

The information contained within the Biodiversity Action Plan has been reviewed by the BP HSSE Group Biodiversity Advisor and staff - BP Indonesia.

We have a vision where industry is seen as a positive influence on the environment and BP Indonesia is recognised as the leader in demonstrating biodiversity conservation and sustainable use of natural resources – ensuring that the riches of Indonesia today will be available for future generations to enjoy tomorrow...

FORWARD

BP recognises that successfully implementing a sustainable biodiversity action plan in Indonesia will be a major challenge but it is one we face with enthusiasm and commitment. Building effective partnerships with private enterprise, national government, local governments, universities, non-governmental organisations, and local communities whose livelihoods depend on continuing access and the rights to use renewable natural resources will represent a milestone of far-sighted stewardship.

A relatively new concept, biodiversity requires learning more about the unknown or little known species while trying to fill the gaps of knowledge and information. Ironically, many of the regions considered important conservation areas are the ones least studied, often due to their remote locations, which until recently protected them from human encroachment. Today, these same regions are the focus of world attention, not only because of their rich biodiversity, but also because they contain other riches-timber, oil, gas, and minerals.

We must ensure that extracting those natural resource riches which are so vital for our quality of life is always accompanied by respect for the people and environment in these isolated areas which are home to a wide variety of plants, animals and ecosystems. Addressing these issues rigorously and with an emphasis on active community involvement will be fundamental to a successful and sustainable Biodiversity Action Plan.

We truly embrace this challenge and look forward to the time when, along with our many partners, we can report that our efforts - have made a real, measurable, and positive difference.

Bill Schrader
President, BP Indonesia

The BP Indonesia Biodiversity Action Plan demonstrates BP's commitment to biodiversity conservation in Indonesia. This plan is a living document. Like other plans, it will be able to stand alone, but it will not exist in isolation. It compliments our Environmental Impact Assessment (AMDAL) required by the Indonesian government as well as our Environmental Management Systems (EMS). This plan does not seek to be a part of, or support, every single conservation program in Indonesia; that would be unrealistic and would not achieve real, positive, or sustainable results.

Activities outlined in this biodiversity action plan will take place across Indonesia. However, initially, the BP Indonesia Biodiversity Action Plan will focus its province-level activities in the Berau Bintuni Bay region of Papua Province, and more specifically, in the area of its Tangguh LNG plant. BP Indonesia, with like-minded partners, will focus resources to support and promote targeted and practical solutions for priority biodiversity issues where we believe we can make a real, measurable and positive difference first in Papua Province then in subsequent biodiversity action plans. BP Indonesia will commit resources addressing biodiversity conservation and sustainable use issues in the other three performance units (BP West Java, VICO Indonesia and Kaltim Prima Coal) located in Java and Kalimantan Provinces respectively.

Indonesia is one of just 12 countries considered to have the greatest biodiversity on earth. Like other countries with high biodiversity values and rapidly expanding populations, Indonesia has tried to balance the use of its rich natural resources with preserving biodiversity for future generations. With increasing pressure on resources, ensuring the sustainable use of those resources to meet

the needs of Indonesians and the development of human capacity to effectively manage those resources are critical. Biodiversity conservation is no longer just an environmental issue; it is also a key social issue.

Because of increasing resource use conflicts, biodiversity conservation and sustainable use in Indonesia is also an important political issue, no longer limited to the conservation lobby. Today, organisations such as the World Bank, the International Monetary Fund, and others add conservation and environment-related stipulations to government loan conditions. In Indonesia, biodiversity issues such as forestry, coastal, and marine resources management, and air quality, receive regular and increasing coverage in the media. The use of these resources often results in conflicts over ownership and benefits. New regional autonomy, decentralisation, and special autonomy laws further complicate existing conflicts. These make the challenge of managing resources sustainably and equitably in the provinces a greater challenge for government bodies that often have limited management experience as previous decisions were made by central government. Biodiversity conservation is now not only a political issue but also an economic one of increasing importance.

The key to the resolution of the socio-political, economic, and ecological issues of biodiversity conservation is translating interest in change to practical action. BP recognises that practical action will only be sustainable if biodiversity stewardship is embraced within the countries where we work. Building capacity among conservation practitioners (conservation organisations, government, universities, and civil society) will help reduce biodiversity loss by moving towards sustainable management of the country's rich natural resources.



BP Indonesia, with support from BP Corporate Office, demonstrates its commitment to biodiversity conservation by contributing to and supporting the following key and integrated activities in BP Indonesia's Biodiversity Action Plan:

- 1 A conservation training and resource centre, building practical and applied conservation management capacity,*
- 2 A land use planning atlas, as part of a significant national series, for the Berau Bintuni Bay region,*
- 3 A strategic management plan for the Bintuni Bay Strict Nature Reserve,*
- 4 A business and biodiversity case study for the Tangguh LNG Plant as part of the Energy and Biodiversity Initiative,*
- 5 A significant ecology book on Papua, as part of The Ecology Of Indonesia Series,*
- 6 A targeted biodiversity baseline study with wise use recommendations for Tangguh,*
- 7 A charter membership in the Papua Conservation Fund, and*
- 8 A BP Indonesia staff biodiversity education, awareness and volunteer program.*



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INTRODUCTION

1

introduction



Tree kangaroo (*Dendrolagus goodfellowi*),
Common cuscus (*Phalanger orientalis*) and Deer (*Cervus timorensis*)

WHAT IS BIODIVERSITY?

Biodiversity represents the richness and variety of all living things that exist on earth—from the common and secure to the rare and endangered. It includes the variety of biological organisation at all levels from genes through species to habitats and ecosystems. Biodiversity is the basis of the life-support systems on which we all depend for our food, shelter, medicines, the water we drink, and the air we breathe.

Biodiversity as a concept was first introduced at the Smithsonian Biodiversity Conference in 1988. At that time, it was thought that more than half of the world's biodiversity was found in 17 countries. Today it is estimated that 50% to 80% of the world's biodiversity is found in fewer than 12 tropical countries. Estimates also suggest that as many as 20% of plant species and an even higher proportion of animal species are found on only 0.5% of the earth's surface. Indonesia covers only 1.3% of the earth's area, yet is home to 17% of the total number of species, many of which are endemic (e.g., found nowhere else in the world). For example, 250,000 to 1 million insect species are thought to inhabit Indonesia, although the global total is not yet known. Indonesia also possesses the greatest number of swallowtail butterfly and dragonfly species of any country in the world—121 butterfly species (44% endemic) and 666 dragonfly species. It is also home to a significant proportion of the earth's life:

- 11% of the entire world's plant species,
- Up to 40% of the world's molluscs,
- 12% of the world's mammal species,
- 17% of the world's bird species,
- 24% of the world's amphibian species,
- 32% of the world's reptilian species, and
- Up to 45% of the world's fish species.

Sources: United Nations Environment Programme (UNEP), World Conservation Monitoring Centre (WCMC).

Unfortunately, biodiversity is being lost at an alarming rate and is now a significant issue locally, regionally, and globally. Species are disappearing faster than we discover new ones, and their potential value for future generations is lost. The UNEP estimates that there are 13.6 million species on earth, of which only 1.75 million are currently known to science. It is clear that we have much to learn about biodiversity.

Indonesia ranks number one in the world for biodiversity, and ranks high in relative numbers of threatened species. The continued loss of biodiversity has consequences for all living things—not just endangered or rare animals and plants, but for humans too. For example, it is estimated that Indonesians use more than 6,000 species of native plants and animals every day. They are either harvested from the wild or cultivated, and used for multiple purposes, including food, medicines, and dyes. Figure 1 provides a summary of the global status of Indonesian flora and fauna.

The International Union for the Conservation of Nature (IUCN) tracks species under threat. Its *Year 2000 Red List of Threatened Species* provides taxonomic, conservation status, and distribution information on species that have been evaluated using the IUCN Red List categories. This system indicates the relative risk of extinction. Its main purpose is to catalogue the species that are regarded as threatened at a global level. According to these categories, "critically endangered" taxa are those facing an extremely high risk of extinction in the wild in the immediate future. These species have low population numbers and are often restricted to small geographical areas. (See Annex 8 for *2000 IUCN Red List* contact details)

FIGURE1: STATUS OF INDONESIA'S FLORA AND FAUNA

	Number of Species	Number of Endemic Species	Number of Globally Threatened Species [#]	Number of Critically Species
Mammals	436**	222**	140*	17*
Birds	1,519**	408**	113*	16*
Reptiles	514^	305^	28*	8*
Amphibians	285^	115^	0*	0*
Freshwater Fishes	1,400^	unknown	60*	7*
Plants	29,375**	17,500**	384*	119*

Sources: * Hilton-Taylor 2000
 ** WCMC 2000
 ^ Unpublished data compiled from multiple sources at UNEP-WCMC
 # Critically Endangered, Endangered, and Vulnerable categories only

LOSS OF BIODIVERSITY: AN INTEGRAL HUMAN IMPACTS

Like other countries with high biodiversity values and rapidly expanding populations, Indonesia has tried to balance the use of its rich natural resources with preserving biodiversity for future generations. In 1993, Indonesia's population was about 190 million. Today, estimates put it at about 250 million. With a rapidly expanding population and increasing pressure on resources, the adequate supply of resources to meet the needs of Indonesians and the development of human capacity to effectively manage those resources are critical. Biodiversity conservation is no longer just an environmental issue; it is also a key social issue.

Globally, loss of biodiversity is largely attributed to human impacts. These include:

- **Pollution** – releases of manmade or natural compounds at a scale or volume in excess of the environment's capacity to handle them (e.g., untreated sewage and wastewater, oil spills, sedimentation, cuttings piles, emissions plumes, and desalination brine).
- **Unsustainable Use of Natural Resources** – exploitation of resources at rates that exceed the ability of natural systems to respond or regenerate (e.g., unsustainable logging and land clearing practices, conversion of mangroves to fish ponds, dynamite and cyanide fishing practices, and overfishing).

- **Introduced Species** – introduction of non-native species, either planned or accidental, that have no local predators (e.g., from ballast water containing organisms with no local predators, imported pets or escapees from zoos or pet shops, and released livestock); imported soil (containing invasive plant species).
- **Land Use Changes** – footprints of site facilities, pipelines, shipping routes, roads that fragment fragile ecosystems and species, unchecked urban sprawl, unplanned or poorly planned development, and impacts and conflicts from transmigration activities that result in increased competition for area resources.
- **Global Climate Change** – global changes in the earth's surface temperature and ecosystems due to carbon-related air emissions.

BP recognises that as an energy company we are seen to have a clear impact on biodiversity. Many of the places in which we work contain sensitive environments, often with high biodiversity value, and we are under continuing scrutiny regarding biodiversity conservation and sustainable use. To that end, BP has made a significant and proactive commitment to biodiversity conservation and sustainable use of natural resources. BP Indonesia, with support from BP Corporate Office, is demonstrating its biodiversity commitment to Indonesia through the development and implementation of its Biodiversity Action Plan.

WHAT IS BP INDONESIA'S BIODIVERSITY ACTION PLAN?

BP Indonesia's Biodiversity Action Plan is a blueprint for translating BP's commitment to biodiversity conservation and sustainable use into practical action. The plan features several critical and wide-ranging characteristics:

- It is a living document.
- It encourages strategic partnerships as a method for maximising resources and building broader support for the plan's activities.
- It identifies, in partnership with others, results-orientated activities with benefits that are real, measurable, and positive.
- It uses a consultative process to design and implement activities, thus ensuring indigenous capacity building.
- It encourages the formation of new partnerships and the strengthening of existing ones, which increases opportunities to share information and experience.
- It complements and supports the Tangguh LNG Project Diversified Growth Strategy (DGS) (Annex 4).
- It creates and tests performance criteria that are currently being developed.
- It demonstrates good practices.
- It measures and shares results.

More specifically, this plan outlines BP's commitment to biodiversity conservation in Indonesia, beginning in the Berau Bintuni Bay region of Papua Province, by providing the means to describe this region's biodiversity riches and the threats they face, and by initiating actions to address biodiversity loss. For example, the 1993 Government of Indonesia Biodiversity Action Plan gave Papua the highest rating in Indonesia for species richness and endemism for both flora and fauna, and endemism for birds and plants, with high rankings for mammals and reptiles. It stated that more than 90% of Papua's forests were intact; today Conservation International estimates that only 75% to 80% of Papua's forests remain. Papua is still rich in biodiversity and endemic species, and BP is proud to be a partner with others in helping to reverse biodiversity loss by contributing to solutions that will have a positive impact on Papua's environment and empower Papua's people.

Activities outlined in the Biodiversity Action Plan will take place across Indonesia. Some activities focus on national and provincial levels, others involve our BP Jakarta staff, and still others will concentrate on communities near our operations. In this first version of the plan, we include a biodiversity education program for BP Indonesia's Jakarta staff and a range of activities centred on the Berau Bintuni Bay region of Papua Province, where the Tangguh LNG plant will be sited. BP Indonesia's other performance units (BP West Java, VICO Indonesia, and Kaltim Prima Coal) are developing similar biodiversity plans that will be included in future updates of the plan.



The future of the Magnificent paradise bird (*Cincinurus magnificus*) is threatened by habitat loss due to rapid land conversion



BP'S COMMITMENT TO BIODIVERSITY

2

BP's commitment to biodiversity



BP's commitment to biodiversity has taken us beyond business as usual. On 27 April 2000, Lord John Browne, BP Group Chief Executive, made a commitment to address the issue of biodiversity in a positive and proactive manner. He stated:

...we can have a real, measurable, and positive impact on the biodiversity of the world. That is a high aspiration—but like our other aspirations, we are determined to show that we can deliver...

BIODIVERSITY: AN INTEGRAL PART OF BP BUSINESS

Biodiversity conservation is not new to BP, but our knowledge of what we do to support biodiversity conservation and what we could be doing across our operations was incomplete. To define our biodiversity activities and related good business practices, we needed to know more, and we needed a framework to provide structure to the process. To accomplish this, BP Green Operations, part of the BP Global Business Centre, funded a project in November 1999 to gather information about biodiversity-related activities in our Business Units. BP, working with Fauna & Flora International, BP's global biodiversity partner, also developed strategic biodiversity themes consistent with the 1992 Convention on Biological Diversity (CBD). These themes are listed with a summary of our actions in Figure 2 below. In addition to developing the five themes, BP also commissioned an internal working paper entitled, "Indonesia Biodiversity Profile," prepared by the WCMC. This paper provided useful information and data for the BP Indonesia Biodiversity Action Plan.

Lord Browne's statement reaffirmed BP's ongoing commitment to biodiversity. Biodiversity conservation, as part of BP's operations, is:

- An integral component of the environmental planning and monitoring we conduct to assess the impacts of our operations (within and beyond the footprint of our operations).
- Basic to our commitment to reduce emissions of greenhouse gases and to continually improve our global environmental performance.
- Built into the planning that goes into deciding the most suitable approach for reclamation or rehabilitation of sites when we have completed our operations.
- Key to rehabilitation of habitats following an accident, such as an oil or chemical spill.
- One of the many factors we consider when we evaluate the sources of materials we purchase to run our business.



Bintuni Bay Strict Nature Reserve (Cagar Alam Teluk Bintuni)

BP's Biodiversity Conservation Stance

Biodiversity is a fundamental measure of the quality and health of the environment. It is addressed in the BP Health, Safety, and Environment (HSE) policy of no damage to the environment. No damage to the environment is roughly equivalent to no damage to biodiversity. To meet BP's commitment to biodiversity conservation, we need to go beyond the "no damage" threshold and work toward a positive impact on biodiversity to create a healthier environment. Biodiversity conservation and reducing loss of biodiversity will require us to go beyond compliance. BP stands committed to deliver on that promise.

Biodiversity Conservation and BP's Brand Values

The BP commitment to biodiversity is fundamental to our Brand Values:

- Performance – seeking to achieve world-class performance where and how we work.
- Innovative – seeking innovative partnerships and programs, and the best biodiversity conservation solutions.
- Green – seeking to practice our green values and to encourage others to do the same.
- Progressive – seeking to create standards that others will choose to replicate.

FIGURE 2: BP GLOBAL BIODIVERSITY THEMES AND BP INDONESIA'S BIODIVERSITY ACTIONS

BP Global Biodiversity Themes	BP Indonesia's Biodiversity Actions
<p>Responsible Operations – to understand our direct and indirect impacts on biodiversity conservation and to demonstrate continual improvement in our performance and leadership</p>	<p>Consultations with BP staff and partners to:</p> <ul style="list-style-type: none"> • Identify areas for improved environmental performance • Serve as a biodiversity information resource
<p>Public Policy – to contribute constructively to the public policy debate on biodiversity in Indonesia, the region, and the world</p>	<ul style="list-style-type: none"> • Work with Indonesia's National Planning Agency (BAPPENAS) to ensure that the BP Indonesia Biodiversity Action Plan supports Indonesia's Integrated Biodiversity Strategic Action Plan • Work with Indonesia's National Committee during the Prep Comm IV to identify strategic opportunities to highlight important biodiversity issues
<p>Conservation Projects – to create and strengthen collaborative partnerships, and contribute to and fund conservation activities aligned with local, regional, national, and global priorities</p>	<ul style="list-style-type: none"> • Work with partners such as the Ministry of Forestry, catalysing support for the Conservation Training Resource Centre (CTRC) • Ensure the development and implementation of a locally adopted sustainable management plan for the Bintuni Bay Strict Nature Reserve (linked as a field site for the CTRC) • Support the Berau Bintuni Bay region land use atlas in partnership with local planning agencies and universities (linked to CTRC and the DGS) • Support the Ecology of Indonesia Series book on Papua • Support the Papua Conservation Fund as a charter member
<p>Research, Education, and Empowerment – to make positive contributions to biodiversity research and education; improve the understanding of our employees, empower the people we work with and our customers, and promote lifestyle changes that support biodiversity conservation</p>	<ul style="list-style-type: none"> • Develop an interactive education program including a monthly biodiversity luncheon series for BP staff • Support a targeted biodiversity baseline survey for the Tangguh LNG plant site to develop a conservation plan • Identify environmental organisations and link them to BP for exchange of biodiversity information and resources • Educate stakeholders about biodiversity and encourage BP employees and families to become conservation volunteers; promoting BP Corporate Volunteer Program • Increase indigenous conservation capacity through the CTRC, particularly in Papua Province
<p>External Relations – to understand what is important to people and form partnerships to develop solutions to biodiversity issues</p>	<ul style="list-style-type: none"> • Use the Tangguh LNG site as the Energy and Biodiversity Initiative (EBI) case study on performance standards and monitoring to offer biodiversity conservation solutions to industry • Build new and reinforce existing partnerships through all activities with special emphasis on the CTRC



Dugong (*Dugong dugon*) being released by local people in Bintuni Bay;
Aerial view of Jesman Island Worldwar II air strip; *Pachyseries* coral





HISTORY OF BIODIVERSITY ACTION PLANS

3

history of biodiversity action plan



Land conversion is one of direct threats to the biodiversity;
Forest degradation caused by over-exploitation [right page]

HISTORY OF INTERNATIONAL BIODIVERSITY ACTION PLANS

The United Nations Conference on Environment and Development (UNCED), often referred to as the Earth Summit, was held in Rio de Janeiro, Brazil, in 1992. At the Earth Summit, the international community adopted a number of documents, including Agenda 21 (a global plan of action for sustainable development) and the Convention on Biological Diversity (CBD). Those in attendance at UNCED recognised the need to address increasing rates of biodiversity loss and acknowledged the important roles that individuals, organisations, statutory authorities, and businesses must play if losses to biodiversity are to be reversed.

Indonesia, along with other signatories to the CBD, agreed to:

...develop national strategies, plans, and programmes for the conservation and sustainable use of biological diversity...

Following the 1992 Earth Summit, many countries, local government entities, and businesses developed biodiversity action plans. These plans formed frameworks for action to conserve a wide range of species and habitats as well as to address broader environmental issues such as water, air, and climate change.

INDONESIA'S BIODIVERSITY ACTION PLAN AND REVIEW PROCESS

The Government of Indonesia published the Biodiversity Action Plan for Indonesia in 1993. Indonesia is revising its action plan and strategy following the implementation of regional autonomy and decentralisation. The new plan is called the Indonesia Biodiversity Strategic Action Plan (IBSAP) and is being co-ordinated by BAPPENAS (The National Planning Agency) with support from the Global Environment Facility (GEF) and the World Bank. The review process began in July 2001 and will conclude in December 2002.

The IBSAP will:

- Take stock of priority needs and actions to determine what has been achieved, what is still outstanding, and why required funding and actions have not been realised,
- Identify new priority needs and actions, revising the 1993 plan to reflect changes in environmental policies and decentralisation and regional autonomy laws,
- Determine opportunities for and constraints to effective conservation and sustainable use of the country's rich biodiversity (including pinpointing gaps in existing knowledge and setting realistic goals for closing those gaps), and
- Propose a new, clear biodiversity strategy with a detailed action plan for Indonesia.



The IBSAP Jakarta office organised a biodiversity stocktaking workshop on 6-7 November 2001 in Bogor for conservation organisations. The workshop assessed biodiversity conservation efforts over the last 10 years in Indonesia, identified gaps, and began the process of developing a biodiversity blueprint for conservation organisations and supporting donors to embrace. This stocktaking process will continue with regional workshops, scheduled to take place in provinces of Kalimantan, Papua, and Sulawesi in 2002. Three regional biodiversity action plan co-ordinators have been hired to organise the provincial workshops, assess progress, identify gaps in each province's conservation programs, and report back to a final national workshop, tentatively scheduled in fourth quarter of 2002.

The BP Indonesia Biodiversity Action Plan seeks to be consistent with, and supportive of, the IBSAP. BP will continue to maintain contact with the review team to help ensure that BP's activities remain consistent with the IBSAP. The IBSAP maintains a database [www.ibsap.org], along with a list serve site .

JOHANNESBURG 2002-WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT

The United Nations will host another earth summit in Johannesburg, South Africa, August/September 2002. This global gathering, also known as RIO+10, marks the 10th anniversary of the Earth Summit and the 30th anniversary of the 1972 UN Conference on the Human Environment held in Stockholm, Sweden. Mr. Kofi A. Annan, Secretary General of the United Nations, stated in October 2001 that the Johannesburg Summit 2002, as it is also called, "is an opportunity to rejuvenate the quest to build a more sustainable future." This global event will bring nations together to discuss issues and experiences, including biodiversity, and to set a course for the next 10 years.

The Indonesian Government will host the Preparatory Committee Meeting IV in Bali, Indonesia from 27 May to 7 June 2002. This important global event will establish the environmental and sustainable development positions of Indonesia and its conservation partners and will produce the associated documents to be presented at RIO+10. BP is exploring opportunities to share biodiversity experiences using the Tangguh LNG site biodiversity case study, during the Bali PrepComm IV and at RIO+10 in Johannesburg. Further information on the Summit is available at the RIO+10 website [www.johannesburgsummit.org].





BIODIVERSITY IN INDONESIA

4

biodiversity in indonesia



Low-land forest density and canopy

GEOLOGIC AND GEOGRAPHIC CONTEXT

Indonesia is comprised of more than 17,000 islands, extending more than 5,000 kilometres along the equator from the western island of Sumatra to the eastern border of Papua. It also crosses two of the world's major biogeographical realms: the Indo-Malayan realm and Australasian realm. The overlap zone of these two realms is regarded as a distinct biological sub-region, called Wallacea. Indonesia's western islands of Sumatra, Kalimantan, Java, and Bali, which lie on the Sunda Shelf, are known collectively as the Greater Sunda Islands. These islands were joined to mainland Asia during the Pleistocene era. The eastern island of New Guinea (Indonesia's Papua Province occupies its western half) and a number of nearby islands lie on the Sahul Shelf, previously connected to mainland Australia. The central islands of Sulawesi, Maluku, and Nusa Tenggara provinces lie in the transition zone of Wallacea.

The Greater Sunda Islands have predominantly Asiatic fauna, including tigers, leopards, rhinoceroses, sambar deer, sun bears, apes, and monkeys. The influence of the Australian continent can be seen in Sulawesi and Maluku, where marsupials are found. Here, and on the islands of Nusa Tenggara (also known as the Lesser Sunda Islands) east of Bali, Australian plant genera such as *Eucalyptus*, *Acacia*, and *Melaleuca* can be found. Changes in the fauna can also be seen in Wallacea, where lorikeets and cockatoos begin to replace Asiatic bird species. There are few monkeys, and the great apes and big cats have never lived here.

Because of the different geological origins of the various Indonesian islands, and the fact that many of them have been isolated for millennia, there is a rich diversity of flora and fauna, with extremely high endemism. The high levels of diversity and endemism are also attributed to the wide variety of habitats that exist throughout the Indonesian archipelago.

Indonesia is known as one of the centres of mega-biodiversity in the world. An estimated 47 different ecosystem types have been identified – encompassing 42 distinct natural terrestrial ecosystems and 5 coastal/marine ecosystems. These range from ice fields and alpine meadows to humid lowland forests, from deep lakes to shallow swamps, and extremely diverse coral reefs to mangrove wetlands and seagrass meadows.

There are six distinct biogeographical regions identified in Indonesia, centred on the major islands, island groups, and their surrounding seas. These regions are:

- Papua (including the Kai and Aru islands),
- Maluku,
- Nusa Tenggara,
- Kalimantan (including the Natuna and Anambas islands),
- Java and Bali, and
- Sumatra (including offshore islands).

BIODIVERSITY ACTION PLAN FOCUS ECOSYSTEMS

This section provides general context for four major ecosystems: mangroves, forests, seagrasses, and coral reefs. The mangrove and forest ecosystems will be the focus of the BP Indonesia Biodiversity Action Plan for the Berau Bintuni Bay region of Papua. Coral reef and seagrass ecosystems are important and are briefly described in this plan. They along with other ecosystems will be the focus of biodiversity activities in future BP Indonesia biodiversity action plans.

Mangroves

Indonesia has the largest area of mangroves of any country in the world. Various estimates from the 1990s suggest that between 42,000 and 46,000 square kilometres of this habitat remain. Mangroves are shrubs and trees of the intertidal zone, thriving in oxygen-poor, high-sulphur soils. Mangroves are also unsurpassed in their ability to provide excellent habitat for many marine and terrestrial species. They serve as important nursery areas for many commercial species, including fish and prawns. Additionally, they stabilise shorelines, providing protection from coastal storms.

Mangroves are found throughout Indonesia, and more than 50% of those remaining are located in Papua Province. Here the most extensive mangrove stand (450,000ha/1.1 million acres) are found at the head of the sheltered Bintuni Bay at the southern end of the Bird's Head Peninsula, Papua, also known as the Doberai Peninsula. The Indonesian government has designated part of the Bintuni Bay mangrove stand as a Strict Nature Reserve (*Cagar Alam Teluk Bintuni*). Adjacent timber extraction leases continue to threaten this unique mangrove stand. Other threats include: local, often small-scale wood chip production, conversion of mangrove areas to shrimp ponds, agriculture, or salt pans, energy exploration, and pollution. BP recognises the importance of mangroves to biodiversity, the health of Berau Bintuni Bay including its fisheries resources, and surrounding area forests, and as a result will make the Bintuni Bay Strict Nature Reserve an important component of the BP Indonesia Biodiversity Action Plan.

Forests

Indonesia's forests are of global importance, covering over 100 million hectares, ranking second in size only to Brazil's forests. These forests contain the world's greatest diversity of palm (477 species, of which 225 are endemic), and more than 400 dipterocarp species (the most valuable commercial timber species in Southeast Asia). Indonesia is also home to the largest expanse of lowland rainforest in tropical Asia; these represent some of the most species-rich forest areas on earth. The rainforests encompass a diverse array of habitat types, ranging from evergreen lowland dipterocarp forests in Sumatra and Kalimantan to seasonal monsoon forest and savannah grasslands in Nusa Tenggara and non-dipterocarp lowland forests and alpine ecosystems in Papua. Other terrestrial habitats include:

- extensive peat and freshwater swamps in Sumatra, Kalimantan, and Papua,
- heath forests, including the largest area of kerangas in Southeast Asia located in Kalimantan,
- forests on limestone and ultrabasic rocks, particularly in Sulawesi,
- lower and upper montane forests, and
- alpine meadows on the highest mountains in Java, Sumatra, and Papua.

Indonesia's forests represent 10% of the world's remaining tropical forests. Indonesia is the largest tropical timber producer in the world, contributing at least US\$ 8 billion annually to Indonesia's economy. Indonesia's forests contain 4,000 tree species, 267 of which are commercially valuable, and an estimated 647 threatened tree species (IUCN Red List). Nearly 60 million people are heavily dependent on forest resources, including water stored in forest soils. Some 20 million Indonesians are forest dwellers; another 2.3 million work in the forestry sector, while 1.5 million more work in forest-related businesses. Indonesia's forests and the diverse species that they support are under threat from unsustainable activities including legal and illegal timber harvesting, agricultural expansion, and human settlements. The World Bank describes Indonesia as having lost, on average, some 2 million hectares of forest each year between 1985 and 1997, an area half the size of Taiwan. By the beginning of 2000, Indonesia's forests had been reduced to 20 million hectares, from pre-1985 levels of nearly 43 million hectares.

Under such pressures, the future of Indonesia's forests is uncertain:

- Indonesia has lost an estimated 75% of its original natural forest.
- In the last 32 years, Indonesia has lost 40 million hectares (almost 100 million acres) of forests, equivalent to the area of Germany and the Netherlands combined.
- Kalimantan's forests are likely to disappear within nine years and Sumatra's lowland forests will likely be gone within four years.
- In 2000, 78 million cubic meters timber were harvested, three times Indonesia's government sustainable level.
- Non-certified and illegal timber harvesting continues; as much as 40% of the wood used by Indonesian pulp producers between 1995 and 1999 came from illegal sources.
- The loss of tax revenue from illegal logging in Indonesia is estimated at US\$600 million per year, according to World Bank data in September 2001.
- Indonesia self-funds 20% of the money needed to restore its forests.

The Ministers of Forestry and Industry and Trade issued a joint decree in October 2001 banning the export of logs for wood chips, and President Megawati Soekarnoputri recently declared that all forest concession holders must secure a government-approved sustainable forest management certification by 2003 or they will forfeit their licenses. The State Minister for the Environment plans to hire private lawyers to assist in prosecuting environmental cases. Indonesia's Ecolabelling Institute (Lembaga Ekolabel Indonesia) has completed a four-year development period and is now a national accreditation body for forest certification and timber ecolabelling in Indonesia, having criteria that are almost 100% compatible with those of the Forest Stewardship Council.

It is also important to note that Indonesia also contains large areas of secondary forests, covering at least one-third of the 41 million hectares identified as production forests. Secondary forests are regenerating forests where primary forests were lost or disturbed. Often overlooked by government, foresters, and conservationists, these forests can provide local people with many of same items as primary forests, can be a significant wildlife habitat, and serve as watershed and soil protection areas. However, some species, such as the orang-utan and ironwood tree, thrive only in undisturbed forested areas.

BP Indonesia recognizes the environmental, economical and social significance of Indonesia's forests and as a result will support with other partners, a premier conservation training and resource centre. This centre will build indigenous capacity instead of focusing resources on just a single reserve. The CTRC will link Indonesian and foreign universities, will increase practical and applied capacity for new and existing conservation practitioners and ensure that practical experience in conservation management is united with state-of-the-art methods in education delivery in both a physical and virtual facility. The centre could be linked to global centres such as the International Centre for Protected Landscapes at University College of Wales, Aberystwyth and through them to the World Commission on Protected Areas, in addition to other links. The concept of this centre and the programming it will deliver is widely endorsed and will be supported by Indonesian government and conservation organizations. The conservation training and resource centre is the core biodiversity activity in the BP Indonesia biodiversity action plan that links and supports all other activities described in this plan.



Seagrass and coral reef ecosystem conservation activities are not key components of this biodiversity action plan. However, seagrass and coral reef ecosystems are worth describing briefly in this plan because they are linked to and support mangrove ecosystems, which are a critical component of this plan. BP Indonesia recognizes the global importance of coral reefs and seagrass ecosystems and plans to feature these critical ecosystems in future BP Indonesia biodiversity action plans and for this reason they are briefly described below.

Seagrasses

Seagrass habitats are of considerable ecological and economic importance. They serve as the base of the food chain for productive coastal fisheries and are a valuable source of food for threatened marine animals, including the green turtle (*Chelonia mydas*) and the sea cow or dugong (*Dugong dugon*), which is similar to the manatee. Seagrass beds also provide shelter and food for fish, molluscs, and invertebrates, particularly in the early stages of the animals' development, and prevent erosion by stabilising sediments that could damage or kill corals. Seagrass areas are under threat from expanding coastal development and bottom trawler fishing gear associated with prawn fisheries.

Coral Reefs

Indonesia is recognised as a world centre of coral diversity, with up to 500 species and more than 70 genera of hard coral recorded (compared to 20 genera in the Caribbean and 50 genera in the Indian Ocean). Coral reefs are often compared to rainforest ecosystems in terms of diversity and productivity. Coral reefs provide rich biological resources for many marine species. They support important coastal fisheries, attract marine tourists, and protect coastal areas against wave erosion. The box below from the National Geographic News illustrates the diversity of corals in Indonesia.

The Raja Ampat Islands, off of Sorong on the northwest edge of the Bird's Head Peninsula in Papua, were the site of a recent reef survey. Marine biologists and Conservation International surveyed reef species diversity along with the health of the reefs in March and April 2001. What they reported to Nature and National Geographic News was remarkable. These extremely remote, and as yet unexplored, areas (6,000 square kilometers) "revealed...an extraordinary wealth of marine biodiversity: 450 species of hard coral, more than 600 mollusk species, and possibly as many as 1,100 fish species." To put this in perspective, this area may "surpass the Palau archipelago as the place regarded as having the world's richest biodiversity." (J. Roach, NGN, 8 August 2001)

Although coral reefs are diverse and widespread throughout Indonesia, according to data from LIPI (Indonesian Institute of Sciences) reported in the media at the end of 2001 show that only 6% of the 75,000 square kilometres of coral reefs in Indonesia's oceans are in good condition. Consequences of coral habitat exploitation and overfishing are clear. For example, The Nature Conservancy wrote that in the eastern part of the country, most shark species are commercially extinct due to sharkfinning (removing fins from a live shark and then discarding the mortally injured animal) for export markets.

The marine ecosystems described above (mangroves, seagrasses, and coral reefs) are under threat from the following human-induced activities:

- Sedimentation from land run-off and erosion from improper land-use practices,
- Global climate change, inducing more frequent coral bleaching,
- Land-based pollution, including industrial, agricultural, and human wastes,
- Extraction, including coral mining, sand mining, and mangrove wood chip production, and
- Destructive fishing practices, including over-fishing and use of destructive fishing gear, cyanide and dynamite.

While environmental pressures are growing and degradation continues, there have been a number of positive changes, including improved coral reef conditions and increased numbers of fish at two internationally known marine protected areas: Bunaken in North Sulawesi and Komodo National Park in East Nusa Tenggara. Positive results at both parks include reduced destructive fishing practices and increased support funds raised directly from visitors that go to build fish stocks and provide jobs.

Other Flora

While not a key component of this biodiversity action, it is worth mentioning that Indonesia is also of great importance in terms of its plant genetic diversity. A number of Indonesian species have widespread distribution and have adapted to different local conditions, forming different genetic variations in different populations. Such plants include the matoa (*Pometia pinnata*), bamboo (*Bambusa vulgaris*), and *Syzygium moluccanum*. With such genetic variation (critical to the creation of high-yielding crop varieties), the Indo-Malayan realm is one of the 12 major centres of crop diversity (Valivov centres), and Indonesia is its largest element. Crops such as banana (*Musa* spp.), nutmeg (*Myristica fragrans*), cloves (*Syzygium aromaticum*), durian (*Durio* spp.), and rambutan (*Nephelium* spp.) all originated in Indonesia.



Coastal resources in Indonesia,
Papuan fisherman, mangrove

BIODIVERSITY OVERVIEW OF PAPUA PROVINCE

Context

Papua Province, the western half of the world's second largest island, New Guinea, accounts for almost a quarter of Indonesia's land area, yet is home to only 1% of its population. At the same time, Papua is home to 54% of Indonesia's rich biodiversity. It is considered by many to be one of the last tropical frontier areas on earth, with 60% of the island covered by forests. The climate of Papua is mostly wet, with a short dry season from June through August. Papua's wet lowlands are a mixture of Asian and Australian plant species; at higher altitudes and in the savannah, the flora tends to be Australian. Almost 60% of the mammalian population of Papua is endemic to the island. Endemism extends to Papua's bird species: more than 40% of the bird species are endemic, including the beautiful birds of paradise. Papua is also home to about 100 snake species, 200 lizard species, 2 crocodile species, 6 tortoise species, 6 turtle species, 200 frog species, and more than 5,000 butterfly species.

Forests

Papua is covered by one of the largest expanses of pristine tropical rainforest in Southeast Asia. Trees include the genera *Calophyllum* and *Intsia* in the lowlands and *Agathis* and *Araucaria* in the hills. Other major habitats are found in the mountainous regions of Papua, including lower montane rainforests between 1,400 and 3,000 meters, upper montane rainforests reaching altitudes of 3,600 meters, and sub-alpine forests and alpine heathland at higher elevations. The most extensive intact habitats in Papua are mangrove wetlands (about 50% of Indonesia's remaining mangroves), large tracts of peat swamp forest along the west coast, and freshwater swamp forest with sago palm (a species managed and intensively harvested by indigenous people as a staple food source). A small belt of monsoon forest and savannah woodland, occurs in the far south, and the Fak Fak Mountains on the western edge of the Bomberai Peninsula, south of the Bird's Head Peninsula, support limestone forests and large areas of grassland.

Berau Bintuni Bay

Berau Bintuni Bay is a biologically diverse and physically dynamic environment located on the southern edge of the Bird's Head Peninsula. It is a partially enclosed estuary encompassing approximately 150 square kilometres. The bay drains into the Seram Sea to the west and was probably formed by an ancient river system in combination with seismic activities. Its depth is between 10 and 95 meters, and it is influenced primarily by a large number of riverine inputs and semi-diurnal tides (tide speeds of 150 centimetres per second have been recorded).

Mangroves are a significant contributor to the health of Berau Bintuni Bay, both in terms of land area and biodiversity. The Bintuni Bay Strict Nature Reserve is a globally recognised old-growth mangrove stand, considered the most extensive (450,000ha), best developed, and least disturbed in Southeast Asia, with an equivalent IUCN classification (Category 1a: a protected area managed mainly for science). This classification re-enforces the international importance of this unique area. This globally significant mangrove stand is a critical component of BP Indonesia's Biodiversity Action Plan. (See Annex 8 for IUCN Guidelines for Protected Area Management Categories link)

Wide, flat coastal plains in the southeast and north, and coastal mountain terrain in the southwest dominate the shoreline of the bay. The intertidal zone between the terrestrial and aquatic environments of the bay is used by migratory and resident birds and supports a number of soft-bottom benthic fauna species. Limited data suggest that coral reefs occur near the Ogar and Arguni islands in the west on the seaward edge of the bay.

The terrestrial areas of the Berau Bintuni Bay are divided into four main ecosystems: lowland rainforests, savannah (in upland areas in the south), freshwater and peat swamp forests, and mangrove and coastal forests. These four ecosystems support a high diversity of flora and fauna, many of which are listed as protected by the Indonesian government. The birds of Berau Bintuni Bay represent 95 species, 40 of which are protected by Indonesian law. The region is also home to at least 70 mammal species, 4 of which are protected, and 5 protected reptile species. (See Annex 2 for more information)

Biodiversity conservation in Papua is still relatively new. In 1997, Conservation International Indonesia (CII) hosted a Biodiversity Conservation Priority-Setting Workshop in Jayapura, Papua. The workshop participants included more than 90 scientists, government officials, community, and non-government leaders representing 42 different institutions. The workshop used a participatory, expert-driven, consensus-seeking process to establish a conservation knowledge base about the region and delivered recommendations for conservation priorities. The workshop identified criteria for determining conservation priorities, including:

- the level of biological importance for the area,
- the degree of human pressure and threats,
- the urgency for conservation action, and
- the importance of additional research for the area.

In CII’s Final Priority Setting Report, the Bird’s Head Region, including the Berau Bintuni Bay, was recognised as a region with these significant biodiversity properties:

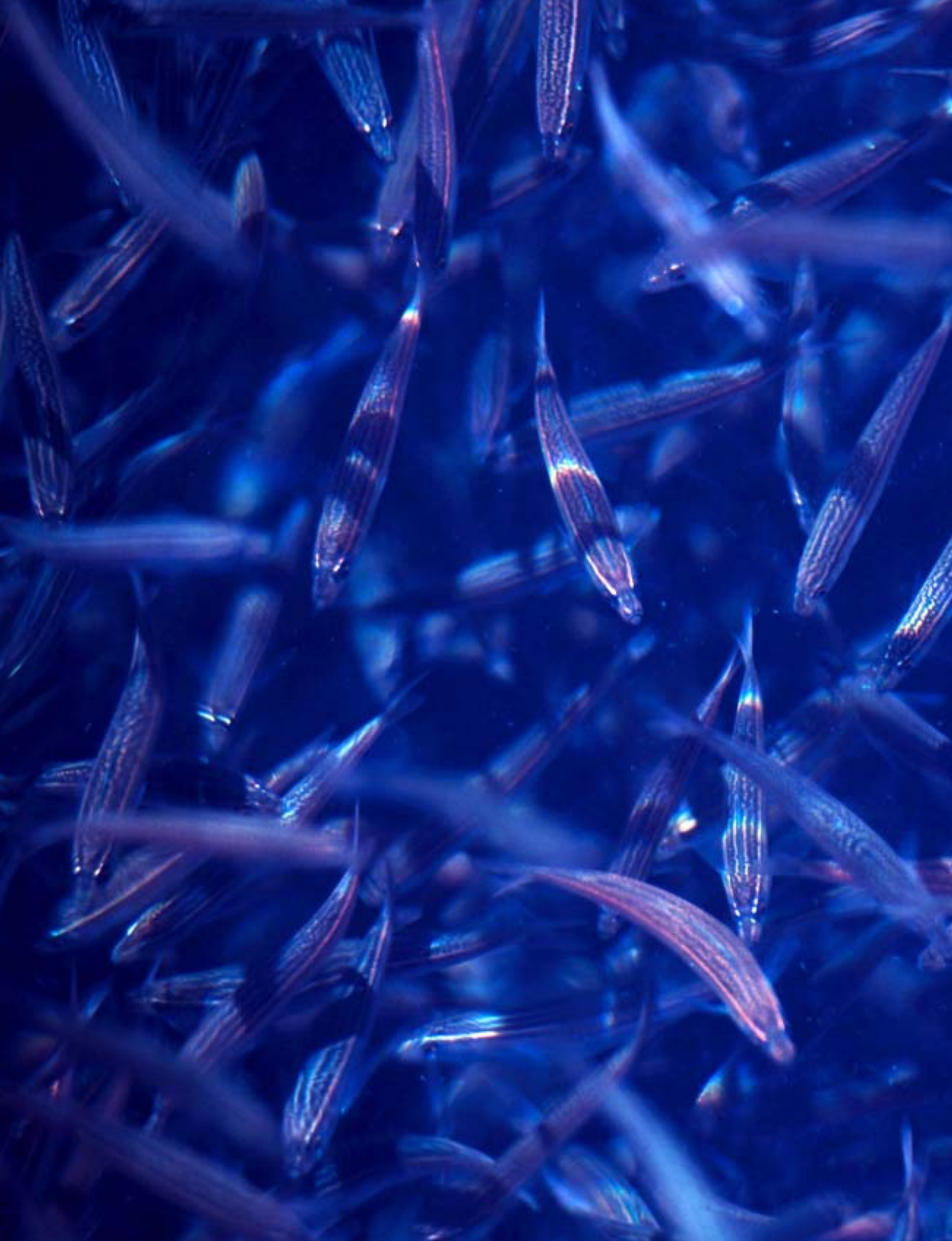
- very high plant species endemism,
- very high bird species endemism,
- insufficient data on endemic mammal species, and
- insufficient data on endemic reptile, amphibian, and insect species.

The report also recommended further study, data collection, and interpretation to determine the biodiversity levels of mammals, reptiles, amphibians, and insects.

This major Priority-Setting Workshop yielded 19 recommendations, including 6 priority recommendations. Four of the six priority recommendations are applicable to the Tangguh LNG project as they are located in the Berau Bintuni Bay region and are listed below in Figure 3. BP Indonesia’s Biodiversity Action Plan is consistent with and supports these four recommendations, in addition to supporting part or all of 14 of the workshop’s 19 recommendations. CII contact details to obtain the Irian Jaya Biodiversity Conservation Priority-Setting Workshop Final Report and the accompanying two-sided colour map are found in Annex 4.

FIGURE 3: BIODIVERSITY CONSERVATION PRIORITY-SETTING WORKSHOP RECOMMENDATIONS AND BP INDONESIA’S ACTIONS FOR THE BERAU BINTUNI BAY REGION

Priority Recommendations	BP Indonesia’s Actions
Areas of Documented Biological Significance (1)	Support Bintuni Bay Cagar Alam Mangrove Management Plan as a key activity with the CTRC and local partners
Mangrove Areas Requiring Special Attention (5)	Support improved protection and sustainable use of the Bintuni Bay Strict Nature Reserve in cooperation with key local partners and the CTRC
Document Poorly Known Areas (6)	Flora and Fauna baseline study of the Tangguh LNG site with wise use recommendations and actions Support a land use planning atlas and the Papua “Ecology of Indonesia Series” book

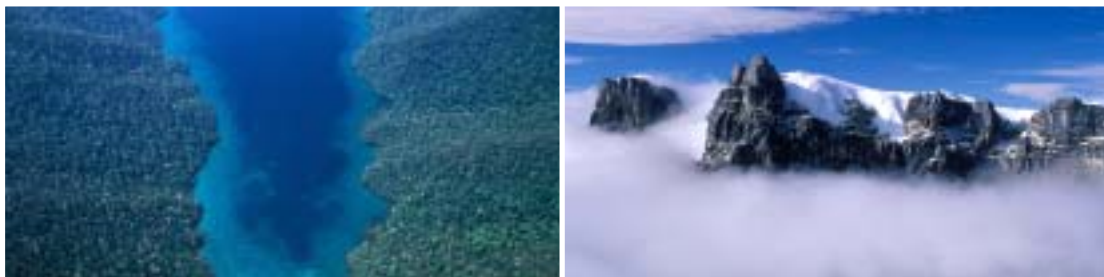




*BP BIODIVERSITY CONSULTATION AND
PARTNERSHIP BUILDING STRATEGY*

5

BP biodiversity consultation and partnership strategy



Papua landscape, from blue sea and mangroves to mountain peak at Ngga Pulu

STRATEGY AND STEPS

BP Indonesia is committed to implementing a biodiversity action program that is ecologically sound and economically responsible, contributing to the long-term conservation and sustainable use of biodiversity of the Berau Bintuni Bay region of Papua. To achieve this, the BP Indonesia Biodiversity Action Plan will incorporate key principles of partnership, including: encompassing the aspirations of stakeholders. There is strong agreement among partnership experts today that a successful partnership should be built on mutual respect, organisational commitment, transparency of purpose, and a clear, shared vision.

The steps of the strategy incorporated into this biodiversity action plan are to:

- identify issues to which BP can make a real, measurable, and positive contribution,
- identify, with our partners, a series of integrated solutions addressing key issues,
- develop and sustain creative partnerships with those possessing similar goals,
- select and test good practices for biodiversity conservation and sustainable use of natural resources,
- develop and test performance criteria, and
- share results, refine and adapt solutions, and identify future issues for action.

The BP Indonesia Biodiversity Action Plan is being developed and launched at a pivotal period in the history of Papua and Indonesia. All partners face dramatic changes, including the transition to new regional autonomy laws and accompanying new policies. New approaches to a new social, political, economic, and environmental era are needed. BP Indonesia is keenly aware of these challenges and is ready to test its strategy with its partners, recognising that continual review and revisions will be required as the strategy takes shape in 2002 and onward. Because the plan is a living document, it will evolve and mature as objectives are refined, partnerships strengthened and new ones formed, and activities undertaken, monitored and measured, lessons learned and results reported.



Sacred ibis (*Treskiornia acthiopicus*);
Conservation data collection in Papua

THE BP INDONESIA BIODIVERSITY ACTION PLAN

the BP indonesia biodiversity action plan

BP Indonesia recognizes that the challenge of conserving and sustainably using Indonesia's biodiversity is enormous, and that the ecosystems, animals, and plants that comprise this diversity are in peril. While biodiversity losses have been occurring and are now accelerating worldwide, the concept of biodiversity conservation and sustainable use and the more holistic approaches and solutions to address these losses are relatively new. BP Indonesia recognizes that biodiversity supports a sustainable and stable working environment for everyone including companies, so ensuring biodiversity conservation and sustainable use issues are addressed in our work is key to maintaining the critical and often fragile environments that we work in.

BIODIVERSITY ACTION PLAN COMPONENTS

Following is the list of actions and activities that comprise the plan. The first seven activities focus on conservation and sustainable use, indigenous capacity building, increasing knowledge, data collection, and policy shaping in Papua Province and nationally. The last activity focuses on building internal capacity and interest in biodiversity conservation among our BP employees in Indonesia. It will also promote BP's Corporate Volunteer Program and encourage participation in conservation events and volunteer opportunities.

List of Actions and Activities:

1. Support a practical and applied, premier conservation training and resource centre,
2. Support and contribute to a Berau Bintuni Bay regional land use planning atlas,
3. Support a strategic management plan for the Bintuni Bay Strict Nature Reserve,
4. Develop a model case study for the Energy Biodiversity Initiative,
5. Support a significant book on Papua, as part of The Ecology Of Indonesia Series,
6. Support a targeted flora and fauna baseline study with wise use recommendations for the Tangguh LNG project site,
7. Support, as a charter member, the Papua Conservation Fund, and
8. Implement a BP Indonesia staff Biodiversity Awareness and Volunteer Program.

BP INDONESIA'S BIODIVERSITY ACTION PLAN

Our challenge is to transcend the apparent trade-off between energy supply and the environment. To show that energy can be produced and used without destroying biodiversity...

Lord John Browne

Focus on Tangguh LNG Plant in Papua Province

The Tangguh LNG plant will be a world-class, highly automated facility, requiring a skilled production and maintenance staff of approximately 500. The high-grade product will be exported, leaving no residual product for local use. Construction of the plant will commence in late 2002 and production is expected to begin in the last quarter of 2005. It is BP's goal to achieve internationally recognized environmental performance in biodiversity conservation during the Tangguh LNG plant's design, construction, operation, and closure.

The project involves offshore production platforms and undersea gas pipelines in Berau Bintuni Bay, connected to land facilities located on the bay's southern shore. The onshore project site is located between the Saengga and Manggosa rivers within an area of approximately 3,266 hectares. The LNG plant and operations buildings will occupy approximately 600 hectares, and the remaining area (approximately 2400 hectares) will be set-aside as limited-use and future use areas (including, but not limited to uses such as walking trails and dedicated wildlife habitat).

The area surrounding the site contains existing industrial infrastructure, with considerable fishing and shrimp fishing activities taking place in the bay. In addition, extensive land clearing for oil palm, agriculture, and transmigration settlements has occurred in the area directly south of Tangguh. Studies to date have shown that the site has poor soils, and limited accessible water supplies, making the development of a new town with related industries unsustainable. In addition, no roads currently exist to and from the site and none are planned during construction or operation of the LNG facility. Recognising the limited soil and accessible water resources of the site and surrounding area and the lack of industrial infrastructure, and at the request of local communities, BP Indonesia will facilitate a process with others to implement a Diversified Growth Strategy in partnership with the regional governments. An outline of this strategy is found in Annex 3.



Example of the concern for the environment by Papuan people is reflected in winning the prestigious "Kalpataru" environmental award by Daud Womsiwor from Manokwari; Environmental and social impact assesment (AMDAL) data collection activities in the Tangguh LNG site

THE EIGHT BIODIVERSITY ACTION PLAN COMPONENTS

The BP Indonesia Biodiversity Action Plan has a central component—a premier conservation training and resource centre—that links and strengthens all other components of this plan. This section describes that key component and the other seven integrated components.

1 Conservation Training and Resources Centre (CTRC)

The CTRC will increase indigenous capacity for conservation management in Indonesia by building on the former Dutch Government supported Forestry School in Bogor. Some of the functions of that school were dispersed to various universities, government in-service training programs, and periodic short courses run by government, academic, and non-government organisations. But facilities for building practical capacity among professional nature conservation practitioners in Indonesia are far from satisfactory. The Forest Protection and Nature Conservation Directorate (part of the Indonesian Ministry of Forestry) or PHKA is strongly encouraging the establishment of a dedicated conservation education and training centre. This centre would serve two main functions:

- Build practical and applied capacity for new or experienced conservation practitioners working in (local, provincial, or national government, industry, conservation and environment organisations, community groups, universities) involved in conservation management from the technical (field/community) level to professional (managerial) level.
- Provide in-service training to existing conservation management staff (either formally, as in the case of PHKA staff, or more opportunistically, as in the case of industry, community, or non-governmental organisations). Very few opportunities for on the job training exist, apart from periodic and poorly focused workshops.

The CTRC would also link appropriate Indonesian and foreign universities, serving as a vehicle for educating government decision-makers and enforcement personnel. This training centre would provide practical and sustainable conservation management programs using among others, the Bintuni Bay Strict Nature Reserve and the Berau Bintuni Bay Region as living laboratories. In the current era of regional autonomy and active decentralisation of authority to local government, the lack of basic understanding of conservation goals and principles is a serious impediment to implementation of conservation programs. There is an urgent need to increase the constituency for conservation among those able to influence decision-making and improve enforcement of conservation and related environmental laws.

The CTRC would combine practical experience in conservation management with state-of-the-art methods in education delivery in both a physical and virtual facility. This approach will optimise human, technical, and economic resources while providing the flexibility in delivery necessary to reach prospective and interested individuals in isolated areas of the country, including Papua Province. The CTRC would also serve as a link between universities in Papua and other provinces. Initial programming areas include the Bintuni Bay Strict Nature Reserve Management Plan and the Berau Bintuni Bay region Land Use Atlas, among other Papuan-focused training activities.

It is proposed that the CTRC would develop in phases:

- I. CTRC management structure development. This phase would involve working with the Ministry of Forestry, related government institutions (e.g., Ministry of Marine Affairs and Fisheries), related academic bodies (e.g., Bogor Agricultural University [IPB], Gadjah Mada University, State University of Papua, UNIPA Manokwari and others), local, regional, and international conservation organisations, and, potentially, bilateral and multilateral sponsors and partners. The objective would be to have a small full-time secretariat to co-ordinate communications and operations at the Biothrope Campus in Bogor, and a focused and active steering committee to set direction, raise funds, and oversee growth.
- II. Curriculum development and delivery. This phase would involve development of curricula and courses as modules of varying length (e.g., one-day intensive training for politicians, 7 to 14 days of practical training, and more comprehensive programs of up to 3 months) involving Indonesian and foreign academics, conservation practitioners, and others.

2 Bintuni Bay Strict Nature Reserve Management Plan

Berau Bintuni Bay is bordered by extensive areas of freshwater and brackishwater wetlands and major stands of mangroves backing onto lowland forests. The Ministry of Forestry has already designated a large stand of mangroves located at the eastern end of the bay as a Strict Nature Reserve or the Cagar Alam Teluk Bintuni (IUCN Category Ia) by Decree in 1982 by the Ministry of Agriculture (SK Mentan No. 820/Kpts/Um/11/1982). This reserve is a key component of this biodiversity action plan. BP Indonesia and partners seek improved protection of the reserve through the development and adoption of a sustainable management plan.

The development of the plan will involve local stakeholders and will be a key activity supported by the CTRC. Development and adoption of a management plan that enables the users to be part of the management solution is essential to success of this initiative. The management plan will be developed through planned and strategic consultations with all stakeholders. Ongoing partnerships with local and international conservation and social NGO's will be a critical part of the process to facilitate implementation. The result would be a model plan and process that may be applicable in other areas of Indonesia where district governments increasingly have control over mangrove forest and coastal land management and other natural resources. This plan may also serve as a catalyst and model for innovative management of threatened mangrove forests around the world. The Bintuni Bay Land Use Atlas described later in this document will contribute to the development of the plan ensuring local stakeholder input.

Preparation for implementation of the plan will require establishment of a regulatory framework, monitoring regime and the infrastructure necessary to guarantee the security of the reserve. This phase would include activities such as defining management responsibilities and resource allocations, including marking of agreed jurisdictions and identification of a center from which management could be carried out.

The final phase would be the long-term implementation of management in the field on a day-to-day basis, involving local forestry staff. These staff will be trained at the CTRC where necessary and the CTRC will play a key role in operations design and review. It is expected that visiting national and international researchers and specialists may be involved as the site has significant scientific values and could serve as a "learning site" for Nature Reserve management in a global context. As the plan develops, results might also be shared with fisheries staff and researchers concerned with the monitoring and regulation of natural resources associated with mangrove systems.

The Ministry of Forestry has also nominated a portion of the inner Bintuni Bay brackishwater lagoon and its seagrass ecosystem as a protected area because of its importance as a nursery for commercially important species, although the decree formalising that nomination has not yet been issued. BP and others recognise the importance of Berau Bintuni Bay to the biodiversity of the region and will explore opportunities to work with the Ministry of Marine Affairs and other groups to strengthen the bay's protection.

Forest Rehabilitation. BP seeks to enhance conservation of the Strict Nature Reserve with the rehabilitation of 7,000 hectares of degraded forested area. Although discussions are underway, the final location for this area has yet to be determined.

3 Berau Bintuni Bay Region Land Use Atlas

This atlas is part of a nation-wide series (Lampung and Riau Province Atlases have already been completed) and will use geographic information system technology to map the region's ecological, industrial, administrative, agricultural, forestry, fisheries, and other land uses. The atlas will not only be a key land use planning tool but will unite communities in the region, building capacity through an organised series of community meetings. For example, in Lampung more than 250 community meetings were held soliciting local input for land use priorities leading to the completion of the atlas. Papuan universities, supported by USAID, will lead the atlas development effort. Like the Lampung and Riau atlases, this atlas will be a living document and will be used in government planning offices as a tool for current and future planning initiatives. It will also be placed in libraries and provided to universities and conservation organisations.

4 Papua Volume of The Ecology of Indonesia Series

Papua Province is a significant biodiversity region, containing more than half of Indonesia's rich biodiversity, yet relatively little has been written about it. BP is supporting an important and long-awaited book on Papua that is part of the respected series, The Ecology of Indonesia. This series is complete except for the book on Papua. BP's sponsorship and that of Conservation International were announced during a sponsor luncheon hosted by BP in October 2001.

5 Energy and Biodiversity Initiative (EBI)- Model Case Study for Tangguh LNG

Papua is significant globally for its biodiversity and endemic species. The Tangguh LNG plant will be a significant operation in the Berau Bintuni Bay region of Papua Province. BP Corporate is a member of the EBI. This initiative includes energy and conservation organisations (BP, Shell, Statoil, ChevronTexaco, Flora and Fauna International, IUCN, Conservation International, The Nature Conservancy, and the Smithsonian Institution) whose goal is to develop and test energy and biodiversity best business practices, performance indicators, and metrics. Two BP Group Biodiversity Experts serve on two different working committees respectively 1) to develop a set of metrics for testing and 2) to develop a framework for business cases. BP participated in the January 2002 EBI Consultative Workshop, providing practical input and an Indonesia perspective for the methodology design. BP Indonesia is engaged in discussions with EBI to explore the option of using Tangguh LNG as a case study for some of these developments.

6 Papua Conservation Fund Fund

One of the key outcomes of Conservation International's 1997 Conservation Priority-Setting Workshop in Papua was a conservation fund managed by local Papuan conservation organisations and two international conservation organisations: Conservation International Indonesia (CII) and World Wide Fund for Nature (WWF). BP works closely with both CII and WWF, and is actively discussing how best to contribute expertise and financial support to the newly established Papua Conservation Fund.

7 Tangguh LNG Site Flora and Fauna Baseline Study

A site-specific flora and fauna baseline survey has been undertaken between February and April 2002. The survey will establish the current flora and fauna status of the plant site itself and the results will form practical recommendations for the best use of the undeveloped project site land area to promote biodiversity conservation to staff and visitors alike. The recommendations will be reviewed, and those chosen will be implemented starting in 2003. These recommendations will be integrated with ongoing site development activities.

BP INDONESIA'S EMPLOYEES BIODIVERSITY AWARENESS EDUCATION AND VOLUNTEER PROGRAM

8 Creating Biodiversity Conservation Ambassadors

BP Indonesia launched a biodiversity education program for its employees. This program will be implemented in phases beginning in early 2002. The program's goal is to provide meaningful opportunities for BP Indonesia staff to recognize the importance of and to learn the concepts of biodiversity conservation and sustainable use of natural resources. This program will help to reinforce BP's green progressive company brand.

Activities and outreach materials are being designed in both English and Indonesian. Our ultimate goal is to create biodiversity ambassadors for BP. Through this process we hope to achieve a multiplier effect:

- a better-informed and more proactive workforce with regard to biodiversity conservation and sustainable use of natural resources,
- shared knowledge with colleagues, friends, family, and partners,
- increased incorporation of environmental considerations into early decision-making and throughout the decision-making process, and
- increased opportunities and likelihood of BP employees participation in conservation volunteer activities, improving the visibility and use of the BP corporate volunteer program.

Results will be measured in November 2002, and reported on the BP Intranet.

Biodiversity education program actions and activities (in both English and Indonesian) are scheduled to begin in early 2002:

- BP Indonesia HSE staff will introduce the key issues of biodiversity conservation to BP employees during a BP Town Hall Meeting accompanied by a dual-language, interactive poster to extend the impact of the presentation.
- A series of eye-catching biodiversity posters will be displayed in BP office buildings in Arcadia Complex, Jakarta, beginning in June 2002.
- BP Indonesia will host a two-part mutual awareness program at the BP Arcadia Complex. The first part is a multimedia presentation to key conservation organisations to increase their understanding of the oil and gas industry.
- The second part of the program will be interactive exhibits at our BP Arcadia Complex common lunch area on conservation and volunteer opportunities in Indonesia. This will also be used to promote BP's corporate volunteer program and non-profit donation guidelines, with guidance from BP Government Affairs Office.
- A series of fact sheets on biodiversity and related issues detailing BP's biodiversity program will be designed, distributed, and updated as needed.
- A biodiversity brown bag lunch program featuring topics such as mangroves, artificial reefs, pressures on coral reefs and fisheries, forests and logging, land use, and bay management began in February 2002. The schedule will be announced on the BP Intranet and at Town Hall Meetings.

MEASURING OUR SUCCESS

Baseline Assessment and Analysis: An Environmental Baseline Survey (EBS) was prepared in 1998. BP Indonesia prepared the Environmental and Social Impact Assessment (AMDAL) for submission and approval to the Government of Indonesia (commenced in January 2000 and completed in February 2002). The AMDAL approval is anticipated in July 2002. The AMDAL contains an Environmental Management Plan (Indonesian RKL), and an Environmental Monitoring Plan (Indonesian RPL). In addition, an Environmental Management System (EMS) will be developed and ISO 14001 certified.

Consultations with conservation organisations, academia, donor organisations, as well as individuals working in the Berau Bintuni Bay region, and a review of the recommendations in CI's Conservation Priority-Setting Workshop for Papua, helped to shape the BP Indonesia Biodiversity Action Plan's seven integrated activities and the employee biodiversity awareness program.

Reporting Results: BP Indonesia is developing a methodology for the biodiversity action plan in consultation with BP Corporate and the working groups of the Energy and Biodiversity. A final methodology and development schedule will be finalised in Q 4 2002.

BP Indonesia recognises that real, positive, and measurable changes will not happen quickly or without creative, innovative and sustainable partnerships. BP Indonesia does believe that the integrated activities of this plan are sound, responsible, and achievable. The following list outlines some of the outcomes BP Indonesia hopes to achieve in partnership with BP Corporate and others by implementing the plan's activities.

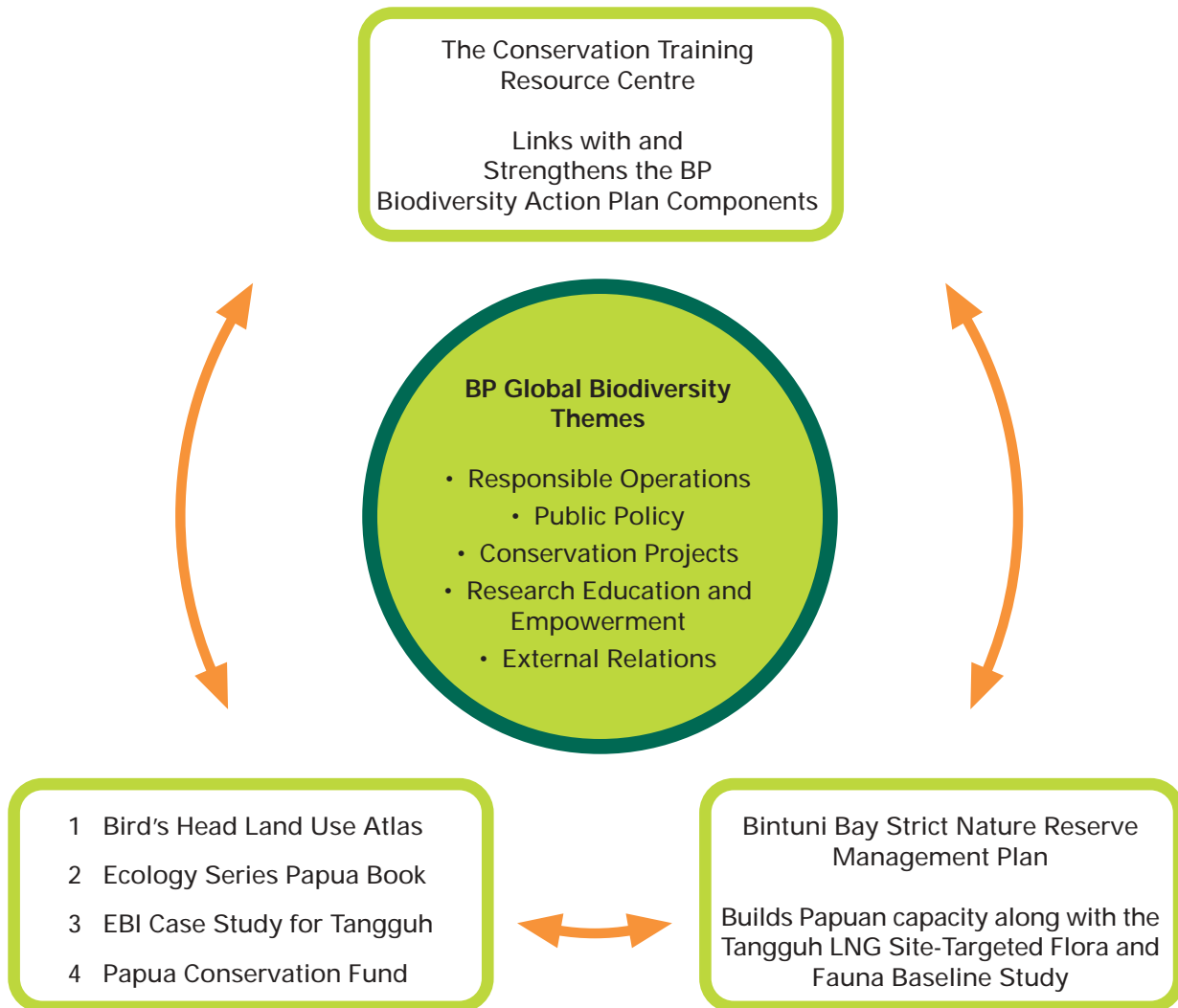
Expected outcomes from implementation of the BP Indonesia Biodiversity Action Plan include:

- Better management of terrestrial and coastal areas that can be measured and reported,
- Increased domestic capacity and numbers of managers, law enforcement officers and others,
- Improved decision-making at all levels,
- Improved management and legal protection of important and fragile ecosystems in Indonesia and in particular in Papua,
- Increased decision-making opportunities with tangible results for local communities, universities and conservation organisations,
- Improved planning, management and use of habitats and the reduction of forest and coastal habitat destruction,
- Increased dedication of local revenues for conservation and related activities,
- Improved health of the Berau Bintuni Bay Region ecosystems and
- Biodiversity conservation performance indicators developed, tested and reported and replicated.

As the plan is implemented, it is intended to monitor, verify, and measure the following:

- Numbers of courses conducted and students trained through the CTRC,
- Amount of non-BP funds leveraged (direct and indirect) across all the activities outlined in this Biodiversity Action Plan,
- Numbers of conservation areas (including national parks) or local government areas linked with training activities at the CTRC,
- Number of hits on the CTRC website,
- Numbers of publications and training materials produced and distributed,
- Number of stakeholders active in the Berau Bintuni Bay Regional Atlas, and
- Increased protection of the Berau Bintuni Bay region (hectares of mangroves and shellfish and fish populations).

FIGURE 4. LINKAGES BETWEEN THE BIODIVERSITY ACTION PLAN COMPONENTS



CONCLUSION

BP recognises that the current rate of biodiversity loss in Indonesia is unacceptable. Through the BP Indonesia Biodiversity Action Plan we are committed to achieving levels of performance required to conserve and sustainably use natural resources where we operate, and to measuring and setting targets to improve biodiversity conservation performance, and to openly reporting our progress.

Our objective is to create a living biodiversity action plan that:

- integrates biodiversity conservation priorities at the local, regional, and national levels,*
- encourages minimal impacts to biodiversity at the Tangguh LNG site,*
- increases indigenous human capacity-building to ensure long-term positive change,*
- promotes responsible practices for biodiversity conservation and sustainable use of all natural resources, and*
- contributes to the dialogue on biodiversity conservation in Indonesia at the PrepComm IV in Bali and at RIO+10 and beyond.*

*The goal of the BP Indonesia Biodiversity Action Plan is to promote biodiversity conservation and sustainable use of natural resources in Indonesia in order to deliver on BP's commitment to biodiversity in ways that are **real, measurable, and positive**.*