Hong Kong Biodiversity Strategy and Action Plan 2016-2021

Environment Bureau

hk 生物多樣性 biodiversity

December 2016

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Foreword

Hong Kong is a city more capacious than its size suggests. Other than housing over seven million people and serving as an international financial and business centre, beyond the buzzing traffic and towering skyscrapers, we have a natural terrain and vast expanse of coastal waters hosting an impressive diversity of wildlife in such proximity to the city that is unparalleled in the world. This does not occur by coincidence, but is the result of decades of work on nature conservation by the community and the Government.

The variety of life forms and habitats extends many benefits to humans, including keeping us healthy by providing fresh food, clean water and medicines; sheltering us from scorching sun and strong winds; inspiring us with seasonal colours and landscapes; and supporting our agriculture, fisheries and tourism industries.

The Government recognises the importance of conserving biodiversity and developing sustainably to the city's long-term prosperity and is conscious that actions across the society are needed to achieve this, particularly when challenges like climate change have emerged. Therefore we have formulated the first city-level Biodiversity Strategy and Action Plan (BSAP) to step up biodiversity conservation and support sustainable development in Hong Kong over the next five years according to Hong Kong's own conditions and capabilities.

This is the first BSAP for Hong Kong. We recognise there are gaps that will need to be addressed in the future. What we wish to do in the next five years is to get greater buy-in from our community in order for more to be done. We are looking forward to partnering with you to build a more sustainable future for Hong Kong.

KS WONG
Secretary for the Environment
December 2016

List of abbreviations

AFCD	Agriculture, Fisheries and Conservation Department
BEAM	Building Environmental Assessment Method
BSAP	Biodiversity Strategy and Action Plan
CA	Conservation Area
CBD	Convention on Biological Diversity
CEDD	Civil Engineering and Development Department
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPA	Coastal Protection Area
C&ED	Customs and Excise Department
DSD	Drainage Services Department
ECF	Environment and Conservation Fund
EDB	Education Bureau
EIA	Environmental Impact Assessment
EIS	Ecologically Important Stream
ENB	Environment Bureau
FPA	Fisheries Protection Area
GIS	Geographic Information System
GLTMS	Greening, Landscape and Tree Management Section, Development Bureau
GMO	Genetically-modified organism
HKPSG	Hong Kong Planning Standards and Guidelines
HKSAR	Hong Kong Special Administrative Region
HKWP	Hong Kong Wetland Park
IAS	Invasive alien species
KTN and FLN NDAs	Kwu Tong North and Fanling North New Development Areas
LCSD	Leisure and Cultural Services Department
LNEC	Lions Nature Education Centre
MA	Management Agreement
NAP	New Agriculture Policy
NGO	Non-governmental organisation
PEP	Plantation Enrichment Project
PPP	Public-Private Partnership
RSMP	Ramsar Site Management Plan
SADF	Sustainable Agricultural Development Fund
SDC	Council for Sustainable Development
SFDF	Sustainable Fisheries Development Fund
SSSI	Site of Special Scientific Interest
UHI	Urban Heat Island

1 Introduction

Lok Ma Chau, New Territories

Our city receives many “ecosystem services”, in forms ranging from life’s necessities such as food from our lands and seas, oxygen production and climate regulation from our trees, to non-material cultural enrichment, such as aesthetic and spiritual values, recreation and education opportunities.

1 Introduction

1.1 Biodiversity matters

Biodiversity is the variability among living organisms. This variability is not only important for organisms to adapt to changes in their physical environment and perform different roles and functions in their living milieu; humans also derive a wide range of benefits from biodiversity. Our city receives many of these benefits, or "ecosystem services", in forms ranging from life's necessities such as food from our lands and seas, oxygen production and climate regulation from our trees, to non-material cultural enrichment, such as aesthetic and spiritual values, recreation and education opportunities.

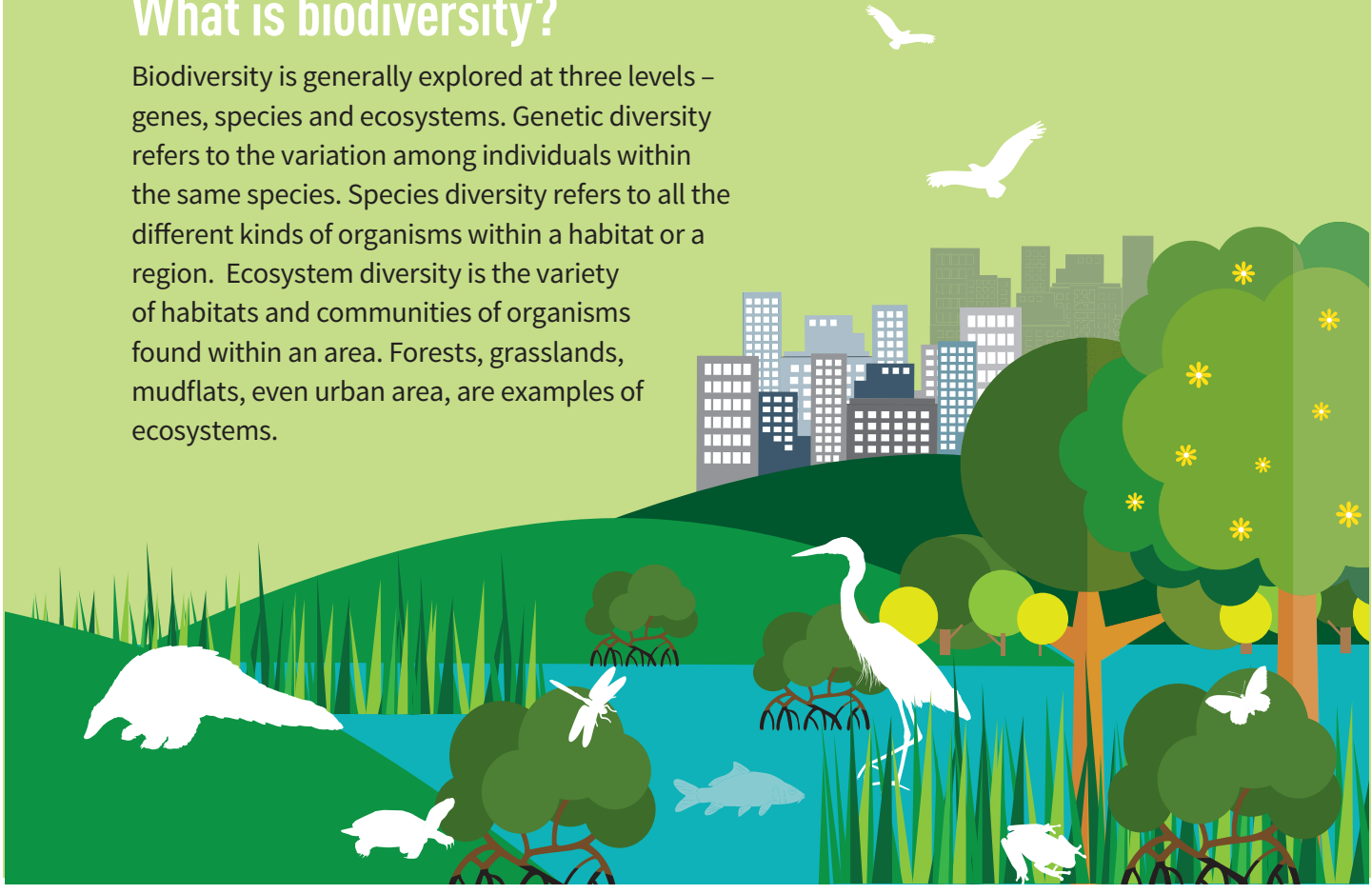
1.2 Overview of Hong Kong's biodiversity

Hong Kong lies at the northern limits of the tropics between latitudes 22°08'N and 22°35'N and longitudes 113°49'E and 114°31'E, and experiences subtropical climate, with hot and rainy weather from around April to September, and cool and dry weather from around October till March. The relatively large range in annual temperature distinguishes our climate from that typically found in the tropics.

Located on the Pearl River Delta and coast of South China Sea, Hong Kong has a hilly and rugged terrain, as well as a highly crenulated coastline and more than 200 offshore islands. Natural terrain covers about 60% of our 1 106 km^2 land area, and flat land occurs most extensively as alluvial plains in the northwestern part of the territory, and as additional pockets in low-lying coastal areas. Two dominant rock types – granitic and volcanic rocks, give rise to soils of different textures covering these peaks and valleys. At sea, oceanic currents and Pearl River discharge give rise to an east-west gradient of physical conditions in our 1 649 km^2 of waters, from more oceanic and clearer waters in the east, to more estuarine and turbid waters in the west.

What is biodiversity?

Biodiversity is generally explored at three levels – genes, species and ecosystems. Genetic diversity refers to the variation among individuals within the same species. Species diversity refers to all the different kinds of organisms within a habitat or a region. Ecosystem diversity is the variety of habitats and communities of organisms found within an area. Forests, grasslands, mudflats, even urban area, are examples of ecosystems.



Example of ecosystem services provided by a coral community:

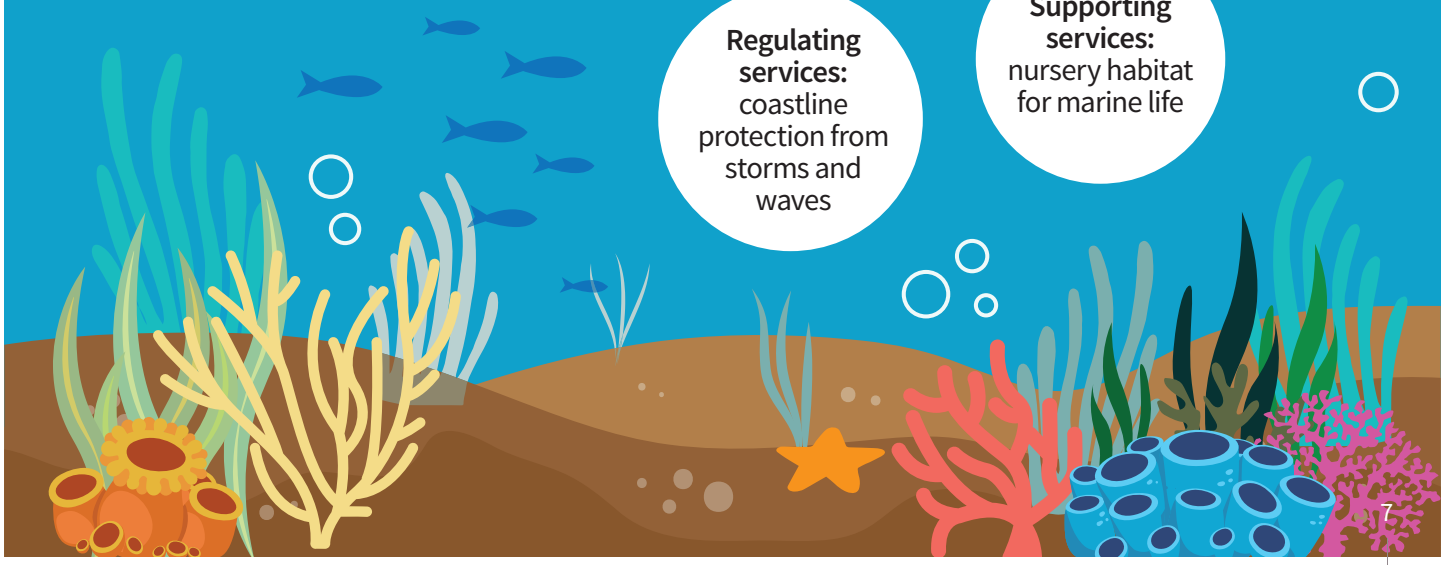
Ecosystem services are goods and services provided when ecosystems function healthily. A coral community provides the following four groups of ecosystem services to us:

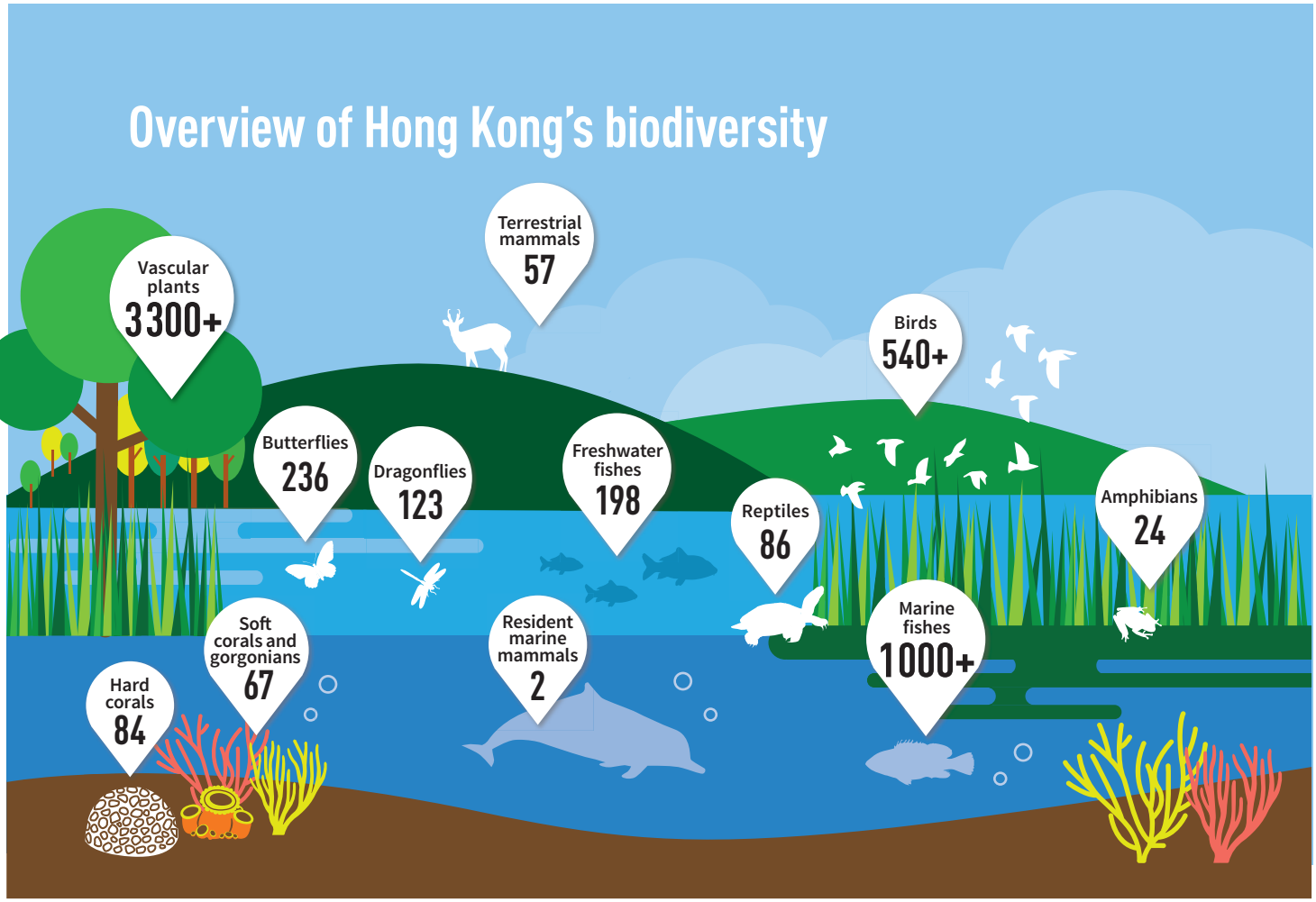
Cultural services: recreation and ecotourism, aesthetic inspiration for arts

Provisioning services: seafood, medicine

Supporting services: nursery habitat for marine life

Regulating services: coastline protection from storms and waves





Despite the small size of the territory, the interplay of climatic condition, geographical location and geology endows Hong Kong with a myriad of terrestrial and marine habitats and niches, which in turn are homes to a wealth of native flora and fauna. Some of these habitats and species are representative or particularly valuable.

Occupying about one-fifth of Hong Kong's land area, forests are important habitats for wildlife and help safeguard water catchments from soil erosion. Small but well-developed *fung shui* woods are of particular ecological interest, as they are remnants of Hong Kong's native lowland evergreen broad-leaved forests, and support many rare tree species and thriving biodiversity.

Wetlands including freshwater and intertidal, natural and human-modified, cover about 5% of our land area. Despite the small coverage, they support a wide array of wildlife and are generally of high ecological value. Wetlands at the internationally important Mai Po Inner Deep Bay Ramsar Site support over 70% of the bird species recorded in Hong Kong, and are important feeding and resting grounds for migratory birds.

On the coast, mangroves and mudflats in estuaries not only stabilise sediments but also serve as important feeding and nursery grounds for a kaleidoscope of aquatic life including waterbirds, fishes, horseshoe crabs and other invertebrates. Meanwhile, boulder and rubble seabed in the northeastern and eastern waters support over two-thirds of the hard coral species that could be found in Hong Kong.

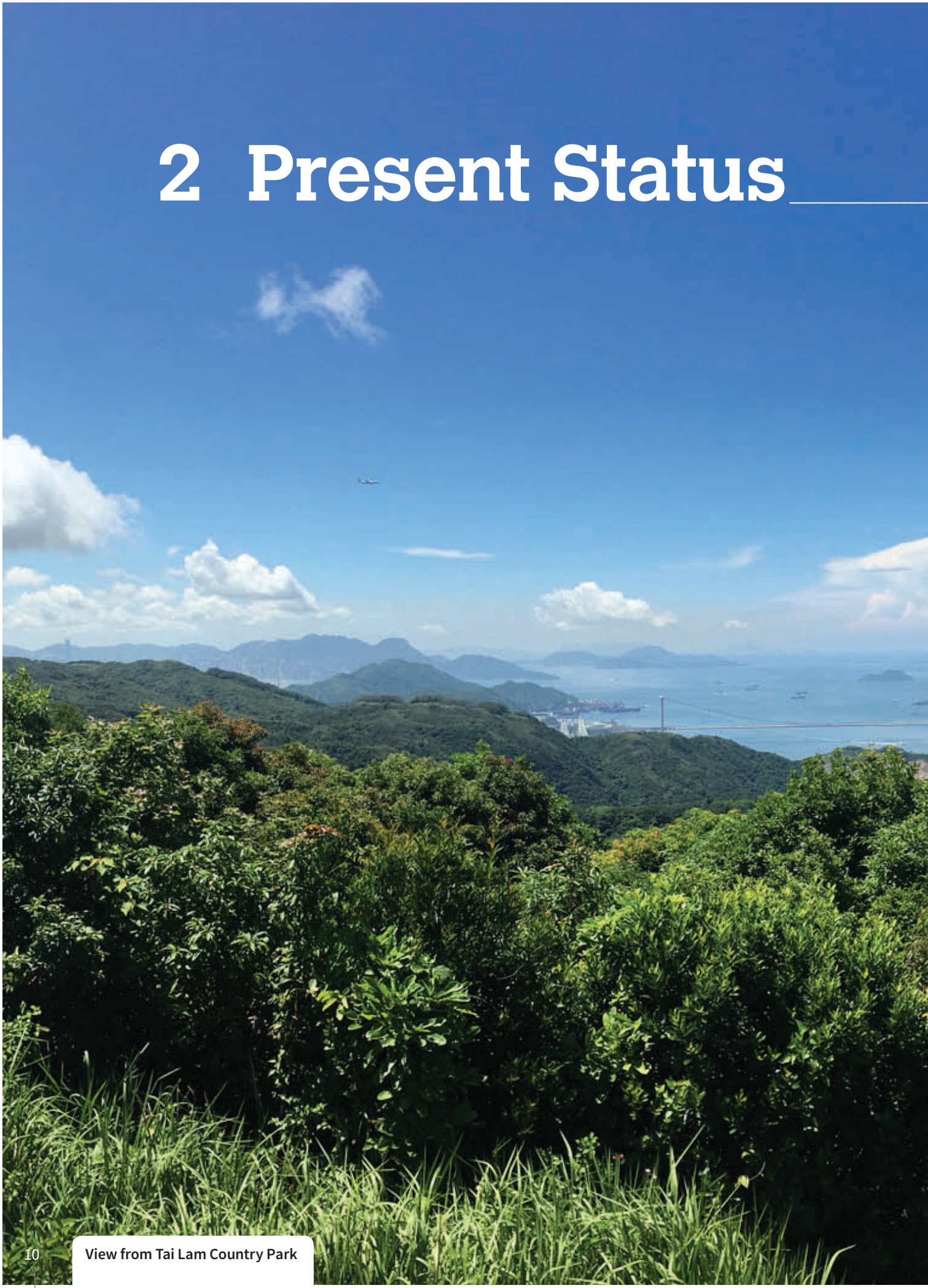
Considering that Hong Kong is among the most highly urbanised and densely populated cities in the world, the biodiversity of Hong Kong is impressively rich for such a small place. Overall, our land supports more than 3 300 species of vascular plants including 2 100 native species, 57 species of terrestrial mammals, more than 540 species of birds, 198 species of freshwater fishes, 86 species of reptiles, 24 species of amphibians, 236 species of butterflies and 123 species of dragonflies. In our waters, we can find over 1000 species of marine fishes; two species of resident marine mammals, 84 species of hard corals, as well as 67 species of soft corals and gorgonians. Hong Kong is less than 1% of the area of Guangdong Province, but we have more than one-third of the amphibian species recorded there. Our record of birds accounts for over one-third of the total recorded in China. The number of hard coral species in our waters surpasses that in the Caribbean Sea.

Hong Kong Camellia
(*Camellia hongkongensis*)

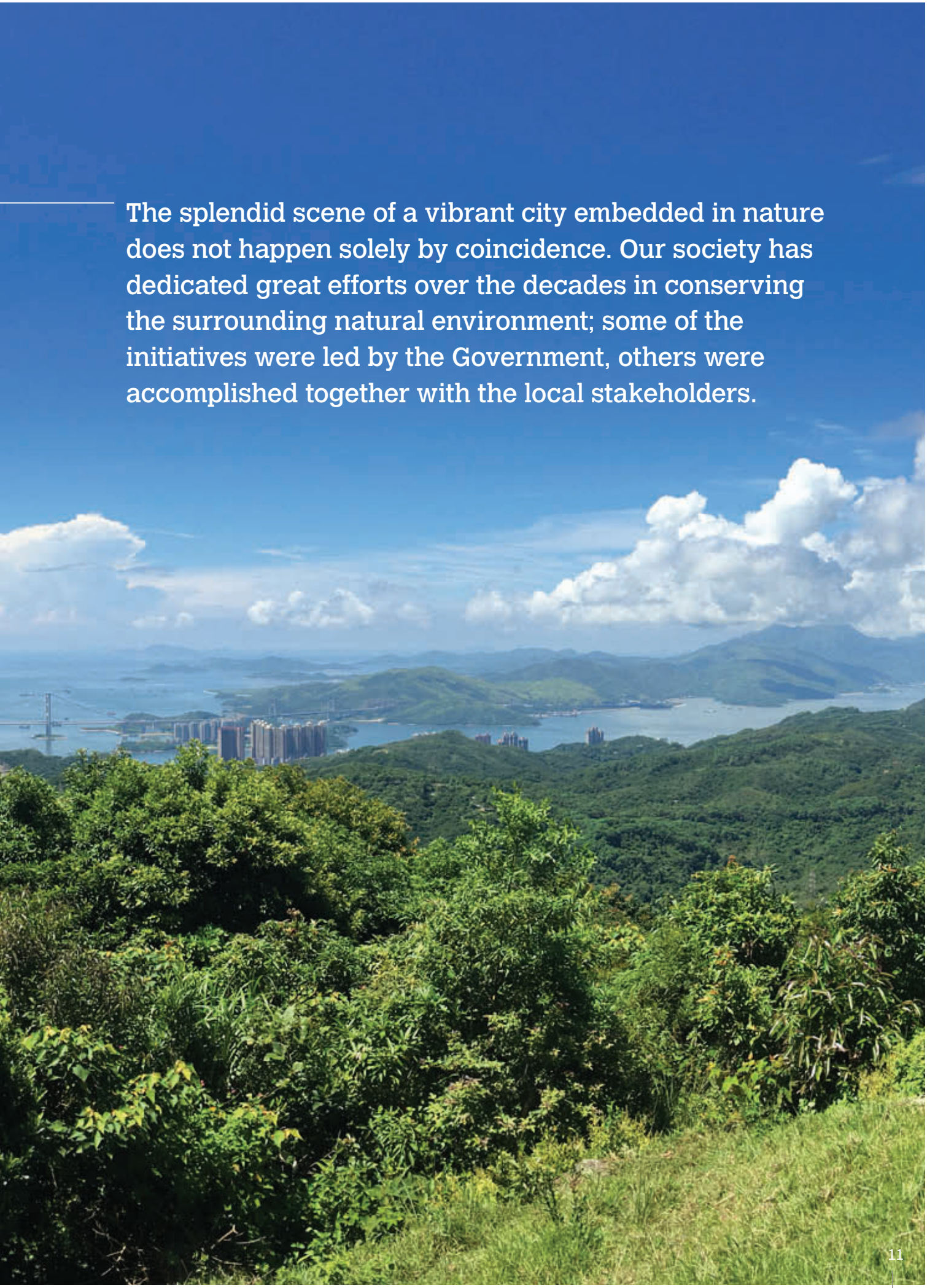
Hong Kong Balsam
(*Impatiens hongkongensis*)

Among our rich biodiversity, a number of the species recorded are endemic to Hong Kong. For example, the Bogadek's Burrowing Lizard (*Dibamus bogadeki*) is found on a few offshore islands in Hong Kong but nowhere else in the world. Other species first discovered here and named after Hong Kong include Hong Kong Camellia (*Camellia hongkongensis*), Hong Kong Balsam (*Impatiens hongkongensis*) and Hong Kong Newt (*Paramesotriton hongkongensis*). Some globally threatened species are also found here, such as Black-faced Spoonbill (*Platalea minor*), Romer's Tree Frog (*Liuixalus romeri*), Three-banded Box Turtle (*Cuora trifasciata*), Chinese Pangolin (*Manis pentadactyla*), and Indo-pacific Finless Porpoise (*Neophocaena phocaenoides*).

2 Present Status



View from Tai Lam Country Park



The splendid scene of a vibrant city embedded in nature does not happen solely by coincidence. Our society has dedicated great efforts over the decades in conserving the surrounding natural environment; some of the initiatives were led by the Government, others were accomplished together with the local stakeholders.

2 Present Status

2.1 Protection of ecosystems

One of the main ways Hong Kong has been pursuing nature conservation objectives and supporting biodiversity is by designating ecologically-important sites as protected areas to comprehensively protect the ecosystems therein and conserve wildlife *in-situ*. There are also administrative measures and collaborations with private landowners and stakeholders to keep these valuable ecosystems from being adversely impacted by incompatible development.

Designation for nature conservation purposes

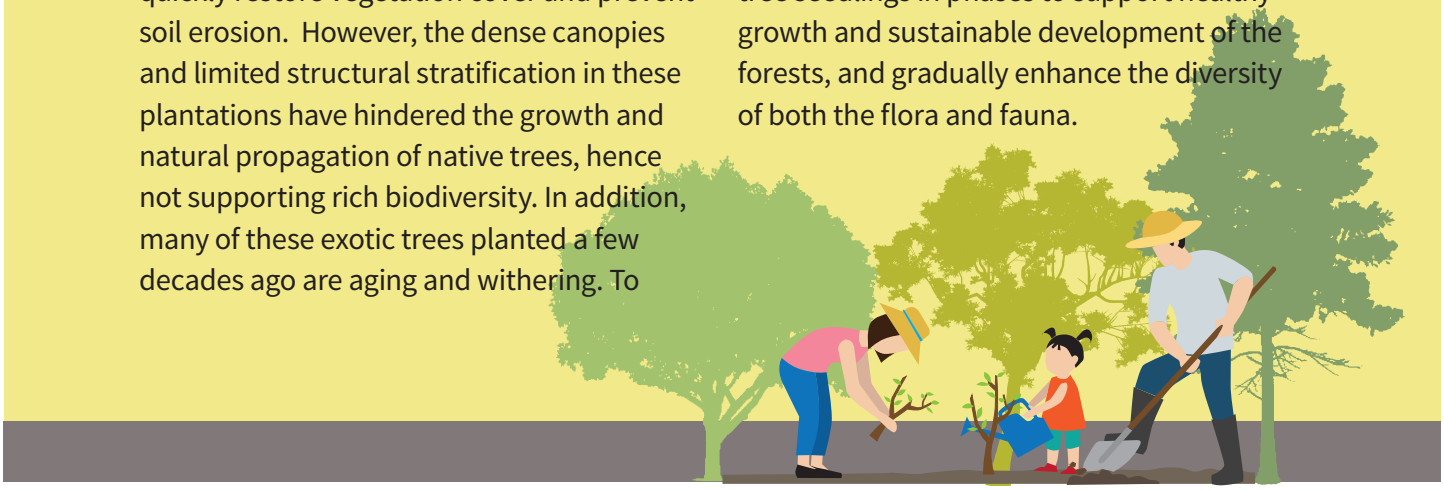
Twenty four country parks and 22 special areas (half of which are within country parks) are established in Hong Kong under the **Country Parks Ordinance (Cap. 208)** enacted in 1976 for the purposes of nature conservation, outdoor recreation and countryside education. About 44 300 hectares of forests, shrublands, grasslands and most of the stream origins in the territory are covered, which account for almost 40% of the total land area in Hong Kong.

Four marine parks and one marine reserve covering a total of 2 430 hectares of Hong Kong waters have been designated under the **Marine Parks Ordinance (Cap. 476)** since 1995, to protect and manage ecologically important coral communities, seagrass and algal beds, rocky shores and other coastal and marine habitats for conservation, education and recreation. Destructive activities including trawling, unauthorised fishing, hunting or collecting of marine life are prohibited. The marine reserve has higher conservation value. Controls there are therefore more stringent and activities are strictly limited to prior-authorised scientific research and studies.

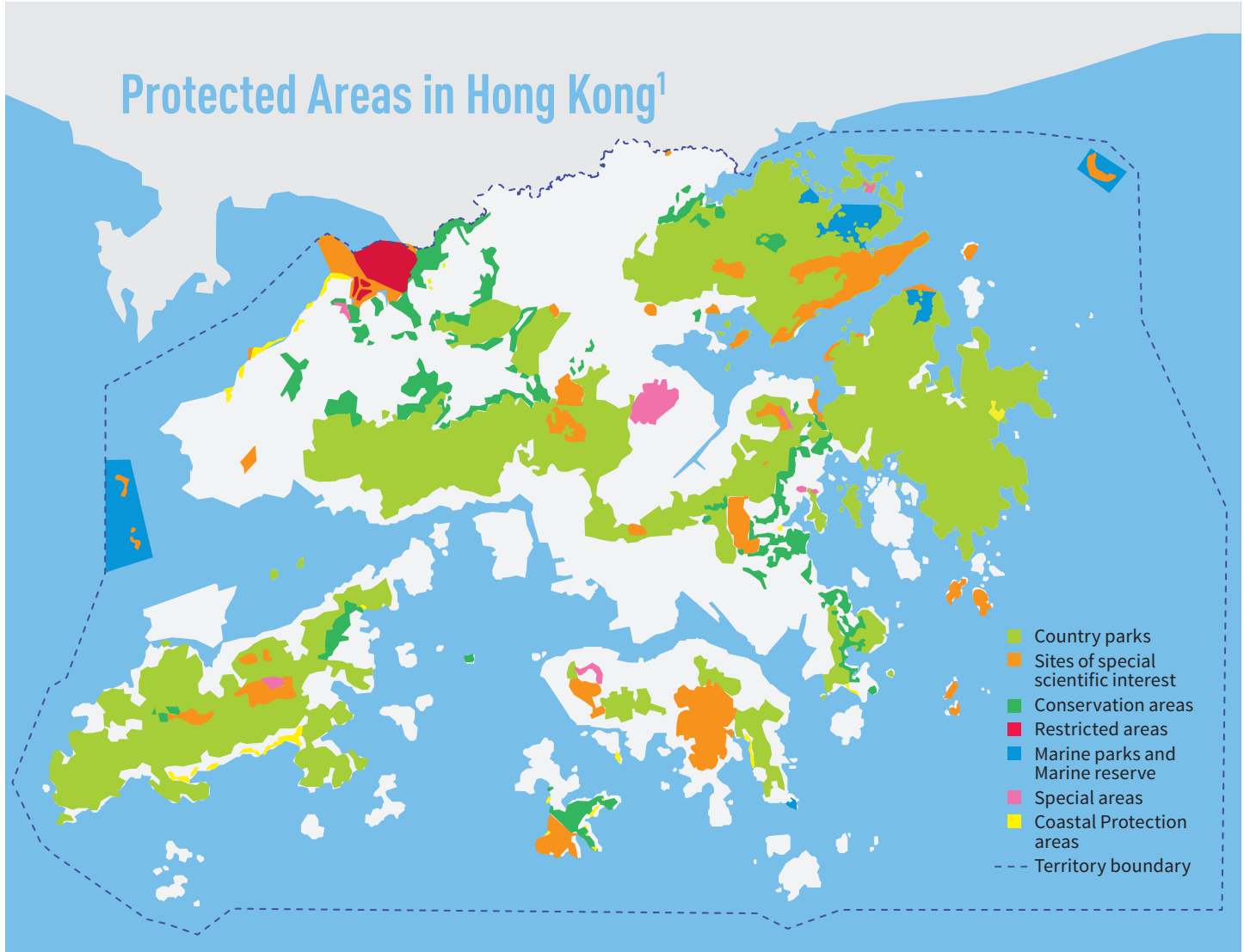
In addition, three ecologically important habitats were designated as **Restricted Areas under the Wild Animals Protection Ordinance (Cap. 170)** to restrict human access and minimise disturbance to the habitats and wildlife there. These include the mature woodlands behind the village of Yim Tso Ha at Starling Inlet, the Mai Po Marshes and intertidal mudflats of Inner Deep Bay, and the sandy beach at Sham Wan on Lamma Island.

Country park plantation enrichment project

Exotic pioneer species such as Taiwan Acacia (*Acacia confusa*), Brisbane Box (*Lophostemon confertus*) and Slash Pine (*Pinus elliottii*) were formerly planted in the country parks to quickly restore vegetation cover and prevent soil erosion. However, the dense canopies and limited structural stratification in these plantations have hindered the growth and natural propagation of native trees, hence not supporting rich biodiversity. In addition, many of these exotic trees planted a few decades ago are aging and withering. To enhance the ecological value of existing plantations, a Plantation Enrichment Project (PEP) was rolled out in 2009. Withering and aging exotic trees will be replaced by native tree seedlings in phases to support healthy growth and sustainable development of the forests, and gradually enhance the diversity of both the flora and fauna.



Protected Areas in Hong Kong[1]



The Mai Po Marshes and Inner Deep Bay area

Listed as a Ramsar Site, i.e. a Wetland of International Importance, and spanning across some 1 500 hectares of wetland, the Mai Po Marshes and Inner Deep Bay area comprises an estuarine mudflat, *gei wais* (tidal shrimp ponds), fish ponds, and the largest mangrove stand in Hong Kong. Its scale also puts it among the largest reedbeds when juxtaposed against those in Guangdong Province. It is an over-wintering and refuelling station for 50 000 to 80 000 migratory waterbirds every year, including some 50 globally-threatened species. The Ramsar Site is strategically zoned and managed based on habitat types, ecological value, and existing land uses. Access to the Core Zone and Biodiversity Management Zone is restricted; ecologically-sustainable aquaculture is encouraged in the Wise Use Zone and Private Land Zone.

So far, about 44 300 hectares, or more than 40% of Hong Kong's territory has been designated as country parks or special areas. This percentage compares favourably with other cities at a similar stage of economic development. In fact, in 2015 we were ranked fifth among world economies in our share of territorial area under protection[2]. Our protected areas offer a sanctuary for wildlife—over 98% of our terrestrial wildlife is represented in the protected areas. As a result, despite limited land resources and rapid development over the years, Hong Kong still enjoys a rich biodiversity.

Land use planning and development control

Other than designation for nature conservation purposes, planning and other administrative controls are also deployed to protect ecologically-important habitats from being adversely impacted by incompatible development.

The Town Planning Ordinance (Cap. 131) provides for proper zoning of ecologically sensitive areas on statutory town plans, to protect natural landscapes and habitats and provide the planning authority with the powers to enforce against unauthorised developments in areas designated as development permission areas. The planning intentions of conservation zonings such as Site of Special Scientific Interest (SSSI), Conservation Area (CA) and Coastal Protection Area (CPA) have a general presumption against development and are meant to protect and retain the existing natural landscape, ecological or topographical features of the area for conservation, educational and research purposes. Within conservation zones, few uses other than those necessary for management of natural resources are permitted, sometimes with conditions upon applications to the Town Planning Board. In addition, uses in neighbouring areas are often controlled to minimise adverse impacts on the conservation zonings.

The Government has also issued the Hong Kong Planning Standards and Guidelines[3] (HKPSG) and other practice notes to guide the town planning processes which contribute to minimising the adverse impacts of development on the environment and enhancing the quality of life of residents.

Site of Special Scientific Interest (SSSI)

Land-based or marine sites which are of special interest because of their floral, faunal, geographical or geological features are identified and listed as SSSIs. The listing of SSSIs is primarily an administrative measure to ensure that Government departments are aware of the scientific importance of the sites concerned, so that due consideration on conservation would be given when developments within or near these sites are proposed. Currently, there are 67 **SSSIs** covering a total area of about 7 526 hectares and including representatives of various habitats, such as egretries (e.g. A Chau SSSI), important butterfly habitats (e.g. Fung Yuen Valley and Siu Lang Shui SSSIs), woodlands (e.g. Nam Fung Road Woodland SSSI) and mangroves (e.g. Kei Ling Ha Mangal SSSI). A number of sites are listed for their geological features.

The procedures for considering development proposals are also clearly stipulated in the legislation. Any major project to be carried out within or in proximity to ecologically sensitive areas may potentially constitute a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). This Ordinance provides that project proponents should carefully scrutinise potential ecological impacts of designated projects at an early or planning stage, make necessary adjustments to avoid adversely affecting or minimise those impacts on ecologically important sites and minimise other impacts on the natural environment, and plan for mitigating or compensating for residual impacts that may arise. Only projects meeting these requirements would be issued with environmental permits to proceed under the Ordinance.

Conservation of sites under private ownership

In addition to undertaking legislative and administrative measures to safeguard ecosystems, the Government recognises that landowners and rural communities can play important roles to play in protecting sites of conservation value under private ownership, and proposed two schemes to engage the local stakeholders to achieve nature conservation objectives at 12 Priority Sites for enhanced conservation.

In the Public-Private Partnership (PPP) scheme, development of an agreed scale would be allowed at the ecologically less sensitive portion of any of the 12 Priority Sites, provided that the project proponent undertakes to conserve and manage the rest of the site on a long-term basis.

As for the Management Agreement (MA) scheme, non-profit-making organisations may apply for funding from the Environment and Conservation Fund (ECF) for entering into management agreements with the landowners at the 12 Priority Sites as well as country park enclaves and private land within country parks. A non-profit-making organisation will provide the landowners with financial incentives in exchange for land management rights or their co-operation in enhancing conservation of the sites concerned. Four projects are currently in operation under the MA scheme, at the Priority Sites in Fung Yuen, Long Valley and Ho Sheung Heung, Ramsar Site and Deep Bay Wetland outside Ramsar Site.

Environment and Conservation Fund (ECF)

ECF is part of the Government's long-term commitment to environmental protection and conservation. Established in 1994, it has been operating to support green projects and initiatives run by the community. In 2013, the Government injected 5 billion dollar to ECF as seed money to generate annual investment returns for supporting green projects. Since its establishment and up to the end of June 2016, ECF has funded over 5 000 educational, research, and other projects and activities in relation to environmental and conservation matters implemented by local non-profit making organisations.

2.2 Conservation of species and genetic diversity

In addition to conserving habitats to render protection at the ecosystems level, the Government has adopted specific measures to conserve species and genetic diversity. These efforts target the particular requirements of a species or specific threats. They include law enforcement, monitoring, species recovery programmes, control of invasive alien species, etc.

Legislation

- **Forests and Countryside Ordinance (Cap. 96)** prohibits destruction of trees and plants in forests and plantations on Government land, lighting of fire in any forest / plantation or open countryside, and possession of listed plant species.
- **Wild Animals Protection Ordinance (Cap. 170)** prohibits hunting or wilful disturbance of wild animals, possession of hunting appliances and possession of listed wild animals.
- **Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586)** regulates the import, export, re-export and possession of endangered species of animals and plants, including their parts and derivatives.
- **Fisheries Protection Ordinance (Cap. 171)** promotes the conservation of fish and other forms of aquatic life within the waters of Hong Kong, regulates fishing practices, and prevents activities detrimental to the sustainable development of the fishing industry.
- **Genetically Modified Organisms (Control of Release) Ordinance (Cap. 607)** controls the release of genetically modified organisms (GMOs) within Hong Kong's borders and their trans-boundary movements.

Biodiversity surveys

The Hong Kong Herbarium has been collecting plant specimens in the territory since its establishment in 1878, and the Agriculture, Fisheries and Conservation Department (AFCD) has been conducting a territory-wide long-term survey of terrestrial biodiversity since 2002. The survey programme covers the distribution and abundance of major taxa groups including mammals, birds, reptiles, amphibians, freshwater fishes, butterflies, dragonflies and beetles, as well as the status and composition of important plant communities. AFCD has also commissioned studies on marine mammals, corals and other marine organisms. In addition, academics, amateur naturalists and green groups have conducted ecological surveys of varying intensities on specific taxa groups, notably birds, insects and marine fauna.

Apart from gaining valuable knowledge, these surveys brought encouraging findings on species new to Hong Kong and even new to science. More importantly, the long-term data collected help the Government set priorities in habitat and species conservation, and facilitate the formulation and implementation of biodiversity-related policies.

Species recovery and conservation programmes

Fauna conservation action plans generally consist of monitoring, *in-situ* or *ex-situ* conservation measures, research to fill knowledge gaps and public education. Examples include:

- **Chinese White Dolphin** (*Sousa chinensis*): the plan involves management, public education, research and cross-boundary cooperation, to allow the species to continue using Hong Kong waters as a portion of their population range in the Pearl River Estuary.
- **Green Turtle** (*Chelonia mydas*): the plan includes clearing of overgrown vegetation and rubbish at the nesting site at Sham Wan Beach of Lamma Island prior to the nesting season, restricting access to the nesting site to minimise disturbance during the nesting season, and monitoring egg-laying.
- **Black-faced Spoonbill** (*Platalea minor*): the plan contains prioritised actions on improving the quality of wetland habitats to serve as feeding and roosting grounds of Black-faced Spoonbills during winter, monitoring and research, education and training as well as regional cooperation.

Green Turtle (*Chelonia mydas*)

Romer's Tree Frog (*Liuixalus romeri*)

- **Romer's Tree Frog** (*Liuixalus romeri)*: the plan includes protection and habitat enhancement of important breeding sites, population monitoring, exploration of suitable translocation sites, trial establishment of captive breeding populations and education programmes.

For the conservation of our native flora, both *in-situ* and *ex-situ* measures as well as public education are important. Other than designating protected areas and enforcing the Forests and Countryside Ordinance, some rare or endangered plant species, such as the Fortune's Keteleeria (*Keteleeria fortunei*), Crapnell's Camellia (*Camellia crapnelliana*) and Grantham's Camellia (*Camellia granthamiana*) have been propagated and planted by AFCD in our countryside to increase their populations and enrich our plant diversity. We have also established about 300 representative species of the native flora, including some rare and protected species, in Shing Mun Arboretum for *ex-situ* conservation and education purposes.

Control on trade in endangered species

To protect endangered animals and plant species from illegal trade, the Government vigorously enforces the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586), the local legislation that gives effect to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The Customs and Excise Department (C&ED) has been collaborating closely with AFCD in combating cross-boundary smuggling of endangered species by incepting lorries, cargos and vessels at boundary control points. Operations and prosecutions over the years have contributed to deterring illegal trade of these endangered species.

Control of invasive alien species

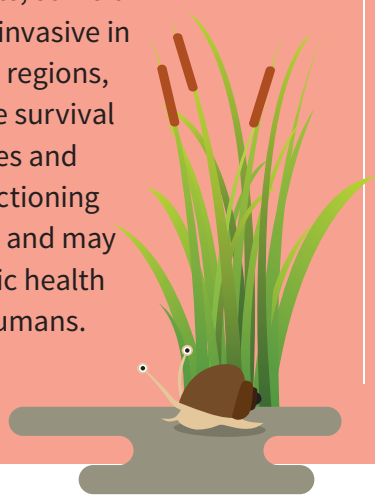
In order to minimise threats imposed by invasive alien species (IAS), an integrated approach has been adopted to control the import and release as well as to prevent the encroachment of IAS that are of relatively higher ecological/ public health concern, including the Red Imported Fire Ant (*Solenopsis invicta)*, Mile-a-minute Weed (*Mikania micrantha*), *Spartina* species, exotic mangroves (*Sonneratia* species) and House Crows (*Corvus splendens*), on ecologically sensitive areas. Various government departments have also imposed legislative control over the release of animals into venues/areas under their management.

Control on the release of genetically-modified organisms

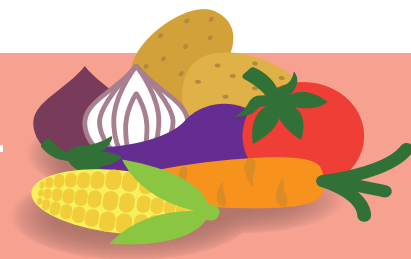
The **Genetically Modified Organisms (Control of Release) Ordinance (Cap. 607)** that came into force in March 2011 gives effect to the Cartagena Protocol on Biosafety to the Convention on Biological Diversity (CBD), to control the release into the environment and trans-boundary movement of GMOs. It establishes a mechanism for applying to AFCD for prior approval for releasing a GMO into the environment, and requires that shipments containing GMOs, when being imported or exported, have to be accompanied by prescribed documents.

Invasive alien species

Alien species are species introduced outside its natural distribution. Without predators or competitors found in their original habitats, some of these become invasive in the introduced regions, threatening the survival of native species and the proper functioning of ecosystems, and may also pose public health concerns for humans.



Genetically-modified organisms



GMOs are living organisms possessing a novel combination of genetic material obtained through the use of modern biotechnology. GMOs cover a variety of crops (such as pest-resistant and/or herbicide-tolerant corn, cotton and soybean and virus-resistant papaya), fish, flowers, etc. Uncontrolled release of GMOs into the environment may adversely affect native species or ecosystems.

Country parks for outdoor recreation and conservation education

Hosting a rich collection of landscapes and wildlife, the country parks not only offer venues for the public to enjoy outdoor recreation activities such as hiking, camping, mountain biking, barbecuing and picnicking; the visitor centres, tree walks, and education programmes at the country parks also encourage visitors to appreciate nature and learbn about conservation. Each year the country parks receive more than 11 million visitors from near and afar.

Wan Tsai, Sai Kung

Lai Chi Wo Nature Trail, New Territories

2.3 Education and public awareness

Experiential learning opportunities for the public

Our country parks and marine parks as well as the Hong Kong Wetland Park (HKWP) are equipped with informative visitor centres and run a variety of nature appreciation activities, such as workshops, eco-tours and volunteering schemes, for participants of all ages to promote local biodiversity and its conservation. Many of these activities are theme-based and organised in collaboration with user groups or non-government organisations (NGOs). For example, the Hong Kong Reef Check is an annual citizen science programme aiming at raising public awareness and engaging the public in protecting local coral communities. The country parks public education programme "Take Your Litter Home" was launched in 2015 to promote environmentally responsible hiking habit among users.

Supporting the school curriculum

A wide array of interactive and activity-based programmes targeting kindergartens, primary schools and secondary schools are offered by AFCD, such as guided excursions, competitions and workshops, to encourage students to learn by experience and enhance their awareness on biodiversity conservation. Some of these are designed to supplement the school curriculum. HKWP also organises a wide range of teacher workshops and provides ready-for-use teaching materials on wetland ecology and conservation to support teaching and learning.

2.4 Sustainable development

Sustainability Assessment

Sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."[4,5] A sustainable future for Hong Kong would require a change of our mindset to achieve economic and social development with conservation of the environment. It requires all sectors of the community to work hand in hand.

The Council for Sustainable Development (SDC) and the sustainability assessment system were established to promote sustainability in Hong Kong. The latter requires all Government bureaux and departments to assess new strategic initiatives or major programmes which may bring about noticeable or persistent environmental, social and economic implications. The process helps proponents identify cross-sectoral or sensitive issues, and facilitate bureaux and departments to resolve them at an early stage.

Fisheries

Capture fisheries and aquaculture have a long history in Hong Kong, and they continue to provide a steady supply of fresh fish to local consumers nowadays. In 2015, the local capture fisheries and marine fish culture production account for about one-third of the seafood consumed in Hong Kong. With the well-being of the industry being intricately linked with the surrounding environment, the Government has been promoting sustainable development of the industry and conserving fisheries resources in the Hong Kong waters, including:

- **Banning trawling in Hong Kong waters:** the ban has been in force since 31 December 2012 to help restore damaged seabed and depleted fisheries resources in local waters. In conjunction, the **Fisheries Protection Ordinance (Cap. 171)** has been amended to control the number and engine power of domestic fishing vessels. Other than providing one-off assistance package to alleviate the impact of the ban on the livelihoods of eligible trawler fishermen, AFCD has also organised training programmes to help them switch to other sustainable fishing operations.

- **Combating destructive fishing practices:** enforcement actions are conducted to deter destructive fishing practices prohibited under the **Fisheries Protection Ordinance (Cap. 171)**, viz. the use of explosives, toxic substances, trawling devices and apparatus that transmits electricity, as well as dredging and suction.

Apart from the effort in conserving the fisheries resources in Hong Kong waters, the Government is planning to implement the Convention on Conservation of Antarctic Marine Living Resources in Hong Kong. This Convention aims at conserving Antarctic marine living resources, and the Commission of the Convention has adopted in 2000 a conservation measure to protect significantly exploited toothfish from illegal, unreported and unregulated fishing activities. The Government proposes to introduce a control scheme for the trade of toothfish through a new piece of legislation. AFCD is undertaking relevant preparatory work for the new legislation including consultation with the stakeholders.

Agriculture

Local agriculture also has a long history in supplying good quality fresh produce for the local market. However, concomitant with Hong Kong's economic development and population growth, the agricultural sector has been diminishing over time. Hong Kong has become increasingly reliant on imports for food supply. Agricultural activities in Hong Kong are undertaken predominantly in the rural New Territories and urban fringes (including fringes of new towns). According to surveys conducted by AFCD, as at end 2015, there were about 685 hectares of active agricultural land, while the remaining agricultural land was mostly fallow.

Long Valley, New Territories

Despite its relatively small scale, the industry produces a sizeable amount of vegetables, poultry and pigs for local consumption. Locally-produced vegetables, live poultry and live pigs accounted for 1.8%, 95% and 6.1% of the market share in 2015, respectively.

AFCD provides basic infrastructure and technical support necessary for developing modern, efficient, safe and environmentally acceptable farming. It also promotes the application of ecological concepts and principles in farming to improve agro-ecology and long-term sustainability.

Specifically, AFCD actively encourages and supports local farmers to develop organic farming, which can produce food in an environmental-friendly and sustainable manner and generate a premium return for farmers. Other than providing technical advice to traditional farms switching to organic farming, AFCD also assists in the setting up of independent, third-party certification services and provides marketing support. At the end of 2015, there were 270 organic farms in Hong Kong which have joined AFCD's Organic Farming Supporting Service, supplying about six tonnes of organic produce daily.

Bringing nature back into urban areas

Our citizens are expressing greater interest than ever in more liveable urban space that provides multiple benefits to the community, the environment and the economy. This has sparked off improvements and innovations in the planning and design of our urban environment to create more space for the nature in the city. Relevant initiatives include:

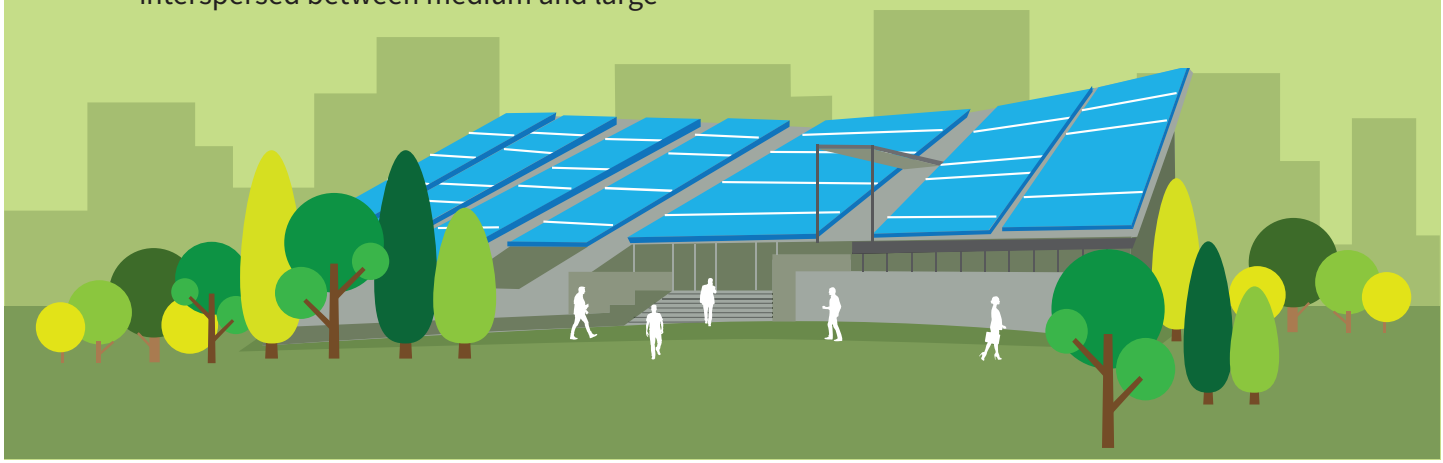
- **Sustainable building design:** the Government incentivises the adoption of sustainable building designs in private developments with a view to creating a better quality built and living environment for Hong Kong. Since April 2011, the BEAM Plus[6] includes protecting the ecological value of the site, minimising impacts on freshwater and ground water systems, and preserving or expanding greenery among the rating criteria for certification. Compliance with the Buildings Department's Sustainable Building Design Guidelines, which require the provision of at least 20% greenery in site coverage for sites 1 000m^2 or larger in forms amenable to the site circumstances for mitigating Urban Heat Island (UHI) effect and improving the environmental quality of urban space; have been imposed as lease conditions for new land grants where applicable, and preconditions for any private development seeking for gross floor area concessions for certain green and amenity features. At the same time, the Government leads by example and its projects pledge for achieving leading BEAM Plus ratings and giving priority to at-grade tree planting, thereby serving a further objective of promoting biodiversity.

- **Urban parks and gardens:** the city has 1 500 public parks and gardens including 25 major parks managed by the Leisure and Cultural Services Department (LCSD). With their various landscaping features including lawns, tree canopies, bushes and shallow ponds, they provide a network of habitats in the middle of the urban area for wildlife in particular birds and butterflies; their presence in turn enhances the pleasure of visiting the parks and raises citizen's awareness about the biodiversity in the city.

- **Sustainable slope greening:** native species are used in vegetation covers on man-made slopes and natural hillsides that are dealt with under the Landslip Prevention and Mitigation Programme. Native species provide habitats for birds and insects, thus enhancing biodiversity and natural succession of the slope vegetation covers.

Zero Carbon Building

Built in 2012 in the Kowloon Bay district by the Development Bureau in partnership with the Construction Industry Council, it is the first building in Hong Kong that completely offsets its carbon footprint using renewable energy. Its 2 000m^2 native urban woodland takes up more than 13% of the total site area. More than 220 native trees of over 40 species were planted, with small trees interspersed between medium and large ones to mimic the structure of a natural woodland. This structural stratification is expected to provide habitats for wildlife. At the same time, tree canopies and the vegetative ground coverage are anticipated to absorb at least 8 500 kg of carbon dioxide yearly, mitigating the Urban Heat Island (UHI) effect and improving the local microclimate.



Ho Chung River improvement works

The natural substrate in the river bed of Ho Chung River was preserved. The crevices in the natural river bed support the growth of aquatic vegetation. In-stream refugia and flow deflectors were also installed, providing still water areas for aquatic animals to rest or hide. Fish ladders were also laid in the river to help fish getting to the upstream where the cooler temperature provides a more favourable place to reproduce.

- **Greening Master Plans:** Greening Master Plans aim at providing overall greening frameworks by identifying locations for planting and recommending desirable planting themes and species, to enhance the environment of urban areas. The Zero Carbon Building and some other recent projects had taken a step further to create native woodlands within urban areas to benefit both local wildlife and people.

- **"Blue-green" infrastructures:** this is about integrating sustainable spatial designs into developed areas, for example by creating corridors of water bodies and vegetation within urban areas. Our planning and works departments have actively incorporated this concept when planning for New Development Areas, drainage improvement works as well as urban restructuring projects.

- **Promoting urban forestry:** urban forests enrich our landscapes and improve the local environment of cities, contributing to a wide range of environmental and socio-economic benefits. Urban forests can also serve as important ecological linkages with our countryside and encourage movement of wildlife among different parts of the territory. Urban forestry provides a strategic framework for better management of our trees and plants in the urban settings in a sustainable manner.

Lok Ma Chau Spurline mitigation wetland
(Photo credit: MTR Corporation Limited)

Footnotes

1. The protected areas (coloured areas) indicated on the map are for illustration purpose only and their boundaries shall not be construed as updated or validated. Sites with multiple protection status are shown in one colour only.

2. Extracted from the Travel and Tourism Competitiveness Report 2015 compiled by World Economic Forum <http://reports.weforum.org/travel-and-tourism-competitiveness-report-2015/economy-rankings/#indicatorId=SUMPROTAREA>

3. The HKPSG is a Government manual of criteria for determining the scale, location and site requirements of various land uses and facilities. The HKPSG is applied in planning studies, preparation/revision of town plans and development projects.

4. Report of the World Commission on Environment and Development: Our Common Future (1987). < http://www.un-documents.net/wced-ocf.htm>

5. Sustainable development for Hong Kong means finding ways to increase prosperity and improve the quality of life while reducing overall pollution and waste; meeting our own needs and aspirations without doing damage to the prospects of future generations; and reducing the environmental burden we put on our neighbours and helping to preserve common resources.

6. A holistic green building certification tool catering for Hong Kong's local climate and development intensity and incorporating international best practices. A green building certification tool is a set of criteria on how buildings should be designed, constructed, operated, etc. to increase the overall building sustainability. It also sets a benchmark for government regulators, building professionals and occupants to determine a building's level of environmental performance. Further information on BEAM Plus is at https://www.hkgbc.org.hk/eng/certification.aspx

3 Challenges and Threats

Lin Ma Hang, New Territories

With the projected growth of our population and number of households coupled with citizens' aspiration in creating a more liveable city and reinforcing Hong Kong's global economic competitiveness, there is a continued keen demand for land for housing, economic growth, quality public space, infrastructure and facilities. Meeting this demand sustainably in this highly compacted city while preserving or even promoting Hong Kong's biodiversity would be a major challenge.

3 Challenges and Threats

3.1 Urbanisation and development

The built-up areas take up about 24% of the total land area in the territory, with a very high population density of over 27 000 persons/km^2 thereat. The remaining land area comprises areas of conservation importance and areas subject to topographical and other development constraints. All major developments are subject to Environmental Impact Assessment (EIA) including ecological assessment to ensure that their impacts on the environment are avoided, minimised and controlled.

With the projected growth of our population and number of households coupled with citizens' aspiration in creating a more liveable city and reinforcing Hong Kong's global economic competitiveness, there is a continued keen demand for land for housing, economic growth, quality public space, infrastructure and facilities. Meeting this demand sustainably in this highly compacted city while preserving or even promoting Hong Kong's biodiversity is a major challenge.

We would need to innovate and collaborate widely to weave biodiversity into planning, urban design and development projects, so that habitats could be created and ecosystem services could be delivered within urban areas for the benefit of humans and wildlife. Existing habitats and ecosystems in our rural areas could be further enhanced so as to increase our environmental capacity in tandem with development capacity. Relevant stakeholders should also be engaged to recognise and consider biodiversity concerns together with other social-economic issues such as economic and physical development (e.g. infrastructure, housing etc), public health, employment and education.

3.2 Habitat degradation

Conservation of ecologically important habitats has been a key concern of the Government. However, habitat degradation due to anthropogenic causes such as waste dumping, land-filling or vegetation removal does occur from time

Looking out to Kowloon peninsula from Kowloon Peak

to time, especially on private land designated or zoned for conservation or landscape protection purposes, or proposed to be so designated or zoned. It has also been difficult to apply effective conservation and management measures to areas of high ecological value with land mostly under private ownership. In fact, landowners nowadays often strongly resist proposals to designate their land for conservation because such proposals are perceived to be undermining their land ownership and jeopardise the development potential of their land.

Various environmental legislation, planning and land control measures are in place to regulate habitat-damaging actions and curb unauthorised development in rural areas. The Government will continue to deter and combat illegal activities through enforcement under the respective responsibilities of the relevant Government departments. Nevertheless, given the critical role of landowners as well as that of the local community, conservation on private land will achieve the greatest effect if the locals are engaged in safeguarding important habitats and species from incompatible uses. We would need to promote innovative practices and mobilise resources from all sources in the society to support the protection of priority habitats and maintain the delivery of ecosystem services.

3.3 Over-exploitation of biological resources

We consume different types of biological resources on a daily basis, some of which in large quantities, and many of which do not come from sustainable sources. There is a need to examine the way we consume biological resources, improve public awareness and knowledge about sustainable consumption, and find means to induce behavioural change towards more sustainable consumption.

Illegal harvest and trade is one of the key threats to the survival of many wild species. In Hong Kong, while there are legislation, enforcement programmes and publicity activities for species conservation, the survival of some wild species with high commercial values remain under threat due to illegal harvest. There is an immediate need to enhance conservation of species under the threat of illegal harvest. On the front of combating wildlife crime, improved coordination between various enforcement agencies could facilitate intelligence exchange and strengthen enforcement actions. To better protect some of the highly threatened species, studies should be carried out to clarify their conservation status, in order to inform and guide targeted conservation measures and action plans that could be deployed in collaboration with civic groups.

3.4 Invasive alien species

IAS are capable of quickly reproducing and outcompeting native species, causing ecological, economic and social damage. They may be introduced into new ecosystems through transportation of goods, or deliberate release such as abandoning pets or mercy release in religious rituals. Once established, they are often difficult and costly to control. Despite existing control measures to prevent the encroachment of IAS on ecologically sensitive areas, information on the status and impact of IAS in Hong Kong is relatively scarce. We need to systematically identify effective management controls over target species for safeguarding native species and ecosystems.

3.5 Climate change

Warming of the Earth's atmospheric system has led to climatic changes – warmer temperature, higher sea levels and more frequent and extreme weather events – already felt in many parts of the world including Hong Kong. Conservation of

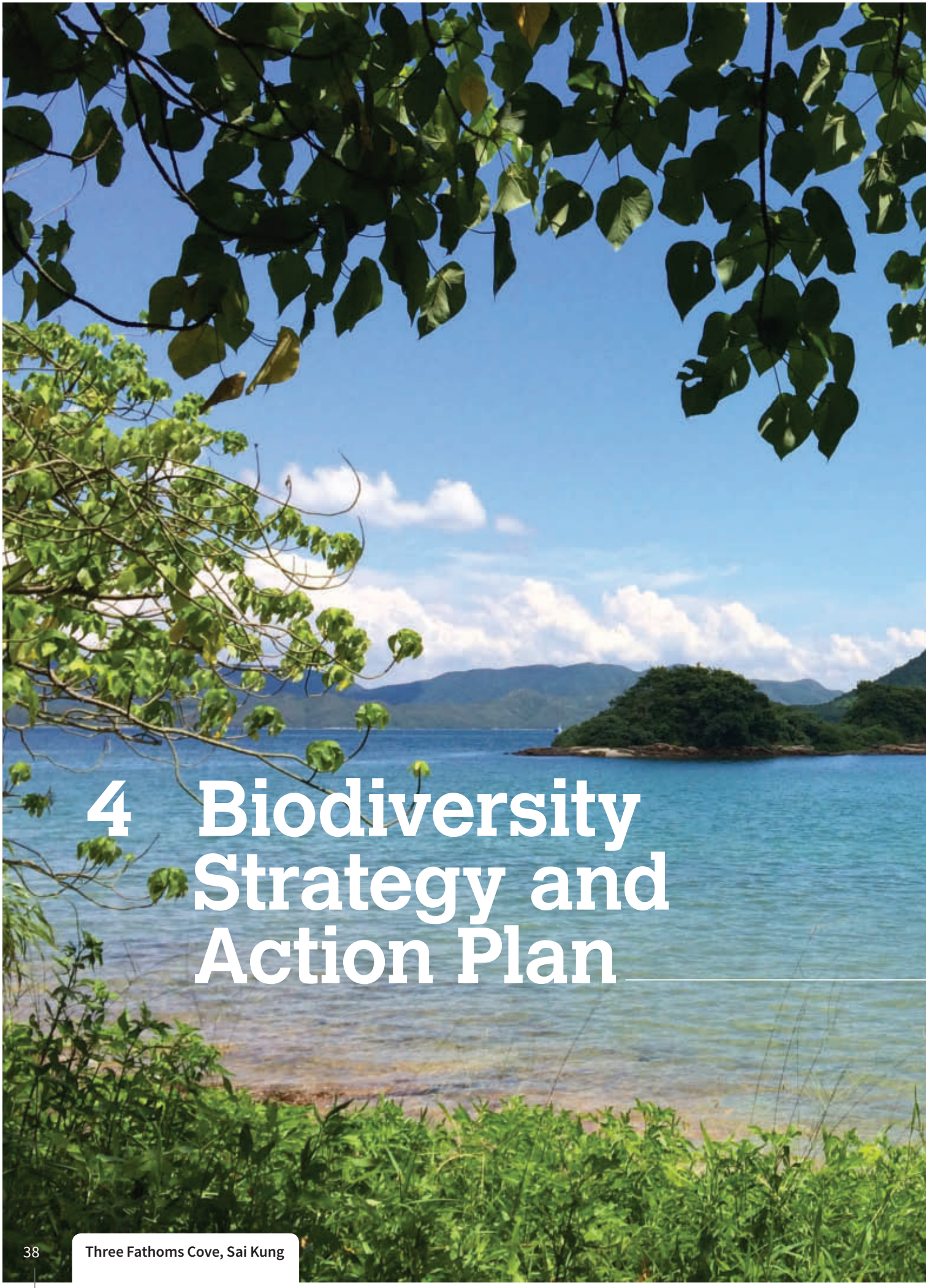
biodiversity will play an increasingly important role in mitigating the challenges climate change poses to our society as well as natural ecosystems. For example, our forests can serve as carbon sinks to sequestrate carbon dioxide from the atmosphere, and our river system and other water bodies could moderate urban temperature and regulate flow of water; protecting intact natural habitats and maintaining habitat connectivity would allow species to seek refuge in the case of climate-related disasters, such as hill fires. We should further explore and demonstrate how the local biodiversity would enhance our adaptation to and resilience against climate change impacts.

3.6 Information gap and public awareness

Hong Kong has an active conservation community supported by professionals and volunteers and a highly qualified and productive research community dedicated to understanding natural sciences and environmental issues. Our citizens, in particular the younger generation, are becoming more interested in environmental issues in recent years.

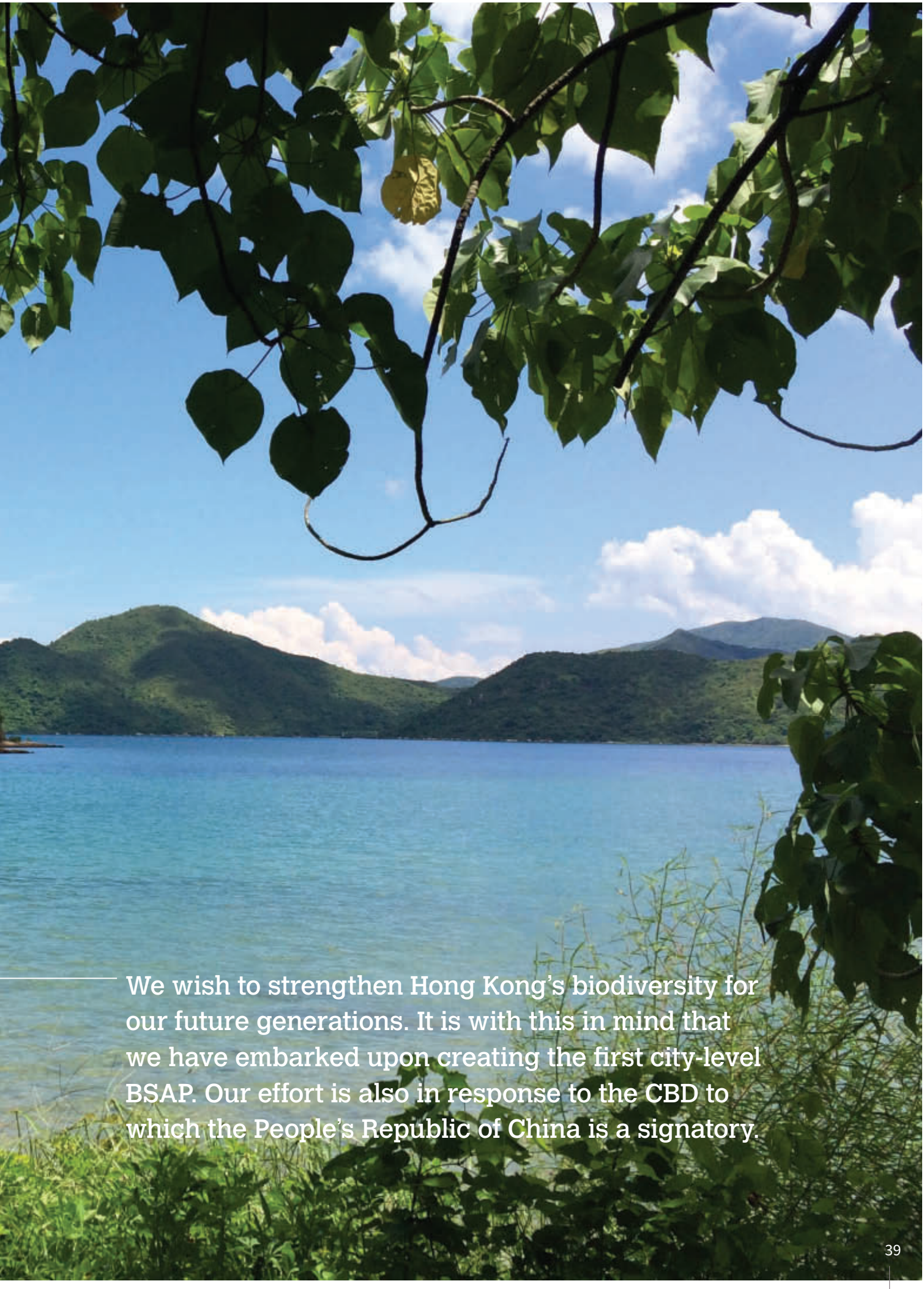
However, biodiversity is not yet widely understood by the public, and stakeholders of relevant sectors are not aware of the impacts of their activities and businesses to biodiversity. The environmental, social and economic importance of biodiversity is not sufficiently recognised, and there is little awareness of the potential benefits of conserving biodiversity. This could stem from incomplete knowledge on biodiversity, such as the status and trends of our habitats and species, interactions and processes embodied, as well as the types and values of ecosystem services being delivered.

To better mainstream biodiversity, we need to convey to the public and relevant sectors the gamut of benefits biodiversity brings to our society, from individual health and community well-being, to cost control and risk management. We need to invest more resources in motivating individuals to appreciate nature and fill in knowledge gaps, and encourage relevant sectors to account for biodiversity in their organisations' planning and operation, thereby opening the door to a feasible and sustainable path of working with nature.



4 Biodiversity Strategy and Action Plan

Three Fathoms Cove, Sai Kung



We wish to strengthen Hong Kong's biodiversity for our future generations. It is with this in mind that we have embarked upon creating the first city-level BSAP. Our effort is also in response to the CBD to which the People's Republic of China is a signatory.

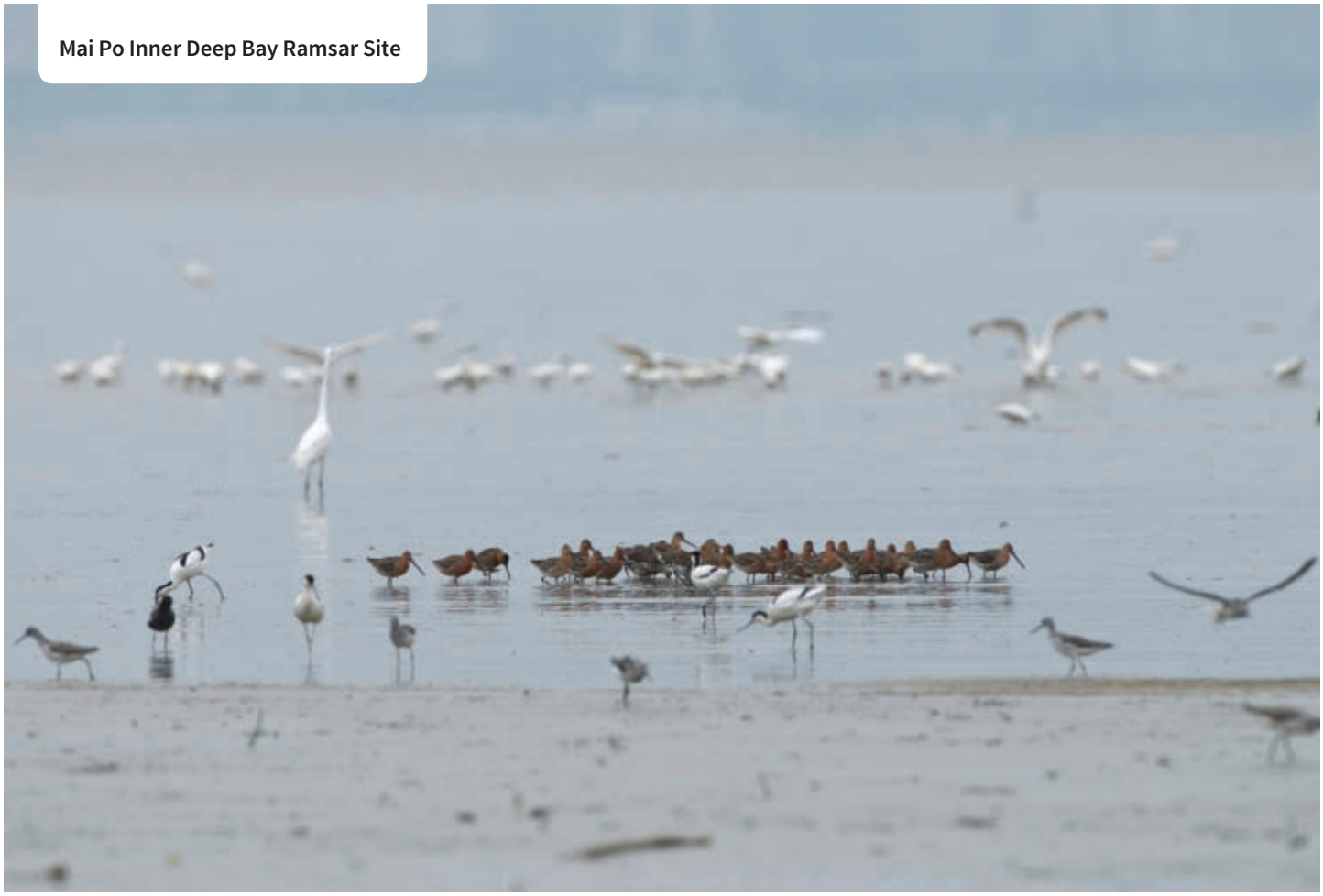
4. Biodiversity Strategy and Action Plan

4.1 Introduction

Our natural environment makes life on earth possible. It is an invaluable resource shared by everyone. As economies continue to develop, living places become more urbanised, and the impact of climate change becomes more apparent, countries around the world have recognised that biodiversity is a global asset of tremendous value to present and future generations. By signing the CBD in 1992, the relevant countries came to a consensus on conserving biodiversity and using its components sustainably.

Today, biodiversity still faces plenty of challenges at a global level, and requires concerted efforts from all to halt its deterioration. Across the continents, climate change, urbanisation and urban sprawl, unsustainable consumption of biological resources, etc. are pressing issues that are affecting human beings. They also challenge Hong Kong to better steward the natural environment while maintaining a competitive edge for economic and social development. With functioning ecosystems bringing a myriad of services to city dwellers, biodiversity and environmental well-being can no longer be separated from liveability and attractiveness of the city. This provides opportunities for us to innovate and weave biodiversity considerations into the urban fabric to bring socio-economic gains, so that Hong Kong will continue to develop sustainably, and extend benefits to all citizens and visitors.

For a densely developed city of its size, Hong Kong should take pride in its rich biodiversity. Indeed the benefits of protecting important habitats for conservation are prominent beyond the city's boundary. Hong Kong is located at the fringe of the Indo-Burma Hotspot[7], which is one of the most bio-diverse regions in the world. An extensive stretch of wetlands in the Mai Po Inner Deep Bay Ramsar Site regularly supports over 100 000 waterbirds migrating along the East Asian-Australasian Flyway[8] every year, and serves as an important wintering and re-fuelling ground for them. Provision of quality re-fuelling habitats enables these waterbirds to survive long-distance migration and breed



Mai Po Inner Deep Bay Ramsar Site

in the subsequent season, hence helping to conserve wildlife, not only in Hong Kong but also in the wider region. To date, the Ramsar Site supports some 50 species of globally-threatened or near-threatened waterbirds. There are also a number of endemic and globally threatened species which thrive in Hong Kong's protected areas. Hong Kong should continue its efforts in contributing to the survival of threatened species in the region by enhancing the management of our protected areas and maintaining ecological corridors with the neighbouring areas. Yet, the approach of biodiversity conservation should go beyond administrative borders, and be holistic in accommodating conservation and sustainable development. Hong Kong has been in regular communication with relevant authorities in Guangdong, Shenzhen and Macao to facilitate information sharing and cooperation on biodiversity conservation in the wider context of the Pearl River Delta region. On the international arena, Hong Kong has been actively engaged in various cooperation forums including those of international conventions. Taking into account local needs and priorities, we will contribute to the concerted efforts on biodiversity conservation at broader scales according to Hong Kong's own conditions and capabilities, in collaboration with neighbouring authorities and partners.

4.2 Formulating a city-level BSAP for Hong Kong

We wish to strengthen Hong Kong's biodiversity for our future generations. It is with this in mind that we have embarked upon creating the first city-level BSAP. Our effort is also in response to the CBD to which the People's Republic of China is a signatory.

A city-level BSAP is a strategic instrument for addressing the threats to biodiversity, identifying priorities, setting strategies as well as outlining actions for supporting biodiversity conservation. City-level BSAPs can assist in translating international biodiversity goals, including the CBD, the Strategic Plan for Biodiversity 2011-2020[9] and its Aichi Biodiversity Targets, into implementable actions at the local level, and therefore can contribute to their respective countries' efforts to implement the CBD.

In 2013, the Government embarked on an exercise to formulate a BSAP for Hong Kong in an open and participatory process. Numerous consultations – including an extensive two-year process with a specifically formed Steering Committee (Annex 2) and a three-month public consultation exercise in 2016 – and awareness-raising activities ranging from short video production to public lectures and discussion forums were held to drive the process forward.

The primary objectives of Hong Kong's first BSAP for the coming five years from 2016-2021 are to:

Convention on Biological Diversity (CBD)

The CBD is an international treaty originated from the United Nation's "Earth Summit" held in Rio de Janeiro, Brazil in 1992. The CBD aims to conserve biodiversity, utilise its components sustainably, and ensure fair and equitable sharing of the benefits arising out of the utilisation of genetic resources. It provides overall goals and general obligations to guide implementation. To date, 196 countries and organisations have ratified or accepted the CBD and become "Parties to the CBD". The People's Republic of China became a Party to the CBD in 1993, and announced its first national BSAP in 1994, which was updated in 2010. The Central People's Government extended the CBD to the Hong Kong Special Administrative Region (HKSAR) in 2011.

(a) **Step up biodiversity conservation and support sustainable development:** through setting out a framework of actions and deploying resources for implementation, the first BSAP will facilitate the enhancement of conservation measures, mainstream biodiversity, advance knowledge and involve the community in biodiversity conservation.

(b) **Contribute to global efforts on biodiversity conservation:** Hong Kong has a role to play in global and regional efforts on biodiversity conservation. Though there is no specific obligation under the CBD for the HKSAR[10], the Government wishes to formulate a city-level BSAP according to Hong Kong's own conditions and capabilities.

(c) **Contribute to China's National BSAP:** Article 6 (a) of the CBD provides, inter alia, that each Party to the CBD shall, in accordance with its particular conditions and capabilities, develop national strategies, plans or programmes for conservation and sustainable use of biodiversity. While the HKSAR is not a Party to the CBD on its own, we have to assist the Central People's Government in fulfilling its obligations under the CBD insofar as the HKSAR is concerned. The China's National BSAP provides strategic guidance for conservation of biodiversity in China. As part of China, Hong Kong will take into account its local needs and priorities and formulate its BSAP to contribute to national efforts on biodiversity conservation.

In formulating Hong Kong's first BSAP, the Government had taken into account the objectives and principles of the CBD, local economic and social priorities, as well as aspirations of the people. This BSAP had been developed through an open and participatory process such that it would be adopted and owned by a wide range of stakeholders from different sectors. Being the first BSAP for Hong Kong, in addition to enhancing conservation measures for biodiversity, we consider that our priority should be on mainstreaming biodiversity so as to create an enabling environment. Sustained efforts will also be put into education and promotion of public awareness which are the cornerstone of conservation and sustainable use of biodiversity. We do not intend to initiate major changes of policies and legislation at this stage. Taking into consideration our stated objectives, we put forward a vision, a mission and a framework of specific actions that are prioritised, effective, practical, realistic and will be subject to monitoring.

4.3 Vision and Mission

The Vision and Mission of Hong Kong's first BSAP are:

Vision

The rich biodiversity of Hong Kong is valued, conserved, restored, sustainably managed and wisely used, thereby maintaining essential ecosystem services and sustaining a healthy and liveable place to the benefits of all people.

Mission

Our mission is to value, conserve and restore the rich biodiversity of Hong Kong, to ensure that it is sustainably managed and wisely used, and to promote the mainstreaming of biodiversity issues and values across all sectors of the society, with social and economic aspects duly considered and balanced, so that ecosystems of Hong Kong will be resilient and will continue to provide essential services, and the precious environment that supports and enriches the life of Hong Kong people will be passed on to the future generations.

Recognising that biodiversity has intrinsic and other values, and that it underpins the ecosystem functioning and the provision of ecosystem services essential for human well-being, we should make the best endeavour to ensure, having regard to Hong Kong's own conditions and capabilities, that Hong Kong's rich biodiversity would be sustainably managed, wisely used and conserved, with social and economic aspects duly considered and balanced, for the present and future generations. To achieve this, biodiversity considerations should be integrated into sectoral planning and decision making, and knowledge of biodiversity, including its values, functioning, status and trends, should be enhanced to better inform sectoral planning and decision making. To safeguard and enhance the status of biodiversity, proper planning, designation and management of a network of protected areas is fundamental. Threats and pressures upon biodiversity outside protected areas should also be addressed. Besides, the need for appropriate ecological connectivity should be considered in view of Hong Kong's geographic location.

4.4 Area 1 – Enhancing conservation measures

Hong Kong compares favourably with other cities of similar size and level of development in terms of its rich biodiversity and the proportion of territory protected for nature conservation. This is the result of decades of effort in nature conservation. Under this BSAP, we want to build upon the existing conservation measures, adapt them in response to changing environments, and rise above the challenges described previously. We will strategically improve these measures with a view to bringing about long-term benefits to biodiversity and people.

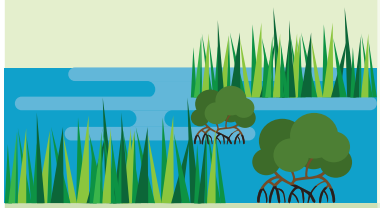
Emphasis in this action area will be placed on enhancing the management of the existing protected areas to maintain healthy ecosystems for delivering ecosystem services. Community buy-in and stakeholder engagement in biodiversity conservation work, through MA or PPP schemes for example, remain an area to focus on, while other innovative and collaborative measures that could enhance the conservation of ecologically important sites outside the protected areas will be explored. Actions are also formulated to target local species requiring specific attention, as well as endangered species threatened by illegal activities.

ACTION 1
Maintain and enhance the management of protected areas

Maintain and enhance the management of country parks, special areas, marine parks, marine reserve, Ramsar Site and SSSIs for biodiversity conservation.

While continuing to maintain and protect all the existing protected areas, the Government will review and enhance the management of protected areas for the conservation of biodiversity. Specifically, conservation management plans will be developed. Within the country parks, replacement of exotic plantations with native species will be carried out to enhance their species diversity and structural complexity.

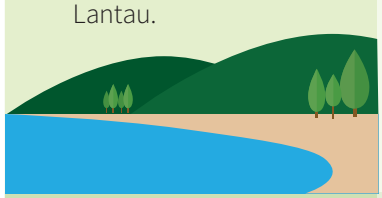
Specific Action	Description
1a Prepare and implement biodiversity management plans, outlining the approach to biodiversity conservation in country parks, special areas, marine parks and marine reserve. 	Country parks have been managed for the purposes of nature conservation, countryside recreation and outdoor education, guided by the principle of management zones. Marine parks are managed for the purposes of conservation, recreation and education under a multiple-use zoning scheme. Controls in marine reserve, which covers a smaller area, are more stringent than in marine parks, only allowing authorised scientific and education studies to be conducted. AFCD will review the approach to conserve biodiversity in country parks, special areas, marine parks and marine reserve. Biodiversity management plans will be prepared for specific areas with rich biodiversity to improve their conservation management.
1b Carry out the PEP to enhance the biodiversity of plantations in country parks.	PEP was launched in 2009 with a view to increasing biodiversity value of plantations in country parks. Major enrichment work carried out under PEP includes thinning of exotic trees, in-planting of native tree seedlings and post-planting maintenance work. AFCD will carry out the next phase of PEP in the coming five years. To promote community involvement in the conservation of our countryside, NGOs and the general public will be engaged in implementing PEP in selected areas of country parks.

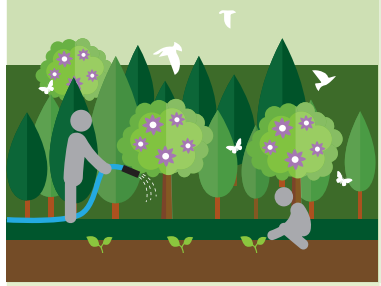
Specific Action	Description
1c Review the management plan for SSSIs to enhance the conservation and monitoring work carried out.	There are currently 67 SSSIs in Hong Kong. They are listed for their special floral, faunal and geological features. AFCD conducts patrol and monitoring work at SSSIs, and also reviews the scientific interest of SSSIs from time to time. Habitat management (such as removal of invasive weeds) has also been carried out at certain SSSIs. AFCD will conduct a systematic review of the management and monitoring plan, as well as the scientific interest of SSSIs, with a view to improving SSSI management.
1d Review the Mai Po Inner Deep Bay Ramsar Site Management Plan (RSMP). 	The first Conservation Strategy and Management Plan for the Ramsar Site was formulated in 1998, which laid down a general framework for the conservation management and wise use of the site. The second RSMP was published in 2011 with updated management compartments, management projects and an action plan. The second RMSP will be updated to reflect the latest situation and to meet the requirements in view of changing circumstances.
1e Enhance habitat management work in the Mai Po Nature Reserve. 	AFCD will enhance the management of habitats and vegetation in the Mai Po Nature Reserve – the "Biodiversity Management Zone" of the Ramsar Site – in accordance with the objectives of RSMP, with a view to enhancing the conservation value of the Ramsar Site for waterbirds and other wildlife. Habitat management will continued to be carried out through subvention and service contracts to WWF-Hong Kong, or conducted directly by AFCD.
1f Review and enhance the ecological monitoring and habitat management plan of HKWP.	Management and ecological monitoring of the constructed/ enhanced habitats at HKWP have been conducted since 2003. Ecological succession occurred with the gradual maturation of the constructed habitats during the last decade. AFCD will commission a study to review the habitat management and ecological monitoring work at HKWP, in order to enhance its ecological value and attractiveness to nature lovers.

ACTION 2
Conserve ecologically important habitats outside the existing protected areas

Enhance existing practices on the identification of ecologically important habitats outside the existing protected areas, and consider appropriate measures to protect and/or manage these habitats.

All along, the Government has protected important habitats through legislation and administrative measures, to comprehensively and effectively conserve wildlife *in-situ*. The Government will also consider the potential to extend the current protected areas to cover other ecologically important habitats. While continuing to implement the MA and PPP schemes, the Government will adopt a flexible approach to consider innovative methods to enhance, support and promote the conservation of rural areas with high conservation value through harnessing the eff orts of the community.

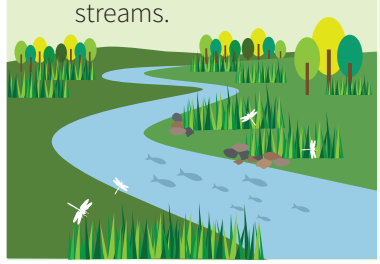
Specific Action	Description
2a Designate new marine parks in the waters near The Brothers, Soko Islands and Southwest Lantau. 	The statutory procedures for the designation of the waters near The Brothers as a marine park is expected to be completed by the end of 2016 or early 2017. In response to public concern about the conservation of Chinese White Dolphins, the Government will take forward the statutory procedures for the designation of waters at Soko Islands and Southwest Lantau as marine parks as a matter of priority.
2b Designate new country park at Robin's Nest, and extend country park to cover country park enclaves at appropriate locations.	The Government will commence the preparation for the designation of Robin's Nest as a new country park, including seeking views of other departments and stakeholders including the local villagers, before initiating statutory procedures under the **Country Parks Ordinance (Cap. 208)**. AFCD will give priority to assess the suitability of country park enclaves for incorporation into country parks and carry out the relevant statutory procedures for their designation.

Specific Action	Description
2c Develop a nature park at Long Valley for supporting conservation and agriculture in this ecologically important area.	A 37-hectare nature park will be established in Long Valley to mitigate the ecological impacts arising from the development of Kwu Tung North and Fanling North New Development Areas (KTN and FLN NDAs). The main objective for the management of the nature park will be to conserve and enhance the ecological value of this area. It will also provide an opportunity to conserve Hong Kong's traditional farming practices. The nature park will be developed by the Civil Engineering and Development Department as part of the KTN and FLN NDAs project, and managed by AFCD.
2d Continue to implement the MA and PPP schemes to actively conserve ecologically important sites under private ownership, including the 12 priority sites, country park enclaves and private land in country parks, through collaboration with NGOs and rural communities. 	In 2004, the Government identified 12 priority sites for enhanced conservation, and initiated the MA and PPP schemes to conserve these ecologically important sites. In 2011, the MA Scheme was extended to cover country park enclaves and private land in country parks (See Section 2.4 for more details). Through collaboration with the rural communities and NGOs, the MA projects have enhanced the ecological values of the sites concerned through habitat management, and have also raised public and community awareness on nature conservation at these sites. The Government will continue to support suitable projects through the MA scheme with funding support from ECF. The PPP scheme encourages the private sector and NGOs to join hands in nature conservation, and balances development and conservation. The Government is considering a number of PPP proposals and welcomes other applications.
2e Explore innovative methods to enhance, support and promote the conservation of rural areas with high ecological value.	Some of our rural areas, despite falling outside the priority sites or protected areas, remain relatively undisturbed and have high ecological value. The Government will explore innovative methods to harness the efforts of the community, and welcomes ideas and proposals from the public, to enhance, support and promote the conservation of these areas.

ACTION 3
Enhance conservation of natural streams

Protect and conserve natural streams and their riparian zones, and avoid pollution of streams.

There are over 2 500 km of natural streams in Hong Kong. Many of these natural streams support a variety of wildlife and provide important ecological functions, as well as carrying high aesthetic and landscape value. Construction works, effluent discharges, and regular maintenance could have adverse impacts on the natural streams and the associated wildlife. In balancing the need for drainage and flood prevention as well as biodiversity conservation, the Government has issued the "Guidelines on Environmental and Ecological Considerations for River Channel Design" to give due regard to minimising the impacts of drainage works on water courses. The Government will also explore measures to enhance conservation of natural streams and their riparian zones.

Specific Action	Description
3a Conduct ecological surveys and compile ecological database on natural streams, especially Ecologically Important Streams (EIS).	AFCD has been conducting ecological surveys at local streams and the Drainage Services Department (DSD) has been commissioning relevant studies on an ad hoc basis or as a part of EIA projects. AFCD will review the relevant surveys and data collected, and conduct surveys on biodiversity at selected natural streams. The results could facilitate the review of the list of EIS.
3b Improve practices in minor maintenance and hygiene works in natural streams and catchwaters, with a view to minimising ecological impacts arising from these works.	AFCD will discuss with relevant departments on the maintenance and hygiene works (e.g. desilting, weeding, removal of stones in streams, etc) carried out at watercourses, as well as the maintenance of catchwaters, that may affect biodiversity. Studies would be commissioned and guidelines for best practices would be formulated as necessary.
3c Control discharge of effluents from unsewered areas and its adverse impacts on streams. 	The Government will continue to implement regulations under the **Water Pollution Control Ordinance (Cap. 358)** to control pollution of streams. Specifically, this involves enhancing control over the use of sewage disposal systems for village houses near ecologically sensitive areas, and examining practicable solutions to reduce any adverse impacts caused by the effluents from these village houses. The Government will also assess the need and plan for the provision of appropriate sewerage system in priority areas identified with regard to the existing environmental condition, engineering feasibility and cost effectiveness of the system.

Monitoring the drainage improvement works at Upper Lam Tsuen River, Tai Po

ACTION 4
Maintain habitat connectivity for wildlife

Establish and maintain ecological corridors to promote habitat connectivity for wildlife.

Country parks in Hong Kong are relatively well connected. In the urban areas, the Government has also introduced initiatives to create corridors of water bodies and vegetation through "blue-green" infrastructure. The connectivity of habitats is important, as it not only facilitates wildlife movement, but also helps the local flora and fauna respond to the challenges of climate change. The Government will continue to maintain the protected area network and take opportunities to enhance the connectivity of our natural habitats.

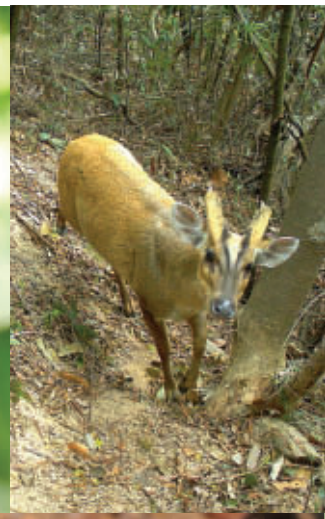
Specific Action	Description
4a Enhance habitat connectivity and establish ecological corridors across the boundary.	Hong Kong shares the water bodies of Deep Bay and Mirs Bay with Shenzhen. The Wutong Shan National Forest Park in Shenzhen also adjoins Robin's Nest to form a continuous stretch of forested habitat. Through our existing platform on cross-boundary collaboration, the Government will coordinate with Shenzhen counterparts on ecological protection measures to enhance habitat connectivity for wildlife in Robin's Nest/Wutong Shan and Deep Bay.
4b Review and update guidelines on design of wildlife crossings. 	AFCD will update the Nature Conservation Practice Note "Design of Terrestrial Wildlife Crossing System" to incorporate more practical guidelines on the design of wildlife crossings at transport infrastructures.

ACTION 5
Step up enforcement against wildlife crime

Enhance protection of threatened species through strengthening enforcement effort and coordination with the relevant departments.

Illegal harvest and trade has been identified as one of the key threats to the survival of threatened species. In particular, illegal poaching/collection of Incense Trees, as well as the smuggling and illegal trading of ivory, have raised significant public concern. Inter-departmental cooperation in enforcement against such illegal activities will be strengthened. In view of the grave concern in relation to the illegal poaching of elephants in Africa, the Government will strengthen control to increase deterrence against illicit wildlife trade as part of its contribution to global efforts in protecting threatened species.

Specific Action	Description
5a Maintain high vigilance and enhance enforcement against illegal poaching or collection of local species and raise public awareness. 	AFCD and the Hong Kong Police Force (HKPF) will enhance enforcement in combating the illegal poaching or collection of species (e.g. Incense Tree), through intelligence exchange, joint operations and raising the awareness and vigilance of the public about such offences. The strategy for surveillance will be reviewed and patrol at black spots and vulnerable sites will be stepped up. Stakeholders and local communities will be engaged in conducting strategic monitoring in black spots, with a view to deterring crime and taking remedial actions more effectively.
5b Establish an inter-departmental task force on wildlife crime, to strengthen collaboration and intelligence exchange.	Inter-departmental collaboration and intelligence exchange on illegal import/export, trade and harvesting/ hunting of species of conservation concern will be strengthened with a newly established inter-departmental task force on wildlife crime. The task force consists of members from the relevant bureau and departments including the Environment Bureau (ENB), AFCD, C&ED and HKPF.
5c Strengthen enforcement and legislative measures to combat illegal trade in ivory. 	The Government will phase out the local ivory trade with a three-step plan, and the penalties for smuggling and illegal trading of endangered species under the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586) will be reviewed to provide a stronger deterrent effect to illicit wildlife trade.








ACTION 6
Implement conservation action plans for priority species

Formulate and implement conservation measures and action plans, including both *in-situ* and *ex-situ* conservation, for species of conservation concern, in particular highly threatened and important species.

Discussions with academics and green groups held in the past few years shed light on the need to develop conservation action plans for priority species. Five species / taxa groups (i.e. Chinese Pangolin (*Manis pentadactyla*), selected freshwater turtles, Horseshoe Crab, corals and Incense Tree (*Aquilaria sinensis*)) have been identified as priority groups for which species action plans will be formulated in the first BSAP, based on their immediate threats, available data, and AFCD's assessment. In addition to species action plans, AFCD will continue to introduce conservation measures for other species that require protection. The species assessment to be conducted under Action 14 would also help identify more species or taxa groups that require conservation action plans, or other conservation measures.

Specific Action	Description
6a Establish a standardised mechanism for formulating species action plans.	The mechanism for formulating species action plans by AFCD will be standardised. Technical guidelines covering information such as the criteria for initiating the formulation of a plan, format, documentation, implementation, monitoring and review will be drawn up to guide the preparation of species action plans.
6b Formulate action plans for species that require immediate conservation actions. 	Five species / taxa groups (i.e. Chinese Pangolin, selected freshwater turtles, Horseshoe Crab, corals and Incense Tree) have been identified for the preparation of species action plans. AFCD will prepare the species action plans in consultation with relevant experts and NGOs. Meanwhile, additional studies will be conducted to collect information that is essential for the implementation of the plans. More priority species or taxa groups that require species action plans will continue to be identified in consultation with relevant experts in the medium term.
6c Review and strengthen existing species action plans.	For species with existing action plans, including Chinese White Dolphin, Romer's Tree Frog, Three-banded Box Turtle, Green Turtle and Black-faced Spoonbill, AFCD will review and update the plans in consultation with relevant stakeholders, in accordance with the standard mechanism to be established (see Specific Action 6a).

ACTION 7
Improve management of invasive alien species

Study the impacts of IAS in Hong Kong, and implement monitoring, management and control plans for the target IAS identified.

The threat of IAS is growing as a result of globalisation. Although control measures are currently in place for some IAS in Hong Kong, there is a need to strengthen our capacity to cope with the emerging threats and challenges. The Government will build an inventory of IAS and conduct preliminary risk assessments to prioritise management efforts. The Government will encourage research and studies to improve our knowledge of IAS in Hong Kong, and enhance existing efforts in the management and control of IAS.

Specific Action	Description
7a Build up capacity for the management of IAS.	AFCD, in collaboration with researchers, will build an inventory of IAS and conduct a preliminary risk assessment on the target IAS in Hong Kong. The Government will encourage research and studies to improve our knowledge of the introduction pathways of IAS and control measures, as well as to develop monitoring and warning systems for target IAS.
7b Enhance the monitoring, management and control plans for target IAS. 	The Government is concerned about the presence of IAS in Hong Kong, and has been taking active measures in controlling those that are posing impacts on the local ecology (e.g. *Sonneratia, Mikania,* Red-Imported Fire Ant) from further proliferation. With knowledge obtained from research and studies (see Specific Action 7a), the monitoring, management and control plans will be enhanced adaptively.
7c Conduct education programmes to raise awareness and to discourage release of alien species to the wild.	Release of animals, especially alien species, into the wild may not only affect the equilibrium of local ecosystems but may also be detrimental to animal welfare or may even spread diseases. AFCD will step up its public education and publicity efforts to raise awareness on the impacts of releasing alien species to the wild and promote animal welfare.

ACTION 8
Control the environmental release of genetically modified organisms

Monitor and control the environmental release of GMOs for managing the risks on local biodiversity.

Genetic diversity is an element of biodiversity as defined under CBD. However, there is considerable global concern that the increasing use of GMOs might affect local biodiversity. The Government will continue to safeguard the genetic diversity of local species through controlling the environmental release of GMOs, and keeping up with the development in the biotechnology and local market.

Specific Action	Description
8a Continue to control the environmental release of GMOs, monitor the development of related technology and expand screening programme.	AFCD will continue to control the environmental release of GMOs through administering the **Genetically Modified Organisms (Control of Release) Ordinance (Cap. 607)**. In view of the advances in biotechnology related to GMOs, AFCD will closely monitor the technological development and expand the screening programme for GMOs in the local market as necessary.

4.5 Area 2 – Mainstreaming biodiversity

Biodiversity mainstreaming refers to incorporating considerations for biodiversity conservation in sectoral plans, such as those of agriculture and fisheries, and cross-sectoral plans, such as sustainable development and climate change adaptation. In practice, it is about integrating conservation or sustainable use of biodiversity into existing or planned structures, processes and systems, rather than addressing the issue by creating parallel or artificial processes or systems.

Being a long-term and incremental process requiring sustained efforts on various fronts to identify suitable entry points and gain support from relevant stakeholders, mainstreaming biodiversity is one of the main focuses in the first BSAP of Hong Kong. Under this action area, we will continue to carry on our initiative kicked off in 2013 to mainstream biodiversity within the Government. Relevant bureaux and departments will continue to incorporate biodiversity considerations into their business according to the particular situations of Hong Kong. Pioneers from different sectors will also be encouraged to share experiences on the potential for sustainable operation in bringing environmental, social and economic gains.

ACTION 9
Incorporate biodiversity considerations in planning and development process

Continue to enhance the consideration and appraisal of strategic environmental and sustainability issues in major planning and sector studies to facilitate integration and coordination of biodiversity conservation.

The Government will continue to enhance the consideration and appraisal of strategic environmental and sustainability issues in major planning and sectoral studies. The concept of biodiversity will also be more explicitly reflected in the updating of our territorial development strategy (i.e. the "Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030", as well as in HKPSG.

Specific Action	Description
9a Update the Sustainability Assessment system, to better integrate biodiversity considerations in major policies and plans of the Government. 	All government bureaux and departments are required to assess, at the planning stages of new strategic initiatives or major programmes, the potential environmental, social and economic impacts through the Sustainability Assessment. The Government will update the biodiversity criteria in the Sustainability Assessment system, to better integrate biodiversity considerations in major policies and plans of the Government.
9b Integrate biodiversity considerations in the territorial development strategy.	Biodiversity considerations will be integrated in the territorial planning framework to be proposed in the "*Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030*" study, to support the long-term growth of Hong Kong in a sustainable manner.
9c Update and amend Chapter 10 of HKPSG by incorporating relevant guidelines on biodiversity considerations.	Chapter 10 of HKPSG provides principles and guidelines on the conservation of natural landscapes and habitats, and has been made reference to by planning and development professionals as well as the public. The chapter will be amended to provide guidance to relevant stakeholders to assist them in incorporating biodiversity considerations into their planning and development proposals.
9d Enhance the practices in addressing ecological impacts of projects through EIA process.	In Hong Kong, the EIA provides an important tool for addressing the impacts of development on wildlife and ecosystem. In view of the growing complexity of ecological assessments, the Government will take opportunities to enhance the practices, by facilitating sharing of experience and knowledge among practitioners, as well as developing and updating guidelines and practice notes.

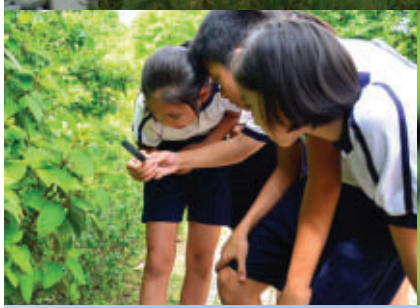
ACTION 10
Promote biodiversity in urban environment

Promote biodiversity in our urban landscapes, through increasing diversity of complementary species for works projects, and promoting appreciation for the socio-economic benefits that biodiversity generates in healthy urban ecosystems.

Enrichment of biodiversity in our urban environment, through diversifying landscapes and vegetation used in landscape planting, will improve the soil condition, plant health and immunity to pests and diseases in our urban forests, and reduce the maintenance efforts. At a broader scale, the stratification of vegetation will reduce the UHI effect, captures more dust and pollutants, and improves the liveability of the surrounding places. Relevant policies will be in place to drive the incentives for different departments to adopt such an approach in landscape-related projects.

Specific Action	Description
10a Formulate an urban forestry strategy that contributes to a sustainable urban landscape, and promote the appreciation of urban biodiversity.	Greening, Landscape and Tree Management Section (GLTMS) of the Development Bureau will formulate an urban forestry strategy to drive the incentives for departments to explore opportunities for maximising the provision of diverse landscape during the planning, design and implementation stages of all landscape-related projects.
10b Promote diversification of soft landscapes and optimise use of native species for enriching urban biodiversity. 	Through policy development and outreach, GLTMS will promote maximising the complexity and diversity in the complementary species mix for landscape planting[11], and optimising the use of native species in replacement planting programmes. The Acacia replacement programme has been progressively undertaken by various relevant departments, in which senescent Acacia has been gradually replaced by native species.
10c Promote the concept of Place Ecology in urban landscape designs. 	GLTMS will promote the concept of Place Ecology[12] in urban landscape design with a view to contributing to sustainability. Examples of such features include water sensitive urban design, "blue-green" infrastructure networks, ecological linkages, diversified elevated landscapes and urban farming.











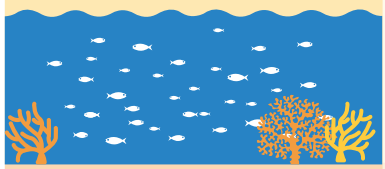
Specific Action	Description
10d Promote knowledge building and sharing among the public and private sectors in the latest landscape concepts, designs and technologies that contribute to a sustainable urban ecosystem.	Relevant government bureaux and departments will promote the building and sharing of knowledge among themselves and the private sectors on the latest landscape concepts, designs and technologies that contribute to a sustainable urban ecosystem, and explore collaborative opportunities to fill knowledge gaps and provide multi-disciplinary input into developing ecologically friendly landscape design guidance and tools.
10e Explore opportunities to enhance the value of urban parks for biodiversity conservation and education.	The Government will explore the opportunities of habitat enrichment in urban parks, such as through the planting of native species and increasing habitat diversity. Programmes will be developed to encourage the interaction between people and the nature, and to raise awareness on biodiversity.
10f Adopt the concept of revitalising water bodies in large-scale drainage improvement works and planning drainage networks for New Development Areas (NDAs).	DSD is conducting a consultancy study on revitalisation of water bodies. The objective is to explore practicable options for applying the concept of revitalising water bodies to nullahs and river channels when carrying out large-scale drainage improvement works and drainage planning for NDAs, with an aim to promoting greening, biodiversity, beautification and water friendliness while achieving efficient drainage.

With greater public appreciation of the benefits of urban biodiversity as demonstrated in public works projects through the Government's advocacy efforts, consideration would be given to developing corresponding requirements and advisory best practices for voluntary adoption in private developments at the project design stage.

ACTION 11
Promote sustainable fisheries

Designate Fisheries Protection Areas(s) (FPA) to protect important fish spawning and nursery grounds, as well as continue existing measures for sustainable management of fisheries resources.

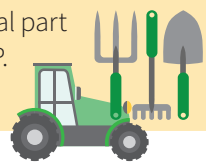
The Government has been taking measures to facilitate the development of sustainable fisheries in recent years. AFCD will continue to take enforcement the measures to prohibit trawling and other illegal fishing activities, and monitor the changing state of fisheries resources in Hong Kong waters. The Government is also planning to designate FPA(s) to protect important spawning and nursery grounds in Hong Kong, and is preparing for the designation work by collecting updated information on fisheries resources and fishing operations in the potential FPA(s). In addition, funding support has been provided by the Sustainable Fisheries Development Fund (SFDF) to promote the adoption and development of sustainable fisheries operations among the local fishing community.

Specific Action	Description
11a Designate and manage FPA(s) to protect important fish spawning and nursery grounds. 	FPA(s) will be designated under the **Fisheries Protection Ordinance (Cap. 171)** to protect important spawning and nursery grounds, thereby helping to restore local fisheries resources, and promote their sustainable growth in the long run. AFCD is conducting surveys to collect updated information on fisheries resources and fishing operations in potential FPA(s). The Government will engage relevant stakeholders in the discussion on the designation of FPA(s) and the fisheries management measures to be formulated.
11b Continue to conduct fisheries monitoring programme in Hong Kong waters.	AFCD will continue an on-going fisheries monitoring programme to assess fisheries resources and the effectiveness of fisheries management measures in Hong Kong waters.
11c Provide funding support to encourage local fishing community to adopt sustainable fisheries operations.	The Government has set up the $500 million SFDF to help fishermen adopt a sustainable and high-value operation mode, and to provide financial support for research and programmes that will help enhance the overall competiveness of the industry, and projects related to fisheries resources monitoring and enhancement.
11d Conduct study on measures to prevent cormorant predation on commercial pond fish in Deep Bay area.	AFCD will commission a study to address the concerns of aquaculture operators in the Inner Deep Bay area regarding cormorant predation on commercial fish at their ponds. This study will include reviewing the effectiveness of bird prevention measures.

ACTION 12
Promote sustainable agriculture

Promote sustainable agriculture in Hong Kong through encouraging environmentally and biodiversity friendly agricultural practices.

The Government has been providing support to the local agriculture sector to apply modern and environmentally friendly farming technologies. In early 2016, the Government announced the implementation of the New Agriculture Policy (NAP) to promote the modernisation and sustainable development of local agriculture. It is envisaged that the NAP could enhance the productivity of local farms and encourage the rehabilitation of fallow agricultural land. Better utilisation of farmland in rural areas could in turn contribute to the conservation of biodiversity.

Specific Action	Description
12a Promote the modernisation and sustainable development of local agriculture as an integral part of NAP. 	AFCD will implement various measures under NAP, which include the establishment of an agricultural park, commissioning study on Agricultural Priority Areas, setting up a $500 million Sustainable Agricultural Development Fund (SADF), assisting farmers in improving productivity through modern agro-technologies and environmentally friendly farming practices (including organic farming), as well as promoting leisure farming as an ancillary measure.

4.6 Area 3 – Improving our knowledge

Knowledge is critical to good decision-making. It ensures that right decisions are made at the right time, and resources are used effectively to bring about desired outcomes. More specifically, surveys will shed light on patterns and trends; studies will probe correlations and reveal causes and effects; evidence and logical arguments will help effective communication and inform the community of appropriate actions.

Recognising that filling in knowledge gaps, for example through assessments or scientific research, is an essential but time-consuming step underlying the achievements of other biodiversity conservation actions, we take on improving knowledge as one of the focus action areas in the first BSAP of Hong Kong. This area covers initiatives from generating information and consolidating existing data, to collaborating with partners and establishing an information-sharing platform. In addition to leading and commissioning studies on priority issues, the Government will also support projects through relevant funding sources.

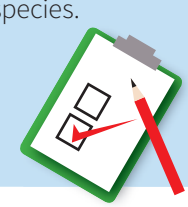
Conducting ecological surveys in biodiversity hotspots

ACTION 13
Conduct biodiversity surveys

Conduct long-term territory-wide biodiversity surveys and monitoring.

Biodiversity surveys collect basic information about species, such as their abundance within a locality or their distribution over the territory. Survey data, when accumulated in the long-term, can be used to create range maps, inform threat assessments, and help predict distribution shifts due to changing conditions. Such knowledge will provide evidence for decision-making or further research. Given the fundamental importance of long-term monitoring, AFCD will continue to enhance the territory-wide biodiversity surveys for terrestrial and freshwater species, and strengthen the monitoring of marine biodiversity, in collaboration with relevant experts and interested parties.

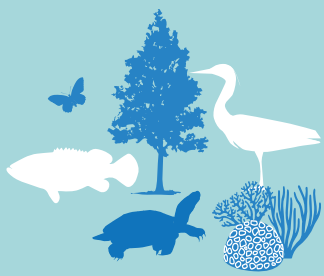
Specific Action	Description
13a Enhance territory-wide biodiversity surveys on major groups of terrestrial and freshwater species.	AFCD has been conducting territory-wide biodiversity surveys on major taxa groups of terrestrial and freshwater species since 2002. While continuing the survey programme, AFCD will review the methodology, scope and coverage of the survey programme, and enhance the coverage of sites and taxonomic groups on which data are scarce.
13b Conduct baseline and long-term surveys of priority marine habitats and species.	AFCD has been conducting monitoring of marine mammals and coral communities. Surveys on other marine habitats and species are also being carried out by local institutions and organisations. In view of the knowledge gaps identified, AFCD will initiate baseline surveys and extend the long-term monitoring to cover other priority marine habitats and species, in collaboration with tertiary institutions and professional bodies.

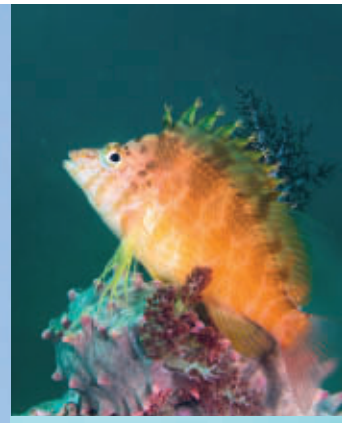


ACTION 14
Conduct species assessment

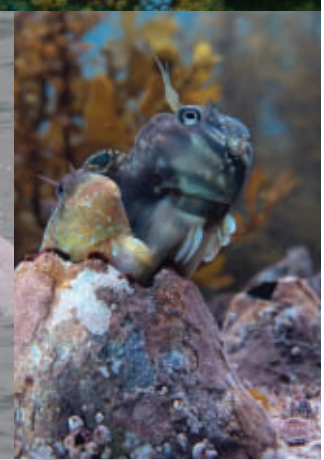
Assess the conservation status of species in Hong Kong to guide conservation actions.

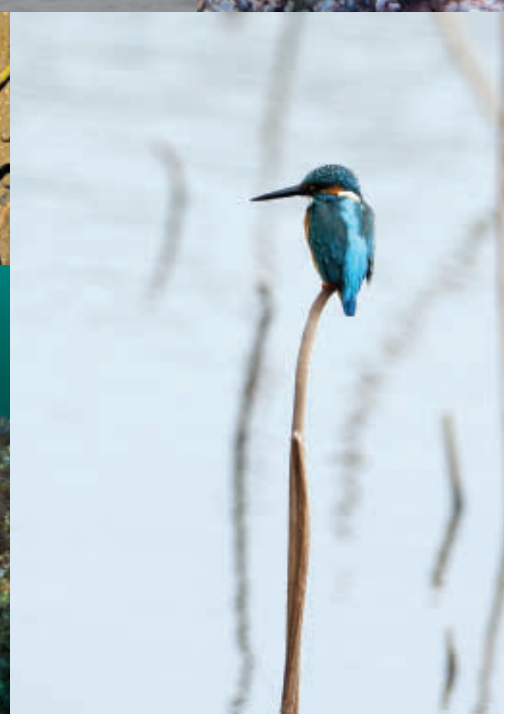
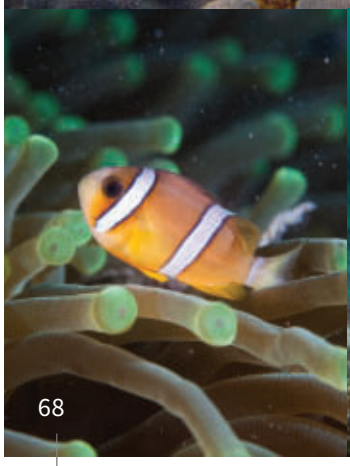
Assessing the distribution and population status and trends, as well as the threats faced by species, by following a rigorous scientific approach would provide clear evidence on their conservation status. While the task is expected to be technically complex, it will generate knowledge essential to decision-making and improving the management of biodiversity. The Government will work together with experts to assess local species based on established criteria and best available data with a view to compiling a list of threatened species for Hong Kong.

Specific Action	Description
14a Compile a list of threatened species for Hong Kong to guide conservation actions. 	The Government will work together with experts to assess the conservation status of local species. The assessment will make reference to the best global practices which emphasise clear documentation of scientific evidence and rigorous assessment criteria. The results of assessment will be independently reviewed. AFCD will coordinate the compilation of the list and oversee the assessment exercise. In view of the large number of species occurring in Hong Kong, it will not be possible to cover all taxa groups in the first BSAP. The priority of assessment will be determined based on a set of criteria, including the availability of data and expertise.




ACTION 15
Collate information on terrestrial and marine habitats

Collate information on terrestrial and marine habitats, to identify ecologically important habitats, assist monitoring of status and trends, and guide conservation actions.

Hong Kong has a long-standing research community focusing on marine environmental science, which has generated invaluable knowledge on marine habitats and species, and probed into many of the interactions between these species and ecosystems. Many NGOs have also carried out surveys and studies on marine habitats and species. Yet such information and knowledge are scattered among various documents or databases such as scientific publications, consultancy study reports, Geographic Information System (GIS) databases established by government departments and NGOs, etc. The Government will collaborate with stakeholders to collate existing information and knowledge relevant to marine biodiversity for guiding conservation actions.

A habitat map based on standardised classification of habitat types allows rapid assessment of habitats within an area. The most recent exercise to map habitats in Hong Kong was conducted in 2008, based on the habitat classification system formulated in 1998[13]. The Government will initiate a study to provide up-to-date information on habitats to support conservation planning.

Specific Action		Description
15a	Compile relevant information on marine habitats to guide conservation of marine habitats.	To ensure that our future marine conservation initiatives are appropriately and effectively applied, it is important to consider and tap into existing information in particular science-based evidence. Relevant information, including the recent assessment of marine biodiversity hotspots conducted by NGOs and academics, will be compiled to facilitate consideration of conservation actions related to marine habitats.
15b	Review and develop a standardised classification of habitat types in Hong Kong, and prepare a GIS-based habitat map.	The Government will initiate review on classification of habitat types and update the territorial habitat map using remote sensing techniques with assistance from consultants or research institutions. This information will facilitate further work on assessing changes in natural habitats.

ACTION 16
Improve sharing of knowledge

Improve the sharing of knowledge of biodiversity, by developing a web-based information hub and a centralised database.

While collection of data is the basis of enhancing understanding of biodiversity, synthesising information into knowledge applicable to solving problems is the critical linkage between enhancing understanding and making wise choices. A biodiversity information hub will be developed for collecting and disseminating updated information, so as to enhance stakeholders' ability in understanding and communicating biodiversity, as well as improve sharing of information.

Specific Action	Description
16a Develop a web-based information hub to provide a one-stop shop for information on local biodiversity. 	AFCD will consolidate publications and other relevant materials and develop a web-based biodiversity information hub, in collaboration with external organisations. The hub will contain information on local habitats and species, and reference materials for school and public education such as multimedia toolkits and visual aids to assist teaching. They will be appropriately catalogued to facilitate usage.
16b Develop a GIS-based platform to facilitate sharing of data among different groups of users. 	AFCD will consolidate available but scattered data on biodiversity, and establish protocol for a GIS-based data-sharing platform that facilitates the sharing of data by different groups of users, which may include government officers, researchers, consultants, amateur naturalists and the general public. The platform will be developed with the assistance of external organisations. Given the complexity of the system and the amount of data involved, the project is expected to continue beyond the term of the first BSAP.

ACTION 17
Identify essential ecosystem services

Identify services provided by our ecosystems, with a view to safeguarding and restoring important ecosystems to ensure the provision of these services.

Accounting for the benefits that nature provides to our society would inform better planning and decision making. However, there is currently little information on the status and trends of local ecosystems and the ecosystem services they deliver. AFCD will commission a baseline study, based on widely recognised approaches, for example, the frameworks put forward by the Millennium Ecosystem Assessment[14] and The Economics of Ecosystems and Biodiversity[15], to assess the ecosystem services provided by major habitat types in Hong Kong, with a view to acquiring information on conservation or restoration of important ecosystems, and maintain the essential services they deliver.

Specific Action	Description
17a Commission a study on the ecosystem services provided by major habitat types in Hong Kong. 	It is noted that research on ecosystem services in Hong Kong is scarce. To fill the information gap, AFCD will commission a consultancy study on ecosystem services provided by the major habitat types in Hong Kong, including wetlands, forests, marine/coastal habitats and urban parks. This would provide the baseline information to facilitate further studies, such as environmental valuation, and help to mainstream biodiversity consideration into the planning and decision-making process.

High Island Geo-area, Hong Kong UNESCO Global Geopark

ACTION 18
Enhance understanding of traditional knowledge

Study, take stock and consider the adaptive use of traditional knowledge relevant to conservation and sustainable use of the biodiversity in Hong Kong, through engaging the local communities

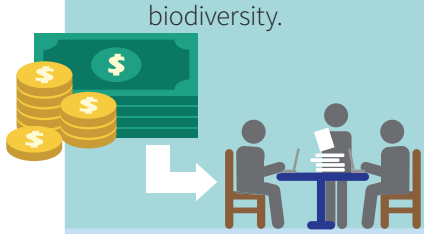
Our ancestors often hold the knowledge of managing the surrounding natural environment in a sustainable way to improve their daily lives and crop production while keeping the environment healthy. Such traditional practices on human-nature interactions are accumulated over time and have been continuously refined. In pursuing biodiversity conservation and sustainable development, it would be worthwhile to dig into the treasure trove of traditional knowledge, as well as to engage local communities, in seeking sustainable ways of managing habitats for improving livelihood and conserving biodiversity.

Specific Action		Description
18a	Encourage research on traditional knowledge relevant to conservation and sustainable use of biodiversity.	The Government will encourage research on traditional knowledge relevant to conservation and sustainable use of biodiversity, through provision of funding support (see Action 19). The sharing of traditional knowledge will also be facilitated through the biodiversity information hub to be established (see Specific Action 16a).
18b	Encourage the wise use of natural resources using traditional knowledge, especially through the MA scheme.	The wise use of natural resources using traditional knowledge will be encouraged. Specifically, NGOs will be encouraged to explore the integration of appropriate traditional community collaborative models in the MA scheme, to enhance the conservation of ecologically important sites in rural areas (see Specific Action 2d).

ACTION 19
Provide funding support to research and studies

Provide and coordinate financial support to research and studies for advancing our knowledge in priority areas.

Strengthening our knowledge on native flora and fauna and filling in important information gaps on biodiversity are some of the key emphases under the first BSAP. In consultation with relevant experts, AFCD will identify priority research topics that would directly and significantly contribute to the conservation of biodiversity, and collaborate with researchers in carrying out studies. The research will be supported through various sources of funding from the Government.

Specific Action	Description
19a Conduct studies that would directly and significantly contribute to the conservation of biodiversity. 	In collaboration with local tertiary institutions and researchers, AFCD will commission studies that would directly and significantly contribute to the conservation of biodiversity. The selection of priority studies will be determined in consultation with relevant experts. These studies would strengthen our knowledge on key elements of terrestrial and marine biodiversity, including but not limited to: genetic studies on threatened species, ecosystem functions, IAS, climate change, effectiveness of conservation measures.
19b Encourage research to fill key information gaps on local biodiversity, through funding support by the ECF.	ECF has increased the funding budget for Environmental Research, Technology Demonstration and Conference Projects from $20 million in 2015-16 to $30 million in 2016-17 with an aim to making available more funding to support projects that would contribute to the Government's policy initiatives including biodiversity, which is one of the priority research themes.
19c Support research on sustainable agriculture and fisheries practices and management.	The Government will support research on sustainable agriculture and fisheries practices, through the SFDF and SADF (see Specific Actions 11c and 12a).

4.7 Area 4 – Promoting community involvement

While knowledge informs action, it is awareness and appreciation of biodiversity that generates the will to conserve it. Connecting people with nature and encouraging their involvement in conserving and sustainably using biodiversity are therefore important focuses in our first BSAP. As creating and fostering a biodiversity-friendly momentum in the community requires sustained effort, we expect that this will be a long-term and collaborative process.

The Government will work with sectoral partners, tertiary institutes and NGOs to deliver activities that emphasise experiential learning and direct participation in conservation work, to instil a sense of stewardship of biodiversity among participants. Meanwhile, the Government will continue to support incorporating the concept of biodiversity into school education, so that our future generations will have the will and knowledge to carry on our conservation efforts.

Guided tree walk at Kowloon Park

ACTION 20
Promote biodiversity awareness

Promote the awareness of biodiversity, in particular through partnering with the wider NGO community, business and other sectors.

Enriching people's understanding of biodiversity is a pre-requisite for engaging them in conservation actions. In order to engage more people of different backgrounds and interests in actions for conservation, we would need to tailor messages to suit the needs of specific sectors and target groups, highlight the relevance of biodiversity to our daily lives, and demonstrate how everyone can contribute to biodiversity in his/her respective capacities and businesses. AFCD will build on the existing network of community partners in promoting biodiversity to the public, and expand the partnership throughout the term of the first BSAP.

Specific Action		Description
20a	Review and enhance education activities that promote biodiversity, being conducted by AFCD.	AFCD provides education activities such as volunteering programmes, workshops, guided tours, lectures, contests and other thematic events in country parks, marine parks and HKWP. These programmes will be reviewed in phases to strengthen and update their content. These exercises could also help AFCD identify potential new partners to be engaged in promoting biodiversity conservation. AFCD will also review the function of existing visitor centres to enhance the promotion of nature appreciation and awareness on biodiversity.
20b	Promote awareness and community involvement through citizen science monitoring programmes. 	A citizen science programme is a way of directly involving citizens in conserving local biodiversity. It generally entails training amateurs to assist with data collection for projects supporting the protection of the environment. The annual Reef Check coordinated by AFCD and the Reef Check Foundation is an example of such programmes. AFCD will explore collaborations with NGOs or academic institutions to engage stakeholders from different backgrounds, and extend the coverage to other species.
20c	Organise annual festivals to provide a platform for engaging partners and relevant stakeholders in promoting biodiversity to the public.	The Government organised the Hong Kong Biodiversity Festival in 2015 in partnership with 20 organisations, providing activities and events to the general public under the theme "Cherishing Nature". Building on this network of partners, annual biodiversity festivals will be organised under appropriate themes to enhance knowledge and encourage buy-in from the general public and different stakeholders.

Specific Action	Description
20d Conduct a survey on knowledge and attitudes towards biodiversity in Hong Kong. 	Systematic information on the attitude and the level of knowledge of the general public and stakeholder groups is essential for evaluating the success of education programmes and prioritising future engagement efforts. As little baseline information is available, AFCD will survey the attitude and knowledge of different stakeholders towards the local biodiversity.
20e Encourage partnership between Government and business sector in biodiversity conservation. 	The business sector is one of the key stakeholders of biodiversity conservation, as many businesses have interface with biodiversity resources. AFCD will collaborate with relevant business organisations and chambers of commerce to mainstream biodiversity conservation into the business sector. Seminars and liaison meetings will be organised to facilitate exchange of views.
20f Encourage programmes to promote biodiversity education and community involvement, through funding support by ECF.	The Government will support and encourage local non-profit making organisations to organise programmes that promote biodiversity education and community involvement through ECF, which has earmarked an additional $5 million in 2016-17 for funding Biodiversity Education and Community Involvement Projects as part of the Environmental Education & Community Action Projects.





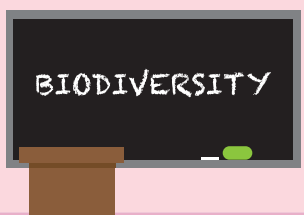





ACTION 21
Promote biodiversity in education

Incorporate the concept of biodiversity into the school curriculum and provide capacity building for teachers on biodiversity.

Engaging our children in appreciating the beauty and importance of nature is essential for sustaining our conservation efforts. While biodiversity is included in the curriculum of General Studies in primary schools, and those of Geography, Science (S1-3), Biology, Combined Science and Integrated Science in secondary schools, the Government would explore suitable means to continuously incorporate the concept of biodiversity into the primary and secondary school curricula, as well as enhance existing resources on nature conservation education for kindergartens. The Government will also enhance capacity building on nature education for teachers, in particular by facilitating experiential learning, guided field trips and volunteer work in outdoor settings.

Specific Action	Description
21a Incorporate the concept of biodiversity in the school curriculum. 	AFCD will work with the Education Bureau (EDB) to continuously incorporate relevant concepts into the school curriculum at appropriate levels, with equal importance accorded to knowledge, skills, values and attitudes. The objective is to enable students to acquire a basic understanding of biodiversity, develop the knowledge and skills for identifying and solving environmental problems, and motivate them to contribute to conservation of biodiversity.
21b Engage NGOs to provide capacity building for teachers on biodiversity.	AFCD and many NGOs and institutions have produced a variety of teaching resources to support teachers in conducting outdoor field sessions on nature appreciation. AFCD will work with EDB to facilitate identifying resources for learning and teaching of biodiversity in relevant subjects, and to engage NGOs in organising related professional development programmes for teachers.
21c Enhance the resources for early childhood education on nature conservation. 	HKWP and Lions Nature Education Centre (LNEC) accommodate school visits and provide programmes on outdoor nature education. AFCD will work with EDB and academics to enhance the existing resources at these venues to facilitate kindergarten students to explore the nature through modification of facilities and refinement of education programmes with more play and interactive elements.

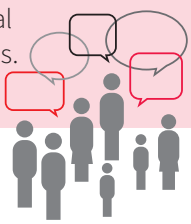
Tung Ping Chau Geo-area,
Hong Kong UNESCO Global Geopark

ACTION 22
Promote sustainable consumption

Promote the sustainable consumption of biological resources.

Similar to other service-oriented cities in the world, Hong Kong relies heavily on import of food and goods. The over-consumption of biological resources in our daily lives could have important implications for sustainability. However, the society in general has insufficient awareness and knowledge on sustainable consumption. As many stakeholders are involved in the supply and consumption chain, their buy-in would be crucial to encourage sustainable consumption. In view of the above, SDC has launched a public engagement exercise on promotion of sustainable consumption of biological resources in July 2016. This will provide a bottom-up, stakeholder-led platform to raise public awareness as well as to solicit views from the community to promote the sustainable consumption of biological resources.

Specific Action		Description
22a	Conduct public engagement and explore relevant measures on promotion of sustainable consumption of biological resources.	SDC has recently launched a public engagement to raise public awareness and explore initiatives in conjunction with key stakeholders for promoting the sustainable consumption of biological resources. Through a bottom-up and stakeholder-led approach, SDC will collect views from the public and stakeholders from relevant sectors, and put up recommendations to the Government for consideration.



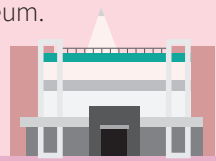
ACTION 23
Enhance facilities for biodiversity education and research

Enhance facilities that provide resources to support scientific research, citizen science and public education relating to biodiversity.

Local plant and animal specimens are currently collected and curated by various parties for different purposes. The Hong Kong Herbarium has the most comprehensive collection of plant specimen collected in Hong Kong and southern China, and provides identification and advisory services; the Hong Kong Museum of History has a natural history collection consisting of rock and animal specimens mainly for exhibition and education purposes. Local tertiary institutions also hold some specimens, for example the Swire Institute of Marine Science of the University of Hong Kong holds specimens of marine species, whereas the Shiu-Ying Hu Herbarium of the Chinese University of Hong Kong has a collection of about 38 000 plant specimens. Exhibitions and education programmes on biodiversity are currently being conducted in the Woodside Biodiversity Education Centre, HKWP, as well as the visitor centres of country parks and marine parks.

Students studying how water quality affects wildlife in the laboratory of Hong Kong Wetland Park

In many countries and cities[16], comprehensive plant and animal specimen collections are housed for documenting the natural history of the locality, facilitating scientific research in widely-implicated realms such as public health and climate change, and curated in a way to support education and promote science. There is room to explore combining specimen collection with research and public education, to support science innovation and better engage people in understanding and appreciating the natural heritage of Hong Kong.

Specific Action	Description
23a Open and maintain a permanent exhibition on biodiversity in the Hong Kong Science Museum. 	Positioned as an education centre for promoting science and technology in Hong Kong, the Hong Kong Science Museum opened a new permanent exhibition gallery on biodiversity in September 2016. The gallery highlights four distinctive zones featuring local species, species around the world, the evolution of species and a laboratory area, through which the multiple aspects of biodiversity, from genes to ecosystems, are introduced.
23b Support the establishment of biodiversity centres.	AFCD will explore opportunities to collaborate with local institutions to establish biodiversity centres to disseminate scientific information, as well as facilitating citizen science initiatives for the wider community.
23c Explore the opportunity for setting up a natural history museum in the long term. 	While there are currently a number of facilities storing specimens and/or providing resources related to biodiversity, many stakeholders have emphasised the synergic effect of establishing a natural history museum in Hong Kong as a base for archive, education and research. In view of the complexity of consolidating resources scattered in existing facilities, and the substantial capital and recurrent resources required, this initiative would be explored in the long term, when opportunity arises.

Footnotes

7. The Indo-Burma Hotspot covers more than 2 million square kilometres of tropical Asia, and is one of the 34 global biodiversity hotspots identified in Mittermeier et al (2004) *Hotspots Revisited: Earth's Biologically Richest and Most Endangered Ecoregions*. CEMEX, Mexico.

8. The East Asian-Australasian Flyway is one of the nine major bird migration route recognised globally.

9. The Tenth Meeting of the Conference of the Parties (COP10) adopted the Strategic Plan for Biodiversity 2011-2020 (the Strategic Plan), with the aim of inspiring broad-based actions in support of biodiversity over the next decade by all countries and stakeholders. The Strategic Plan comprises five strategic goals and 20 headline targets, known as the Aichi Biodiversity Targets. These goals and targets consist of aspirations for achievement at the global level, and they also serve as a flexible framework for Parties to set their own targets, taking into account local needs and priorities, while also bearing in mind their contributions to the achievement of global targets. Not all countries need to develop a national target for each and every global target. For some countries, the global threshold set through certain targets may have already been achieved. Other targets may not be relevant in the country context.

10. Under the CBD, it is up to the Party to the CBD to consider as appropriate the development and implementation of subnational and local biodiversity strategies and action plans in support of national strategies and action plans.

11. Complementary species mix refers to the mix of plant species across trees, shrubs and herbaceous species that are complementary to each other and are planted within the same square metre of soil or substrate.

12. Currently defined as the relations and interactions between places through a holistic integration of social, technological, environmental, economics and design of external landscapes that contribute to the overall place identity and sustainability of our urban environment.

13. The most recent exercise to map habitats was conducted under the "2008 Update of Terrestrial Habitat Mapping and Ranking Based on Conservation Value" in 2008. The habitat classification system was formulated in 1998 under the "Supplementary Agreement to the Study of Sustainable Development 21st Century (SUSDEV 21)".

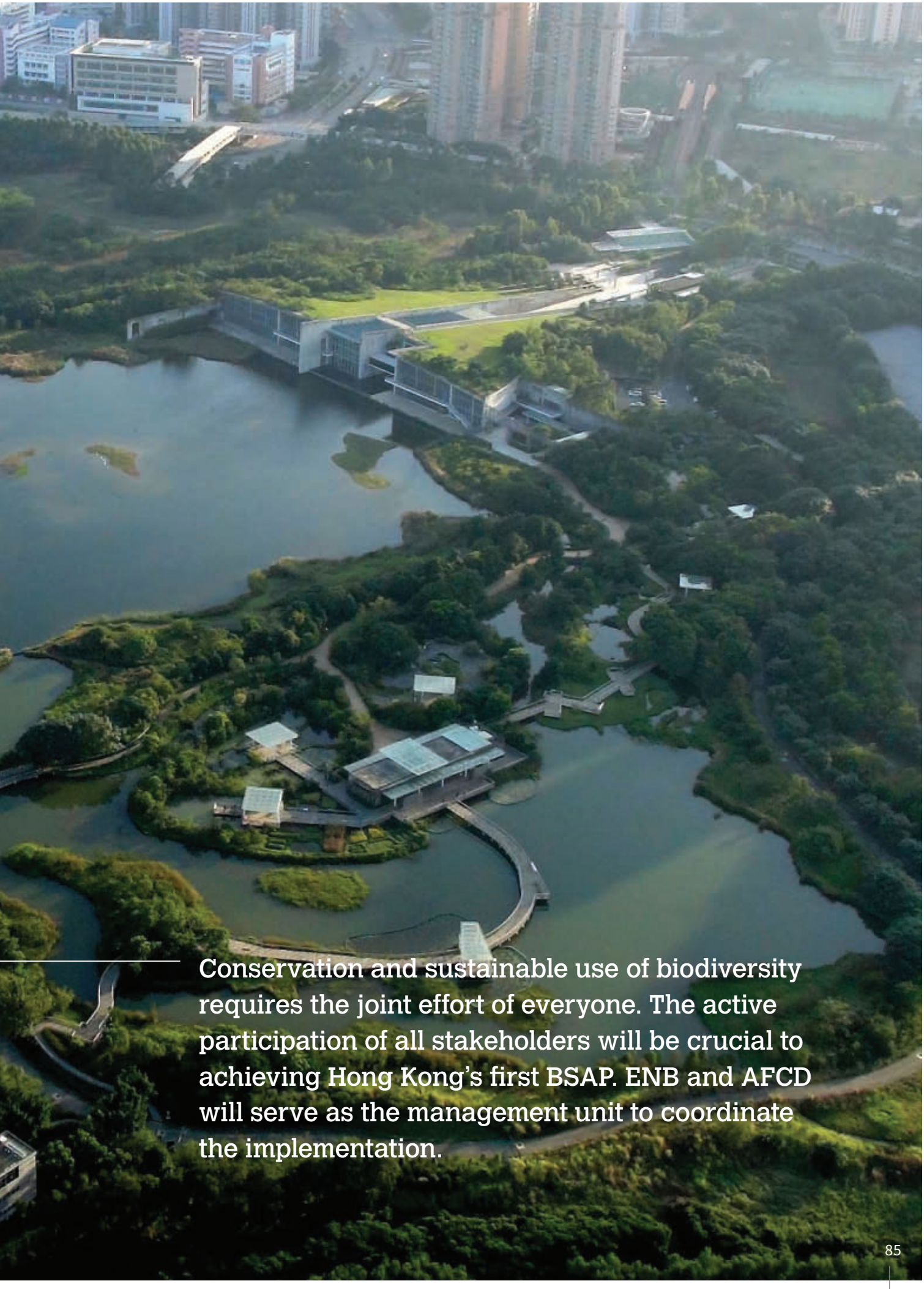
14. Millennium Ecosystem Assessment, 2005. Ecosystems and Human Well-being: Biodiversity Synthesis. World Resources Institute, Washington, DC.

15. The Economics of Ecosystems and Biodiversity: Ecological and Economic Foundations. Available from http://www.teebweb.org.

16. Relevant recent examples include: Darwin Centre in the Natural History Museum, London; Lee Kong Chian Natural History Museum in the National University of Singapore, Singapore; Shanghai Natural History Museum, Shanghai.

5 Implementation

Hong Kong Wetland Park



Conservation and sustainable use of biodiversity requires the joint effort of everyone. The active participation of all stakeholders will be crucial to achieving Hong Kong's first BSAP. ENB and AFCD will serve as the management unit to coordinate the implementation.

5. Implementation

5.1 Funding support

The Government has earmarked additional resources of $150 million for three years (i.e. from 2016/17 to 2018/19), for taking forward the relevant initiatives under BSAP, in particular to new or enhanced measures to be introduced. In addition, government bureaux and departments will continue to implement relevant measures under their respective purview which are conducive to biodiversity conservation, using existing resources. We will also harness the support of external funding sources in supporting priority projects, particularly research and education projects under Areas 3 and 4 (Sections 4.6 and 4.7).

5.2 Parties responsible for implementation and coordination

Conservation and sustainable use of biodiversity requires the joint effort of everyone. The active participation of all stakeholders will be crucial to achieving Hong Kong's first BSAP. ENB and AFCD will serve as the management unit to coordinate the implementation. A dedicated team will be established in AFCD to monitor the progress of its implementation by various parties, as well as coordinating returns and funding resources allocated by the Government for the implementation of Hong Kong's first BSAP. ENB and AFCD would take the lead to update the first BSAP by the end of 2021 taking into account contemporary conditions and the resources available.

Within the Government, an inter-departmental Working Group will be established to coordinate the implementation of the BSAP. The working group will be chaired by the Secretary for the Environment. Membership would include representatives from ENB, AFCD and other relevant bureaux and departments. *Ad hoc* expert or technical support group(s) would also be set up for providing professional or technical advice on specific matters as and when necessary.

5.3 Advisory body

The Nature Conservation Sub-committee under the Advisory Council for the Environment will be responsible for advising on matters related to the implementation of BSAP. These could include setting priorities for implementation, reviewing effectiveness of programmes, as well as advising on technical aspects related to the implementation of specific actions.

5.4 Monitoring, reporting and evaluation

The BSAP will be monitored and reviewed regularly as a part of an adaptive management process. Monitoring is necessary to evaluate the progress and the effectiveness of the action plan. It tells whether the deliverables are aligned with the vision and mission, and whether the efforts and resources invested are delivering the desired results. The process will also provide valuable feedback into future updating of the BSAP.

The dedicated team to be established in AFCD will be responsible for compiling the progress of implementation of specific actions listed under each Action (as summarised in Annex 1) and reporting to the inter-departmental working group (Paragraph 5.2) on a regular basis. The inter-departmental working group will monitor and evaluate the implementation of the BSAP, and recommend any necessary adaptation or change to the actions and specific actions under this BSAP in view of the situation of Hong Kong.

In addition to reviewing the progress of specific actions listed under each Action, parameters for monitoring the trend of local biodiversity, and for checking the effectiveness of the action plan will be derived. These parameters will be reasonably simple so that the public can follow the progress of implementation.

Annex 1 – List of Actions and Specific Actions

AREA 1 – ENHANCING CONSERVATION MEASURES

Action	Specific Action	Lead responsibility[a]	Support[a]	Timeframe[b]
1 Maintain and enhance the management of protected areas	a) Prepare and implement biodiversity management plans, outlining the approach to biodiversity conservation in country parks, special areas, marine parks and marine reserve.	AFCD		Medium to long term
	b) Carry out the Plantation Enhancement Project to enhance the biodiversity of plantations in country parks.	AFCD	NGOs	Ongoing
	c) Review the management plan for Sites of Special Scientific Interest to enhance the conservation and monitoring work carried out.	AFCD		Short term
	d) Review the Mai Po Inner Deep Bay Ramsar Site Management Plan.	AFCD	NGOs	Medium term
	e) Enhance habitat management work in the Mai Po Nature Reserve.	AFCD	WWF-Hong Kong	Ongoing
	f) Review and enhance the ecological monitoring and habitat management plan of the Hong Kong Wetland Park.	AFCD		Short term
2 Conserve ecologically important habitats outside the existing protected areas	a) Designate new marine parks in the waters near The Brothers, Soko Islands and Southwest Lantau.	ENB, AFCD		Short term
	b) Designate new country park at Robin's Nest, and extend country park to cover country park enclaves at appropriate locations.	ENB, AFCD		Medium to long term
	c) Develop a nature park at Long Valley for supporting conservation and agriculture in this ecologically important area.	CEDD	AFCD	Medium term
	d) Continue to implement the Management Agreement and Public-Private Partnership schemes to actively conserve ecologically important sites under private ownership, including the 12 priority sites, country park enclaves and private land in country parks through collaboration with NGOs and rural communities.	ENB, AFCD	NGOs, rural communities	Ongoing
	e) Explore innovative methods to enhance, support and promote the conservation of rural areas with high ecological value.	ENB, AFCD	NGOs, rural communities	Ongoing

Action	Specific Action	Lead responsibility[a]	Support[a]	Timeframe[b]
3 Enhance conservation of natural streams	a) Conduct ecological surveys and compile ecological database on natural streams, especially Ecologically Important Streams.	AFCD		Medium term
	b) Improve practices in minor maintenance and hygiene works in natural streams and catchwaters, with a view to minimising ecological impacts arising from these works.	WSD, DSD, FEHD, AFCD		Short to medium term
	c) Control discharge of effluents from unsewered areas and its adverse impacts on streams.	EPD		Long term
4 Maintain habitat connectivity for wildlife	a) Enhance habitat connectivity and establish ecological corridors across the boundary.	EPD, AFCD		Ongoing
	b) Review and update guidelines on design of wildlife crossings.	AFCD	Works departments	Short term
5 Step up enforcement against wildlife crime	a) Maintain high vigilance and enhance enforcement against illegal poaching or collection of local species and raise public awareness.	AFCD, HKPF	NGOs, local communities	Ongoing
	b) Establish an inter-departmental task force on wildlife crime, to strengthen collaboration and intelligence exchange.	AFCD	ENB, HKPF, C&ED	Ongoing
	c) Strengthen enforcement and legislative measures to combat illegal trade in ivory.	ENB, AFCD		Ongoing/ Medium to long term
6 Implement conservation action plans for priority species	a) Establish a standardised mechanism for formulating species action plans.	AFCD	NGOs, academics	Short term
	b) Formulate action plans for species that require immediate conservation actions.	AFCD	NGOs, academics	Short to medium term
	c) Review and strengthen existing species action plans.	AFCD	NGOs, academics	Medium term
7 Improve management of invasive alien species	a) Build up capacity for the management of invasive alien species.	AFCD	Academics	Medium term
	b) Enhance the monitoring, management and control plans for target invasive alien species.	AFCD	Other management departments	Ongoing
	c) Conduct education programmes to raise awareness and to discourage release of alien species to the wild.	AFCD	NGOs	Ongoing
8 Control the environmental release of genetically modified organisms	a) Continue to control the environmental release of genetically modified organisms, monitor the development of related technology and expand screening programme.	AFCD		Ongoing

AREA 2 – MAINSTREAMING BIODIVERSITY

Action	Specific Action	Lead responsibility[a]	Support[a]	Timeframe[b]
9 Incorporate biodiversity considerations in planning and development process	a) Update the Sustainability Assessment system, to better integrate biodiversity considerations in major policies and plans of the Government.	ENB	AFCD	Short term
	b) Integrate biodiversity considerations in the territorial development strategy.	PlanD	AFCD	Ongoing
	c) Update and amend Chapter 10 of the Hong Kong Planning Standards and Guidelines by incorporating relevant guidelines on biodiversity considerations.	AFCD	PlanD	Medium term
	d) Enhance the practices in addressing ecological impacts of projects through environmental impact assessment process.	EPD, AFCD	DEVB, professional bodies and practitioners	Ongoing
10 Promote biodiversity in urban environment	a) Formulate an urban forestry strategy that contributes to a sustainable urban landscape and promotes the appreciation of urban biodiversity.	GLTMS	AFCD, Works departments, professional bodies	Short term
	b) Promote diversification of our soft landscapes and optimise use of native species for enriching urban biodiversity.	GLTMS	AFCD, Works departments, professional bodies	Medium term
	c) Promote the concept of Place Ecology in urban landscape designs.	GLTMS	Works departments, professional bodies	Medium term
	d) Promote knowledge building and sharing among the public and private sectors in the latest landscape concepts, designs and technologies that contribute to a sustainable urban ecosystem.	GLTMS, Works departments	Professional bodies and practitioners	Medium to long term
	e) Explore opportunities to enhance the value of urban parks for biodiversity conservation and education.	LCSD	AFCD	Medium term
	f) Adopt the concept of revitalising water bodies in large-scale drainage improvement works and planning drainage networks for New Development Areas.	DSD, CEDD		Ongoing
11 Promote sustainable fisheries	a) Designate and manage Fisheries Protection Area(s) to protect important fish spawning and nursery grounds.	FHB, AFCD		Long term
	b) Continue to conduct fisheries monitoring programme in Hong Kong waters.	AFCD	Academics, NGOs	Ongoing
	c) Provide funding support to encourage local fishing community to adopt sustainable fisheries operations.	AFCD		Ongoing
	d) Conduct studies on measures to prevent cormorant predation on commercial pond fish in Deep Bay area.	AFCD	Fishpond operators	Short term
12 Promote sustainable agriculture	a) Promote the modernisation and sustainable development of local agriculture as an integral part of the New Agriculture Policy.	FHB, AFCD		Ongoing

AREA 3 – IMPROVING OUR KNOWLEDGE

Action	Specific Action	Lead responsibility[a]	Support[a]	Timeframe[b]
13 Conduct biodiversity surveys	a) Enhance territory-wide biodiversity surveys on major groups of terrestrial and freshwater species.	AFCD	Academics, NGOs	Ongoing
	b) Conduct baseline and long-term surveys of priority marine habitats and species.	AFCD	Academics, NGOs	Ongoing
14 Conduct species assessment	a) Compile a list of threatened species for Hong Kong to guide conservation actions.	AFCD	Academics, NGOs, other researchers	Medium to long term
15 Collate information on terrestrial and marine habitats	a) Compile relevant information on marine habitats for guiding conservation of marine habitats.	AFCD	Academics, NGOs	Medium term
	b) Review and develop a standardised classification of habitat types in Hong Kong, and prepare a Geographic Information System-based habitat map.	AFCD	Academics	Medium term
16 Improve sharing of knowledge	a) Develop a web-based information hub to provide a one-stop shop for information on local biodiversity.	AFCD	NGOs, academics, education sector	Medium term
	b) Develop a Geographic Information System-based platform to facilitate sharing of data among different groups of users.	AFCD	Academics, NGOs, other researchers	Long term
17 Identify essential ecosystem services	a) Commission a study on the ecosystem services provided by major habitat types in Hong Kong.	AFCD	Academics, NGOs	Medium term
18 Enhance understanding on traditional knowledge	a) Encourage research on traditional knowledge relevant to conservation and sustainable use of biodiversity.	AFCD	NGOs, funding sources	Long term
	b) Encourage the wise use of natural resources using traditional knowledge, especially through the Management Agreement scheme.	AFCD	Environment and Conservation Fund	Ongoing
19 Provide funding support to research and studies	a) Conduct studies that would directly and significantly contribute to the conservation of biodiversity.	AFCD	Academics	Ongoing
	b) Encourage research to fill key information gaps on local biodiversity, through funding support by the Environment and Conservation Fund.	EPD, AFCD	Academics, NGOs, other researchers	Ongoing
	c) Support research on sustainable agriculture and fisheries practices and management.	AFCD		Ongoing

AREA 4 – PROMOTING COMMUNITY INVOLVEMENT

Action	Specific Action	Lead responsibility[a]	Support[a]	Timeframe[b]
20 Promote biodiversity awareness	a) Review and enhance education activities that promote biodiversity, being conducted by AFCD.	AFCD		Medium term
	b) Promote awareness and community involvement through citizen science monitoring programmes.	AFCD	NGOs, education sector	Medium term
	c) Organise annual festivals to provide a platform for engaging partners and relevant stakeholders in promoting biodiversity to the public.	AFCD	NGOs, education sector, community partners	Ongoing
	d) Conduct a survey on knowledge and attitudes towards biodiversity in Hong Kong.	AFCD	Academics, NGOs	Short term
	e) Encourage partnership between government and business sector in biodiversity conservation.	AFCD	Business sector	Medium term
	f) Encourage programmes to promote biodiversity education and community involvement, through funding support by the Environment and Conservation Fund.	EPD, AFCD	Local non-profit-making organisations	Ongoing
21 Promote biodiversity in education	a) Incorporate the concept of biodiversity in the school curriculum.	AFCD, EDB	Education sector	Medium term
	b) Engage NGOs to provide capacity building for teachers on biodiversity.	AFCD, EDB	NGOs, education sector	Long term
	c) Enhance the resources for early childhood education on nature conservation.	AFCD, EDB	Tertiary institutions	Short to medium term
22 Promote sustainable consumption	a) Conduct public engagement and explore relevant measures on promotion of sustainable consumption of biological resources.	ENB	AFCD, NGOs, business sector, relevant government departments	Short term
23 Enhance facilities for biodiversity education and research	a) Open and maintain a permanent exhibition on biodiversity in the Hong Kong Science Museum.	LCSD	AFCD, NGOs	Short term
	b) Support the establishment of biodiversity centres.	AFCD	Tertiary institutions	Medium term
	c) Explore the opportunity for setting up a natural history museum in the long term.	ENB, AFCD	Business sector, NGOs, relevant government departments	Long term

a AFCD – Agriculture, Fisheries and Conservation Department; CEDD – Civil Engineering and Development Department; C&ED – Customs and Excise Department; DSD – Drainage Services Department; EDB – Education Bureau; ENB – Environment Bureau; EPD – Environmental Protection Department; FEHD – Food and Environmental Hygiene Department; FHB – Food and Health Bureau; GLTMS – Greening, Landscape and Tree Management Section, Development Bureau; HKPF – Hong Kong Police Force; LCSD – Leisure and Cultural Services Department; PlanD – Planning Department; WSD – Water Supplies Department

b Ongoing = continuing existing programmes; Short term= targeted completion within 1-2 years; Medium term= targeted completion within 3-5 years; Long term = targeted completion beyond term of the first BSAP

Annex 2 – BSAP Steering Committee and Working Groups - Terms of Reference and Membership

Steering Committee

Terms of Reference:

- provide steer to the BSAP formulation;
- consider key findings and recommendations by the BSAP Working Groups in the course of formulating the BSAP; and
- consider and advise appropriate strategies and practicable measures for pursuing the objectives of Hong Kong's biodiversity conservation, and set priorities.

Membership (with effect from 1 June 2013 to 31 May 2016)

Chairman

Prof. LAM Kin-che, S.B.S, J.P.

Vice Chairman

Ms. LOH Kung-wai, Christine, J.P. (Under Secretary for the Environment)

Members

Mr Ruy BARRETTO

Prof. David DUDGEON

Ms Suzanne GENDRON

Ms HO Siu-fong, Betty, M.H.

Prof. JIM Chi-yung, J.P.

Mr Mike KILBURN

Dr LAU Chee-sing

Dr LAU Wai-neng, Michael

Ms Sophie LE CLUE

Dr MAN Chi-sum, J.P.

Dr NG Cho-nam, S.B.S., J.P.

Mr NG Anthony Vincent Wing Shun, J.P.

Dr SHIN Kam-shing, Paul

Prof. TAM Fung Yee, Nora, B.B.S., J.P.

Mr TAM Po-yiu

Dr WONG Fook-yee

Prof. WU Shiu-sun, Rudolf

Ms YAU Lai-ping, Pansy

Mr ZIMMERMAN Paul

Director of Agriculture, Fisheries and Conservation, with Deputy Director of Agriculture, Fisheries and Conservation as alternate member

Assistant Director of Agriculture, Fisheries and Conservation (Conservation)

Assistant Director of Agriculture, Fisheries and Conservation (Country and Marine Parks)

Deputy Director of Environmental Protection (2) with Assistant Director (Nature Conservation & Infrastructure Planning) as alternate member

Representative from Development Bureau*

Representative from Food and Health Bureau*

Representative from Education Bureau*

Representative from Planning Department*

Representative from Lands Department*

(*To attend on an as-needed basis)

Terrestrial Biodiversity Working Group

Terms of Reference:

- stock-take terrestrial biodiversity and related resources in Hong Kong;
- systematically review terrestrial biodiversity status, trends, threats, impacts and drivers of gains and losses, and identify information/knowledge gaps and key biodiversity issues;
- recommend and prioritise actions to address the gaps and issues;
- develop indicators and a reporting system to monitor the status of terrestrial biodiversity;
- formulate measures for evaluating the effectiveness of the BSAP with respect to the conservation of terrestrial biodiversity;
- report to the BSAP Steering Committee the findings and recommendations of the Working Group.

Membership (with effect from 1 June 2013 to 31 May 2016)

Convenor

Prof. JIM Chi-yung, J.P.

Members

Dr Gary ADES

Mr CHENG Sing-hymn, Simeon

Dr HAU Chi-hang, Billy

Dr Roger KENDRICK

Mr LEUNG Ho-yin, Henry

Mr LI Yiu-ban, B.B.S., M.H., J.P.

Mr SO Ngai-hung, Samson

Mr TSANG Kam-lam, B.B.S., J.P.

Ms YAU Mee-ling

Mr James YOUNG

Assistant Director of Agriculture, Fisheries and Conservation (Conservation)

Senior Conservation Officer (Biodiversity), Agriculture, Fisheries and Conservation Department

Senior Wetland and Fauna Conservation Officer, Agriculture, Fisheries and Conservation Department*

Senior Conservation Officer (Technical Services), Agriculture, Fisheries and Conservation Department*

Senior Country Parks Officer/South-east, Agriculture, Fisheries and Conservation Department*

(*To attend on an as-needed basis)

Marine Biodiversity Working Group

Terms of Reference:

- stock-take marine biodiversity and related resources in Hong Kong;
- systematically review marine biodiversity status, trends, threats, impacts and drivers of gains and losses, and identify information/knowledge gaps and key biodiversity issues;
- recommend and prioritise actions to address the gaps and issues;
- develop indicators and a reporting system to monitor the status of marine biodiversity;
- formulate measures for evaluating the effectiveness of the BSAP with respect to the conservation of marine biodiversity;
- report to the BSAP Steering Committee the findings and recommendations of the Working Group.

Membership (with effect from 1 June 2013 to 31 May 2016)

Convenor

Prof. TAM Fung-yee, Nora, B.B.S, J.P.

Members

Prof. ANG Put Jr.

Mr CHEUNG Fo-tai, B.B.S., M.H.

Dr CHEUNG Siu-gin

Dr Andy CORNISH

Dr HUNG Ka-yiu, Samuel

Mr Kevin LAURIE

Ms LEE Mei-wah, Samantha

Ir. LEE Ping-kuen, J.P.

Prof. LEUNG Mei-yee, Kenneth

Mr NG Sau-kin, Timothy

Dr QIU Jian-wen

Prof. Yvonne SADOVY

Prof. Gray WILLIAMS

Assistant Director of Agriculture, Fisheries and Conservation (Country and Marine Parks)

Senior Marine Conservation Officer/West, Agriculture, Fisheries and Conservation Department

Senior Fisheries Officer/Fisheries Management, Agriculture, Fisheries and Conservation Department*

(*To attend on an as-needed basis)

Awareness, Mainstreaming and Sustainability Working Group

Terms of Reference:

- stock-take policies, legislation, guidelines and administrative practices affecting biodiversity and ecosystem services, and consider inputs from the Terrestrial Biodiversity Working Group, Marine Biodiversity Working Group and other experts with respect to the Convention on Biological Diversity;
- review sustainable and unsustainable practices that have an impact on local and global biodiversity and ecological footprint;
- develop strategies to mainstream biodiversity values across the government and society, and to integrate the conservation and sustainable use of natural resources into relevant sectoral and cross-sectoral policies, plans programmes and projects;
- develop action plans to engage the wider community, enhance education and awareness, and acquire public support and involvement to achieve BSAP targets; and
- report to the BSAP Steering Committee the findings and recommendations of the Working Group.

Membership (with effect from 1 June 2013 to 31 May 2016)

Convenor

Dr WONG Fook-yee

Members

Mr CHEUNG Chi-wah	Ms WONG Lai-yin, Idy
Mr CHING See-ho, Ken	Ms YIP Yan-yan
Mr JOR Chi-keung, George	Assistant Director of Agriculture, Fisheries and Conservation (Conservation)
Mr Samuel KWONG	Executive Director of Hong Kong Wetland Park
Ms LAU Yuen-yee, Vicky	Senior Country Parks Officer / Ranger Services, Agriculture, Fisheries and Conservation Department
Dr LEE Wai-ying, Joanna	Senior Fisheries Officer / Fisheries Management*, Agriculture, Fisheries and Conservation Department
Mr LI Kwok-ying, B.B.S., M.H., J.P.	Senior Agricultural Development Officer*, Agriculture, Fisheries and Conservation Department
Mr PANG Siu-kei	
Mr SO Kwok-yin, Ken	
Mr TAM Man-kei	

(*To attend on an as-needed basis)

Focus Groups

Focus Groups were convened under the respective Working groups on an as-needed basis, to support the Working Groups to deliberate specific topics. A total of 12 Focus Groups were convened. They were:

(Convened under the Terrestrial Biodiversity Working Group)

- Status and Trend and Red List Focus Group
- Terrestrial Habitat Focus Group
- Terrestrial Impact Assessment Focus Group

(Convened under the Marine Biodiversity Working Group)

- Focus Group on Marine Habitat
- Focus Group on Marine Impact Assessment
- Focus Group on Sustainable Use of Marine Resources

(Convened under the Awareness, Mainstreaming and Sustainability Working Group)

- Focus Group on Business Sector
- Focus Group on Education
- Focus Group on Non-government Organisations
- Legislation Focus Group
- Sustainable Use, Ecological Footprint and Ecosystem Services Focus Group
- Traditional Knowledge Focus Group

The final reports submitted by these Focus Groups to their respective Working Groups are available on the BSAP webpage for reference: http://www.afcd.gov.hk/bsap