achieve this is via the preparation and implementation of Rural Planning Strategy, supported by the establishment and enforcement of suitable ordinances.

4.3.6 Sand Beach**Issues**

Retaining the quality of the beach and immediate shoreline/coastal land area in good condition is necessary if the value of this resource for future recreational and tourism use is to be realized. This has important implications for the protection of the beaches in the PA itself. The future of the fishing settlement and land use generally in these locations are all related factors.

Needs/Strategies

The future management and use of the beach should be specifically addressed in a Land Use Strategy Plan for the Port Binanga Bay area. The various interlinked issues (ridgeline, escarpment, settlement planning, management of intensive agriculture) must be considered if the optimum future benefit of the beach is to be achieved. The need for a strategy plan for the environmental values of the marine environment should also be recognized.

4.3.7 Surface Watercourse and River Valleys**Issues**

As critical components of the surface drainage system both function to collect, concentrate and transport pollutants from surrounding land use activities into the marine environment.

Needs/Strategies

The main need is for ongoing protection of surface water bodies through the following initiatives:

- establishing development set-backs in the vicinity of river banks and floodplain areas;
- retaining vegetation corridors and buffers along the full length of river courses;
- placing ‘easements’ beside river systems to ensure unwise development is kept away from river tributaries;
- implementing river bank stabilization programs; and
- formalizing the function of vegetated river corridors as linear linkages through the landscape for the movement of wildlife.

4.4 Terrestrial Sub-Zone (Bataan Natural Park)

Bataan Natural Park lies adjacent to the southern and eastern edges of the PA boundary. Consequently, the adjacent management zones of Bataan Natural Park (BNP) form a natural buffer to the PA, and vice versa (the adjacent PA management zones can be considered buffers to the BNP).

Issues

First, the land areas referred to are under the jurisdiction of the Bataan Natural Park. Hence, control of activities is already securely in the hands of an existing agency/organization.

Second, practical coordinated management outcomes must be achieved through appropriate liaison/coordination with BNP. BNP regard these areas to be functional in practical terms as the ‘buffer zones’ for the BNP core restricted areas. There is no reason why entirely congruent objectives and outcomes can not be achieved for both ‘protected area’ systems.

In locations characterized by agricultural clearings (plantations, swidden, grassland, etc.) along the southern boundary of the PA in particular, there are a number of small, established communities that are participants in formal ‘alternative livelihood programs’ run by/with the cooperation of the Bataan Natural Park administration. These are aimed at preventing the further establishment of inappropriate activities, stabilizing existing activities and preventing a further expansion of population in the locality. These initiatives are critically important in reducing the incidence of environmental impact in such locations due to uncontrolled activities.

Needs/Strategies

The principal need is to ensure cooperative, coordinated management planning and management programs of both Protected Area administrations.

4.5 Marine Sub-Zone 1 (Outer Bay)

Marine Sub-zone 1(Outer Bay) comprise both terrestrial and aquatic/marine areas.

4.5.1 Aquatic/Marine Environment**Issues**

The deeper, outer waters of Subic Bay are well flushed and have high circulation rates being more exposed to oceanic conditions. Issues principally relate to appropriate fishing activity (pelagic and reefal), navigation/ship movements, and the potential for inappropriate marine coastal development (e.g. mariculture/fishcage farming, etc.). The potential impacts from poorly planned, located and managed fish farming presents a significant concern.

Needs/Strategies

The principal needs are for coastal and near shore management activities, in order to:

- control and restrict harmful activities
- undertake surveillance of existing activities
- enforcement of legal/statutory provisions concerning permitted and restricted activities

There is also the need for implementation of suitable community development programs and alternative livelihood programs, so that existing harmful practices can be stopped and dependent communities provided with more appropriate, sustainable income sources.

4.5.2 Terrestrial Environment**Issues**

The exposed land areas that have been cleared are highly vulnerable to fire and subsequent erosion of exposed topsoil. This particularly applies to all steeply sloping terrain. Control over land titles and land use is problematic - many land use activities (forest clearing) are thought to be illicit.

Needs/Strategies

As with all more remote land areas in the buffer there is a need for a strategic plan to determine appropriate existing and future land use activities. Strong control of illicit and environmentally damaging activities is essential. Surveillance and enforcement of suitable policies and ordinances should be an outcome of suitable strategic planning.

4.6 Marine Sub-Zone 2 (Inner Bay)

Marine Sub-zone 2 (Inner Bay) comprise both terrestrial and aquatic/marine areas.

4.6.1 Terrestrial Environment**Issues**

The principal issues in this sub-area include early signs of land use spread into this area. In the absence of any forward planning, land use change is likely to be random and poorly coordinated, responding to largely opportunistic initiatives. Other issues include the high potential for fire, absence of tree cover, and the susceptibility of exposed soils on steep slopes to erosion. In this location increased sediment loads into the marine environment have a particularly high potential to negatively impact the remaining coral reef systems.

Needs/Strategies

The requirements for this sub-area include the following:

- strategic plan to designate where various land use change can occur, to be based on land capability and natural resource protection criteria;
- reforestation of steep terrain and upper slopes; and
- increased coastal management to prevent further spread of haphazard developments and environmentally unsound practices.

4.6.2 Marine Environment**Issues**

The main concerns are twofold; extensive overuse of the remaining marine resources by the community, and excessive harmful inputs from the surrounding catchment areas. Both are causing moderate to high deterioration of much of the marine environment in this sub-zone, especially the more northerly and easterly portions nearest the pollution sources and most intense human activity. Issues associated with impacts arising from the land-based catchment, particularly the Olongapo urban catchment, are critical.

Needs/Strategies

The need for coordinating environmental protection activities within the catchments surrounding Marine Sub-zone 2 is critical. Attention only to marine environment monitoring, surveillance and enforcement will not be sufficient. There is therefore need for a marine environment and associated catchment management program coordination.

In the marine portion alone the principal needs are for open water and near shore management activities, in order to:

- control and restrict harmful activities
- undertake surveillance of existing activities
- enforcement of legal/statutory provisions concerning permitted and restricted activities

There is also the need for implementation of suitable community development programs and alternative livelihood programs, so that existing harmful practices can be stopped and dependent communities provided with more appropriate, sustainable sources of income/livelihoods.

4.7 Information, Education, Communication Area (IECA)

4.7.1 Issues

The general environmental quality of this zone is low water quality, loss of most marine habitat (seagrass, coral), and over exploitation of marine fisheries. The critical issues in this portion of Subic Bay include:

- extensive spread of unregulated foreshore and coastal zone activities;
- extensive area and number of surface catchments/sub-catchments, with a correspondingly higher level of land use activity;
- significant built-up (urban) areas draining directly into the IECA;
- large number of stakeholders both using and concerned with this portion of Subic Bay.

4.7.2 Needs/Strategies

The IECA is designated because successful environment management of the remainder of Subic Bay also requires active management of the IECA in an appropriate form. Due to the very high human use and impact on this sub-area, and in view of the complex administrative context surrounding this most degraded portion of the aquatic environment, an education/communications based program is considered most appropriate.

The principal objective of an IEC program is to encourage an ‘all of community’ shift towards the way society generally uses the Subic Bay area. It is also to provide sufficient information and guidance to all relevant stakeholders and users such that the changes resulting in human behavior remove or alleviate the pressures and sources of impact on the aquatic environment.

The IEC program would therefore be aimed at informing and guiding the following principal stakeholder groups:

- general community, particularly schoolchildren
- local authority decision makers (elected representatives) and employees
- fishermen
- fishing industry
- banks and investment house/lending institutions
- national government agencies
- investors and developers

4.8 Integrated Catchment Management Policy Areas (ICMPA)

The integrated catchment management policy areas are identified and devised as part of the long term mechanism and wider approach to protecting the environmental values in the SBPA. Whilst these areas of land use and terrestrial environment extend well beyond the buffer zone, it is recognized that activities occurring in the terrestrial catchments will always have a high influence and potential impact on the marine environmental of Subic Bay.

Providing advice on policies and procedures for application in the ICMPAs is beyond the direct scope of the SB PAMP, and the jurisdiction of the PAMB. However, the broad scope and importance of this zone is referred to in other portions of the PAMP (e.g. Volumes 1 and 2), and in the Flora and Fauna Protection Guidelines document that accompanies the PAMP.

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