



THE APCEL GUIDE TO SINGAPORE AND ASEAN ENVIRONMENTAL LAW

BIODIVERSITY AND NATURE CONSERVATION

The APCEL Guide to Singapore and ASEAN Environmental Law is a multi-year research project that commenced in late 2017. It aims to publish a series of annotated bibliographies on important areas of environmental law in Singapore and ASEAN over the next five years. Each annotated bibliography represents the latest overview of the secondary and primary literature to date, and will be updated annually. Please cite as *Melissa B.N. Tan, APCEL Guide to Singapore and ASEAN Environmental Law: Biodiversity and Nature Conservation (APCEL, Singapore, 2018)*.

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**ANNOTATED BIBLIOGRAPHY:
BIODIVERSITY AND NATURE CONSERVATION LAWS AND POLICY
OF SINGAPORE AND THE ASEAN REGION**

I. INTRODUCTION

This annotated bibliography sets out a list of essential readings on the biodiversity and nature conservation laws and policy of Singapore and the ASEAN region. It contains both primary sources and secondary literature. For the benefit of researchers without a scientific background, key scientific sources have also been included. While the list is not exhaustive, it is hoped that it will be a useful starting point for further research.

Each source cited includes the author(s) or editor(s)' names, the title of the source, publication details, and the URL to open access content (if any). This is followed by a short paragraph that describes and/or evaluates the source.

The bibliography is divided into six main sections, namely:

- (a) Singapore: Government Policies and Publications;
- (b) Singapore: Secondary Materials on Law and Policy;
- (c) Singapore: Other Secondary Materials;
- (d) ASEAN: Official Instruments and Publications;
- (e) ASEAN: Secondary Materials on Law and Policy; and
- (f) Biodiversity-related Conventions and Their Status in Singapore and the ASEAN Region.

Save for the Section III and Section VIII, the sources listed within each section are listed alphabetically by the first author's surname or the first editor's surname, followed by the date of publication. Where the author or editor appears for the first time in the bibliography, the annotation includes a brief introduction to him or her.

II. COMMONLY USED ACRONYMS

AHP	ASEAN Heritage Park
APCEL	Asia Pacific Centre for Environmental Law
ASCC Blueprint	ASEAN Socio-Cultural Community Blueprint
CBD	Convention on Biological Diversity, 1992
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973
IUCM	Integrated Urban Coastal Management
MPA	Marine Protected Area
NBSAP	National Biodiversity Strategy and Action Plan
NCMP	<i>Nature Conservation Masterplan</i>
NParks	National Parks Board
NUS	National University of Singapore
PUB	PUB, Singapore's National Water Agency
SGP 2012	Singapore Green Plan 2012
SSB 2009	Sustainable Singapore Blueprint 2009
SSB 2015	Sustainable Singapore Blueprint 2015
UNCLOS	United Nations Convention on the Law of the Sea, 1982

III. SINGAPORE: GOVERNMENT POLICIES AND PUBLICATIONS

A. SINGAPORE GREEN PLANS

Ministry of the Environment, *The Singapore Green Plan: Towards a Model Green City* (Singapore: SNP Publishers Pte Ltd, 1992).

The Singapore Green Plan was Singapore's first formal environmental blueprint. It was prepared by the Ministry of the Environment (the predecessor of the Ministry of the Environment and Water Resources) with inputs from public and private organisations, as well as Singaporeans who attended public forums organised by the Ministry. In June 1992, it was presented at the United Nations Conference on Environment and Development (also known as the Earth Summit or the Rio Summit). It describes the strategic policy directions that Singapore would take to achieve its vision of becoming a model Green City by the year 2000. The plan states the Government's intention to set aside 5% of the total land area (after reclamation) for nature conservation. It also sets out the Government's commitments to balancing land development needs with green areas and open spaces, and to conserve, as far as possible, areas of ecological merit. Action programmes were to be generated and implemented based on this plan. See below for subsequent editions.

Chua Lee Hoong, *The Singapore Green Plan 2012: Beyond Clean and Green Towards Environmental Sustainability* (Singapore: Ministry of the Environment, 2002), online: <https://www.mewr.gov.sg/docs/default-source/default-document-library/grab-our-research/sgp2012.pdf>.

The original Singapore Green Plan was reviewed in 1999. The outcome of the review was the Singapore Green Plan 2012 ("**SGP 2012**"), which was presented at the World Summit on Sustainable Development in September 2002. Serving as Singapore's environmental blueprint for the next ten years, it moved Singapore away from its earlier focus on being Clean and Green towards attaining environmental sustainability in its pursuit of development. The main targets in the SGP 2012 with respect to nature conservation were as follows: (i) keeping the 19 Nature Areas (defined as sustainable, biodiversity-rich mature sites) for as long as possible; (ii) verifying and updating information on indigenous flora and fauna through biodiversity surveys; (iii) putting in place new parks and park connectors; and (iv) setting up a National Biodiversity Reference Centre under the National Parks Board ("**NParks**"). The section on Conserving Nature elaborates on some of Singapore's key conservation milestones and efforts, including the Heritage Roads and Heritage Trees Scheme, the Government's decision in 2002 to defer land reclamation on Chek Jawa, the promotion of Sungei Buloh Nature Park and Labrador Nature Park from Nature Areas to legally protected Nature Reserves in 2001, as well as the multi-agency and stakeholder approach taken to maintain the quality of Singapore's marine environment.

Ministry of the Environment and Water Resources, *The Singapore Green Plan 2012 (2006 Edition)* (Singapore: Ministry of the Environment and Water Resources, 2006), online: https://www.mewr.gov.sg/docs/default-source/default-document-library/grab-our-research/sgp2012_2006edition_new.pdf.

The Ministry of the Environment and Water Resources conducted its first three-yearly review of the SGP 2012 and released an updated edition in 2006, which deleted the completed targets and programmes and revised others to expand their frame of reference. Of the four nature conservation targets, only one is expanded, namely, the target to create more new parks and park connectors, which evolved into establishing more parks and green linkages (i.e. green corridor developments). In respect of Nature Areas, this edition states that special consideration must be given to the existing biodiversity of the 18 Nature Areas (in addition to the four gazetted Nature Reserves) that were listed in the Special and Detailed Controls Plans of the URA's Master Plan before these areas may be developed. The relevant government agencies will continue to rehabilitate, enhance and manage the indigenous ecosystems in these Nature Areas. There will be more efforts to educate the public about Singapore's biodiversity, including the updating of the Red Data Book on endangered plants and animals of Singapore. It is announced that the National Biodiversity Reference Centre will be set up soon. More recent status updates are set out at <https://www.mewr.gov.sg/docs/default-source/default->

[document-library/grab-our-research/4-nature.pdf](#). Today, the relevant government agencies continue to monitor progress towards meeting the SGP 2012 targets.

B. SUSTAINABLE SINGAPORE BLUEPRINTS

Inter-Ministerial Committee on Sustainable Development, *A Lively and Liveable Singapore: Strategies for Sustainable Growth* (Singapore: Ministry of the Environment and Water Resources & Ministry of National Development, 2009), online: https://www.nccs.gov.sg/sites/nccs/files/Sustainable_Spore_Blueprint.pdf.

The Inter-Ministerial Committee on Sustainable Development (IMCSD) was set up by Prime Minister Lee Hsien Loong in January 2008 to develop a national framework and key strategies for Singapore's sustainable development until 2030. The IMCSD launched the Sustainable Singapore Blueprint in April 2009 ("**SSB 2009**"). It sets higher targets than the SGP 2012 (2006 edition). Some of the key recommendations made in Chapter 6 of the SSB 2009, which is entitled "PLAY – A City of Gardens and Water", relate to the nature conservation targets under the SGP 2012 (2006 edition). The SSB 2009 recommends substantially increasing green park space and skysrise greenery, as well as tripling the lengths of park connectors. In respect of biodiversity conservation, the IMCSD recommended implementing a National Biodiversity Strategy and Action Plan to research, document, and conserve biodiversity in Singapore, in addition to developing a City Biodiversity Index with international partners to promote biodiversity conservation efforts among cities worldwide. The SSB also reiterates that Singapore will keep the Nature Areas designated in the Special & Detailed Controls Plans of URA's Master Plan 2008 for as long as possible.

Ministry of the Environment and Water Resources & Ministry of National Development, *Our Home Our Environment Our Future: Sustainable Singapore Blueprint 2015* (Singapore: Ministry of Environment and Water Resources & Ministry of National Development, 2014), online: <http://www.mewr.gov.sg/ssb/files/ssb2015.pdf>.

The Sustainable Singapore Blueprint 2015 ("**SSB 2015**") was drafted in response to current global challenges, namely, climate change, globalisation, and the increasing pressures on resources which are being exerted by global population and economic growth. It outlines Singapore's national vision and plans for A Liveable and Endearing Home; A Vibrant and Sustainable City; An Active and Gracious Community. Chapter 3, which is entitled A Liveable and Endearing Home, discusses the efforts by NParks and PUB, Singapore's National Water Agency ("**PUB**") to bring more green and blue spaces to households through various initiatives, such as creating new parks (see box story on the new Jurong Lake Gardens), the ABC Waters Programme, and the Nature Ways programme. Chapter 5, which is entitled An Active and Gracious Community, highlights volunteerism in relation to Pulau Ubin and the Nature Areas.

Ministry of the Environment and Water Resources & Ministry of National Development, *Sustainable Singapore Blueprint 2015 (2016 version)* (Singapore: Ministry of Environment and Water Resources & Ministry of National Development, 2016), online: <https://www.mewr.gov.sg/docs/default-source/module/ssb-publications/41f1d882-73f6-4a4a-964b-6c67091a0fe2.pdf>.

The 2016 version of the SSB 2015 features several case studies in relation to the vision for "A Liveable and Endearing Home, A Vibrant and Sustainable City, An Active and Gracious Community". The section on A Liveable and Endearing Home includes case studies of the Jurong Lake Gardens, and the Singapore River and the ABC Waters Programme while the section on An Active and Gracious Community discusses the Ubin Project and the Community in Bloom project. Some of Singapore's global efforts to respond to complex environmental challenges were also highlighted.

C. BIODIVERSITY CONSERVATION BLUEPRINTS AND ACTION PLANS

National Parks Board, *Conserving Our Biodiversity: Singapore's National Biodiversity Strategy and Action Plan* (Singapore: National Parks Board, 2009), online: https://www.nparks.gov.sg/biodiversity/our-national-plan-for-conservation/~/_media/nparks-real-content/biodiversity/national-plan/nbsap_2009.pdf.

This document (“**NBSAP**”) was launched by NParks on 5 September 2009. It is Singapore’s blueprint for biodiversity conservation and management, which consists of 5 broad strategies, namely, Safeguard Our Biodiversity, Consider Biodiversity Issues in Policy and Decision-making, Improve Knowledge of Our Biodiversity and the Natural Environment, Enhance Education and Public Awareness, and Strengthen Partnerships with All Stakeholders and Promote International Collaboration. In preparing the NBSAP, other government agencies’ and nature groups’ inputs were considered. It is intended to fulfil Singapore’s commitments under the Convention on Biological Diversity, 1992 (“**CBD**”), which Singapore ratified on 21 December 1995. Immediately prior to this, the SGP 2012 served as Singapore’s latest national biodiversity strategy and action plan. The NBSAP is administered by the National Biodiversity Centre. (*For a background to Singapore’s early years of implementing the CBD, readers may refer to Koh Kheng Lian, “Singapore”, cited below.*)

National Parks Board, *Marine Conservation Action Plan – an Action plan of the NCMP* (Singapore: National Parks Board, 2015), online: <https://www.nparks.gov.sg/news/2015/6/marine-conservation-action-plan-an-action-plan-of-the-ncmp>.

This plan is part of the Nature Conservation Masterplan (see next source). It is considered Singapore’s first official blueprint for marine conservation. Prior to this, academics and civil society groups had put together the Singapore Blue Plan 2009, which was a masterplan for the marine environment. It consolidates various programmes and initiatives by NParks, such as the creation of the Sisters’ Islands Marine Park, as well as the species recovery programmes to reintroduce the Giant Clam (*Tridacna gigas*) and the Neptune’s Cup Sponge (*Cliona patera*) into local waters.

National Parks Board, *Nature Conservation Masterplan (NCMP)* (Singapore: National Parks Board, 2015), online: <https://www.nparks.gov.sg/news/2015/6/nature-conservation-masterplan>.

Launched in June 2015, this plan (“**NCMP**”) supports the implementation of the NBSAP by laying down the course of Singapore’s biodiversity conservation plans for 2015 to 2020. It brings together various programmes and projects and covers four aspects, namely, physical planning for the conservation of core biodiversity areas, buffer areas and ecological connectivity; programmes for biodiversity conservation, research involving comprehensive surveys and long-term monitoring of biodiversity, and community stewardship to encourage public interest and involvement in biodiversity conservation.

D. NATIONAL REPORTS TO THE CONVENTION ON BIOLOGICAL DIVERSITY

National Parks Board, *First National Report under the Convention on Biological Diversity* (Singapore: National Parks Board, 1997), online: <https://www.cbd.int/doc/world/sg/sg-nr-01-en.pdf>.

Singapore signed and ratified the CBD on 12 June 1992 and 21 December 1995 respectively. Pursuant to Article 26 of the CBD, each contracting party is required to present periodic reports on measures that it has taken to implement the provisions and the effectiveness of these measures to the Conference of Parties. This document is the first national report. It was received on 2 April 1998.

National Parks Board, *Second National Report* (Singapore: National Parks Board, 2003), online: <https://www.cbd.int/doc/world/sg/sg-nr-02-en.pdf>.

This is the second national report. It was received on 13 January 2003. (*Unlike the 1st report, the 2nd report followed a questionnaire format, which had been adopted by the Conference of Parties at its fifth meeting as a guide for national reporting and as a means by which the national implementation was measured.*)

National Parks Board, *Singapore — Third National Report* (Singapore: National Parks Board, 2006), online: <https://www.cbd.int/doc/world/sg/sg-nr-03-en.pdf>.

This is the third national report. It was received on 15 September 2006. (*The third report is also presented in a questionnaire format.*)

National Parks Board, Singapore — 4th National Report to the Convention on Biological Diversity (Singapore: National Parks Board, 2010), online: <https://www.cbd.int/doc/world/sg/sg-nr-04-en.pdf>.

This is the fourth national report. It was received on 1 September 2010. (*Unlike the 2nd and 3rd reports, the guidelines for the 4th national report requested that contracting parties present their reports in narrative form and that they complement concise narrative reporting with tables, figures or graphics. The earlier questionnaire format was discarded because it was not as helpful as initially anticipated for review and decision-making processes. Further, it had been focused on decisions by the Conference of Parties, rather than providing an overview of national implementation measures.*)

National Parks Board, Singapore — 5th National Report to the Convention on Biological Diversity (2010-2014) (Singapore: National Parks Board, 2015), online: <https://www.cbd.int/doc/world/sg/sg-nr-05-en.pdf>.

This is the fifth national report. It was received on 28 March 2016. It provides updates on the status and trends on biodiversity in Singapore, the implementation of Singapore's NBSAP, and Singapore's progress towards the 2010 Aichi Biodiversity Targets. The annexes include Singapore's score for the Singapore Index on Cities' Biodiversity, as well as species lists of new species, new records, rediscoveries, and extinctions.

E. COASTAL MANAGEMENT

The Technical Committee on the Coastal and Marine Environment, *Singapore's Integrated Urban Coastal Management* (Singapore: The Technical Committee on the Coastal and Marine Environment, 2013), online: https://www.nparks.gov.sg/~media/nparks-real-content/biodiversity/programmes-and-initiatives/nparks_iucm-booklet_mar2013.pdf?la=en.

This document was prepared by an inter-agency committee with representatives from several organisations, including the Agri-food and Veterinary Authority, the Maritime Port Authority, NParks, the National Environment Agency, NUS and PUB. By way of background, Integrated Urban Coastal Management (“IUCM”) is a specific form of integrated coastal management that was developed to suit Singapore's unique circumstances where the coastal and marine environment is inseparable from urban surroundings. The section on IUCM instruments describes the existing administrative processes (including environmental impact assessments), legal framework for coastal management (see, in particular, the table summarising the key regulations), coordinating mechanisms, supporting structures (see list of soft laws and programmes), and partnerships between the people, private and public sectors. The next section covers the strategy and implementation of IUCM, including some NParks' initiatives to conserve, enhance and rehabilitate the coastal and marine environment.

IV. SINGAPORE: SECONDARY MATERIALS ON LAW AND POLICY

Centre for Liveable Cities & National Parks Board, *Biodiversity: Nature Conservation in the Greening of Singapore*. (Singapore: Cengage Learning Asia Pte Ltd, 2015).

This monograph is part of the Singapore Urban Systems Studies Booklet Series, which is based on original Urban Systems Studies research by the Centre for Liveable Cities. It was written in close collaboration with various government agencies and draws on exclusive interviews with pioneer leaders that have not otherwise been made publicly available. It documents the evolution of Singapore's biodiversity conservation efforts and the ongoing paradigm shifts in biodiversity conservation as Singapore moves from a Garden City to a City in a Garden. The appendices to the booklet are an added bonus. They include a timeline of key biodiversity conservation efforts, a list of biodiversity surveys conducted by NParks from 1993 to 2015, as well as lists of legal instruments, executive policies and institutions (both historical and current).

Chng, Michelle Wei Ping & Chou Loke Ming, "Seagrasses in Singapore: Current Status and Long-term Management Plans" in Lye Lin-Heng et al, eds, *Sustainability Matters: Asia's Green Challenges* (Singapore: World Scientific Publishing Co. Pte. Ltd., 2014) 363.

This was one of the best research papers from the 2010/2011 batch of the NUS Masters in Environmental Management graduates. It studies the management of seagrass habitats in Singapore. Section 5, examined national legislation and policies that addressed the main threats faced by seagrass areas in Singapore, namely, oil spills, port expansion and maritime activities, land reclamation and dredging works. Section 6 offered recommendations for long-term seagrass management, such as a reactive approach to management (including dredge material management plans, identifying areas at risk from oil spills, and environmental impact assessments); the implementation of an integrated coastal zone management system by a central government agency; and demarcating and implementing Marine Protection Areas.

Chun, Joseph, "Animal Welfare and Nature Conservation Laws in Singapore: A Moral Duty to Non-Human Nature?" (2005) 9(1) *Asia Pacific Journal of Environmental Law* 39, online: <https://ssrn.com/abstract=918748>.

The author is an associate member of the Asia Pacific Centre for Environmental Law ("APCEL"), Faculty of Law, NUS. This article examines the broad ethical basis of the following animal welfare and nature conservation laws in Singapore: the Wild Animals and Birds Act (Cap 351, 2000 Rev Ed), the Animals and Birds Act (Cap 7, 2002 Rev Ed), the Endangered Species (Import and Export) Act (Cap 92A, 2000 Rev Ed), and the National Parks Act (Cap 198A, 1997 Rev Ed). It observes that unlike the trend in international environmental law towards a non-anthropocentric ethic, the environmental ethic underlying these laws in Singapore is still strongly anthropocentric. It considers the normative arguments for adopting a non-anthropocentric ethic or approach but ultimately rejects them.

Chun, Joseph, "Reclaiming the Public Trust in Singapore" (2005) 17 *Singapore Academy of Law Journal* 717, online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=918737.

This article examines the public trust doctrine and its development in other jurisdictions. (The doctrine provides that certain natural resources are held "on trust" for the public and therefore legal owners of these resources are entrusted to use these resources for specific public purposes.) It considers its application in Singapore by using the events leading to the Government's decision to temporarily defer plans to reclaim Chek Jawa as a case study. The author concludes that the doctrine has a potentially useful role to play in improving environmental governance in Singapore because it "provides citizens with the legal vocabulary to articulate their environmental concerns in the common interest". (*For another article on the application of the public trust doctrine in Singapore, see Lye Lin-Heng, "Land Law and the Environment: Re-examining the Concept of Ownership and Forging New Rights and Obligations in a Changed World", cited below.*)

Chun, Joseph, "Beyond Real Estate: Sowing the Legal Seeds for an Ethical Public Land Stewardship in Singapore" (2006) 3 *Macquarie Journal of International and Comparative Environmental Law* 1, online: <https://ssrn.com/abstract=940502>.

This article examines the law and practice relating to the management of public land in Singapore (i.e. land owned and managed by the State). It observes that like private land law, public land law empowers but does not oblige the Government to protect the health of ecological systems. It argues that modern developments in ecology and ethics require land ownership and management to take on a more expansive view of community interests, take into account the interdependence between species and land as a biotic community, and protect land from irreparable ecological degradation for short-term economic gain. Suggestions for legal reform include introducing procedural constraints on the public land manager's discretion to determine land use on purely economic terms. Ultimately however, it is noted that public land managers are public servants, and they will only internalise the land ethic when the society they serve do the same and expects its public servants to do the same. In this regard, this article argues that the law plays an important role in developing a social ecological conscience for land stewardship by empowering the public to become more closely involved in land management through access to environmental information and public deliberation.

Chun, Joseph, "Enhancing the Garden City: Towards a Deeper Shade of Green" (2006) 18 Singapore Academy of Law Journal 248, online: <https://ssrn.com/abstract=918741>.

This article reviews the key provisions of the Parks and Trees Act 2005, which had been newly enacted at the time of its publication. The new provisions introduced the heritage road green buffers; enhanced penalties for offences committed in national parks, nature reserves, and tree conservation areas; and enhanced the effectiveness of NParks. While this article acknowledges that the new Act presented a step forward from the previous one, it argues that there is scope for further improvements to safeguard the ecological integrity of Singapore's natural heritage. Suggestions given included legislative provisions to ensure that nature conservation is expressly given appropriate weight in decision-making processes and requirements for mandatory environmental impact assessments.

Chun, Joseph, "Wildlife Law in Singapore – Protecting Wildlife in the 'Garden City'" in R. Panjwani, ed, *Wildlife Law – a Global Perspective* (Chicago: ABA Publishing, 2008) 201, online: <https://ssrn.com/abstract=996313>.

This chapter examines Singapore's legal and administrative framework for protecting wildlife and their habitats from human activities. Like other publications cited in this bibliography, it covers the laws on land use planning, the protection of nature in designated areas, and general protections afforded to wild fauna and flora. Exceptionally, it also considers wildlife issues from the following angles: pollution, human rights, trade/industrial development, cultural/religious, taxation, land reclamation, and the judiciary's role in implementing wildlife laws. It critiques the effectiveness of wildlife habitat protection legislation, calling them "powerless" against state encroachment. In this regard, several examples are given where nature reserves and Nature Areas were sacrificed for development without any opportunity for public participation. The author concludes by pointing out two deficiencies in an otherwise "relatively comprehensive" legal framework: (a) there is wide discretion conferred on the State and agencies with respect to land use and development control without imposing adequate provisions for transparency and accountability (e.g. mandatory environmental impact assessment legislation); and (b) in areas of law such as the prevention of animal cruelty and the regulation of wildlife trade, there remain inadequacies in respect of penalties and the enforcement manpower needed.

Dharmarajah, Vinayagan, "Review of Wild Animals and Birds Act (WABA): Proposals for Its Improvement" in Proceedings of Nature Society (Singapore)'s Conference on Nature Conservation for a Sustainable Singapore, 16th October 2011 (Singapore: Nature Society (Singapore), 2011) 65, online: [https://www.nss.org.sg/documents/Pages%2065-69%20Vinayagan%20D%20REVIEW%20OF%20WILD%20ANIMALS%20AND%20BIRDS%20ACT%20\(WABA\).pdf](https://www.nss.org.sg/documents/Pages%2065-69%20Vinayagan%20D%20REVIEW%20OF%20WILD%20ANIMALS%20AND%20BIRDS%20ACT%20(WABA).pdf).

The author is an associate member of APCEL. This paper was presented at the Nature Society (Singapore)'s Conference on Nature Conservation for Sustainable Singapore, which took place on 16 October 2011. It critiques the Wild Animals and Birds Act and contemplates if the existing Act should be amended in the following ways: to cover wildlife harassment issues; to support wildlife habitats; to review the list of six bird species excluded from protection under the existing Act; to prohibit any release of invasive species in Singapore generally; and to define the circumstances under which wild animals and birds can be killed. In addition, it explores whether special protection should be afforded to charismatic species, vulnerable species, and migratory bird species, as well as whether specialist laws should be enacted to protect marine wildlife and invertebrates, which are unprotected under the existing Act. (*The issues covered in this paper remain relevant and unaddressed by the Act.*)

Koh, Kheng Lian, "Singapore: Fashioning Landscape for the 'Garden City'" in IUCN Commission on Environmental Law, *Landscape Conservation Law: Present Trends and Perspective in International and Comparative Law*, Environmental Policy and Law Paper No. 39 (Gland, Switzerland and Cambridge, UK: IUCN, 2000) 39, online: <https://portals.iucn.org/library/sites/library/files/documents/EPLP-039.pdf>.

This is the transcript of a presentation that was delivered during the comparative law session of the Colloquium on Landscape Conservation Law — Present Trends and Perspectives in International and Comparative Law (30 October 1998). The speaker was the then Vice-Chair of the IUCN Commission for Environmental Law. She was the founding director of APCEL and is currently an Emeritus Professor at the Faculty of Law, NUS. In this speech, she presented the perspective from Singapore, which she described as having "an urban landscape of natural and

cultivated greenery and a sustainable ecosystem". The presentation covered the land use and planning control laws of the 1990s; the legislative and institutional history of urban greening and tree conservation efforts between the 1970s and the 1990s; and the achievements of the Garden City in the 1990s, including the creation of two tree conservation areas. In closing, she highlighted the loss of some nature areas, such as the Senoko bird haven, and reflected on the continuing fight between "concretising" and leaving nature areas for promoting sustainable development. In this regard, she noted that there was still room for improvement. This presentation provides a succinct historical view of Singapore's laws and policies on urban greening and nature conservation. (*A more comprehensive history of Singapore's evolution from a Garden City to a City in a Garden is set out in Neo Boon Siong, June Gwee & Candy Mak, "Case study 1: Growing a city in a garden", cited below.*)

- Koh, Kheng Lian, "Singapore" in Jeremy Carew-Reid, ed, *Biodiversity Planning in Asia: A Review of National Biodiversity Strategies and Action Plans (NBSAPs)* (Gland, Switzerland and Cambridge, UK: IUCN, 2002) 237, online: International Centre for Environmental Management <http://www.icem.com.au/documents/biodiversity/bioplan/singapore.pdf>.

This chapter shows Singapore's early approach to implementing its obligations under the Convention on Biological Diversity. At the time, Singapore's NBSAP was contained in the Master Plan 1998 and originated from what the author calls "the three Singapore Green Plans". (*Readers should note that the new NBSAP was launched in 2009 and is entitled Conserving Our Biodiversity: Singapore's National Biodiversity Strategy and Action Plan, cited above.*) The rest of the chapter covers recommendations made by the Nature Society (Singapore) in the context of the Singapore Green Plan and the inadequacies of the laws protecting designated marine nature areas. It argues that the implementation of the various Singapore Green Plans had been "too narrow and sectoral" and "should be broadened to include the objectives of global and ASEAN instruments (hard and soft law) relating to biodiversity". A few examples are raised in this regard. (*Readers should note that some of the observations are now outdated. For instance, Singapore rejoined the United Nations Organization for Education, Science and Culture (UNESCO) on 8 October 2007, and the Bukit Timah Nature Reserve and Sungei Buloh Wetland Reserve have been declared ASEAN Heritage Parks.*)

- Liow, Lee Hsiang, "Mangrove conservation in Singapore: A physical or a psychological impossibility?" (2000) 9 *Biodiversity and Conservation* 309.

The author was a researcher at the Swedish Biodiversity Centre and the Department of Biological Sciences, NUS. This article reviews the current situation in Singapore pertaining to natural habitats and conservation. It argues that mangrove conservation efforts have been inadequate thus far, "largely due to the lack of political commitment and the dearth of understanding of the importance of mangroves as a natural habitat and a national heritage". The author gives five examples of conservation efforts, including the preservation of the Sungei Buloh Nature Park, which the author deemed "not a total success story". (*Readers should note that Sungei Buloh was subsequently gazetted as a nature reserve in 2001.*) It contends that it is "highly possible that nature conservation in Singapore is not a true physical impossibility due to lack of space as so many believe but rather a psychological refusal that has been imprinted on the Singaporean mind". The article also highlights the paucity of baseline data pertaining to mangroves, discusses the problems stemming from the public's lack of awareness and alienation from nature, and argues for the conservation of Singapore's remaining mangroves. It concludes with proposed conservation strategies, such as the creation of a central coordinating body that looks into conflicting potential uses of coastal zones, as well as local and regional research directions.

- Lye, Lin-Heng, "Wildlife Protection Laws in Singapore" (1991) *Singapore Journal of Legal Studies* 287.

The author was formerly a co-director of APCEL. This article was written with the assistance of Associate Professor Chou Loke Meng of the Department of Biological Sciences (formerly known as the Department of Zoology), NUS, and members of the Nature Society (Singapore) (formerly known as the Malayan Nature Society (Singapore branch)). It provides a comprehensive, historical perspective of Singapore's wildlife protection laws. It traces the development of these laws, starting with the rights to wild animals at English common law to the enactment of colonial legislation to protect wild animals, birds and nature reserves. The main discussion centres on wildlife protection legislation in force in 1991, including the Wild Animals and Birds Act, and legislation governing particular areas, such as nature reserves,

catchment area parks, bird sanctuaries, and other parks. The rest of the discussion covers: the animal cruelty provisions in the Animals and Birds Act; recent conservation efforts; the lack of specific laws to protect Singapore's rich marine eco-system and the calls for conservation areas; and the Endangered Species (Import and Export) Act, which was passed in 1989 to implement the Convention on International Trade in Endangered Species of Wild Fauna and Flora. (*Readers should note that some of the legislation has since been amended. With respect to the Wild Animals and Birds Act, five bird species were added to the Schedule of unprotected species. More recent commentary on wildlife protection laws can be found in the author's "Nature Conservation Laws – The Legal Protection of Flora and Fauna in Singapore" and Joseph Chun's "Wildlife Law in Singapore – Protecting Wildlife in the 'Garden City'", and Vinayagan Dharmarajah's "Review of Wild Animals and Birds Act (WABA): Proposals for Its Improvement", all of which are cited in this bibliography.*)

Lye, Lin-Heng, "Land Use Planning, Environmental Management and the Garden City as an Urban Development Approach in Singapore" in Nathalie J. Chalifour et al, eds, *Land Use Law for Sustainable Development* (New York: Cambridge University Press, 2007) 374.

This chapter examines the role of land use planning and environmental laws (particularly in relation to pollution control and the preservation of nature areas, parks and greenery) in the management of Singapore's environment. Section 5 reviews the strategies applied in the greening of Singapore and summarises the laws protecting Singapore's natural heritage. It also covers the ongoing tensions between development and nature conservation, using examples involving Lower Peirce Reservoir and Chek Jawa. Section 6 evaluates environmental management in Singapore. Finally, it discusses the lack of a law mandating environmental impact assessments issues.

Lye, Lin-Heng, "A Fine City in a Garden: Environmental Law and Governance in Singapore" (2008) Singapore Journal of Legal Studies 68, online: <https://ssrn.com/abstract=1268682>.

This paper examines Singapore's environmental law and governance, with particular emphasis on pollution control, water conservation, and nature conservation. Section B of Part II identifies the government agencies responsible for greening and nature conservation. Sections C, D, and E of Part VI set out the historical background of the nature conservation laws, the extent of protection available to wild fauna and flora depending on their precise location in Singapore, as well as the enforcement powers under these laws. The author observed in passing that the general protection for wildlife under the Wild Animals and Birds Act is "inadequate", "outdated", and "in need of urgent revision". Additionally, the author discussed the inadequacies in existing laws, particularly the lack of laws mandating environmental impact assessments and those protecting the marine environment. (*For more detailed commentary of the Wild Animals and Birds Act, readers may refer to this author's "Wildlife Protection Laws in Singapore" and "Nature Conservation Laws – The Legal Protection of Flora and Fauna in Singapore", Vinayagan Dharmarajah's "Review of Wild Animals and Birds Act (WABA): Proposals for Its Improvement", and Joseph Chun's "Wildlife Law in Singapore – Protecting Wildlife in the 'Garden City'", all of which are cited in this bibliography.*)

Lye, Lin-Heng, "Nature Conservation Laws – The Legal Protection of Flora and Fauna in Singapore" in G.W.H. Davison, PKL Ng and Ho Hua Chew, eds, *The Singapore Red Data Book: Threatened Plants and Animals of Singapore*, 2d ed. (Singapore: Nature Society (Singapore), 2008) 5.

This is a chapter in the latest edition of The Singapore Red Data Book: Threatened Plants and Animals of Singapore (cited below), which is widely regarded as the authoritative inventory of Singapore's threatened species. It provides a detailed account of the general protection of wild animals and birds under the Wild Animals and Birds Act, as well as the regulations and prohibitions that apply in designated areas, such as national parks, nature reserves, catchment area parks, public parks, tree conservation areas, and heritage road green buffers. In addition, it discusses the lack of laws protecting marine life or ecosystems, the existing laws on trade in endangered species, and the steps that Singapore has taken to implement the CBD. It concludes by commenting on Singapore's lack of mandatory environmental impact assessments for projects that may have an adverse impact on the environment and some instances when development encroached on nature areas.

Lye, Lin-Heng, "Land Law and the Environment: Re-examining the Concept of Ownership and Forging New Rights and Obligations in a Changed World" (2010) 22 Singapore Academy of Law Journal 189, online: <http://journalonline.academypublishing.org.sg/Journals/Singapore-Academy-of-Law-Journal-Special-Issue/e-Archive/ctl/eFirstSALPDFJournalView/mid/513/ArticleId/370/Citation/JournalsOnlinePDF>.

This article re-examines the concept of land ownership in the context of present day environmental concerns. It asserts that traditional absolutist perspectives of land ownership have led to its ecological impoverishment, as land is cleared and put to "productive use", regardless of ecological concerns. New scientific knowledge draws our attention to pressing issues, such as species extinction, climate change, and the destruction of ecosystems, and compels us to understand the necessity for species and ecosystem preservation even as we continue to develop our lands. As such, it argues that new obligations must be imposed on landowners to ensure that environmental considerations are applied before land is transformed for other uses. It calls for an ethical perspective on land law, based on respect for the land and its ecological functions and a recognition that humans are members of the biotic community. In addition, it advocates imposing a public trust in appropriate circumstances, in respect of land held by the State and by private landowners. These issues are analysed in the Singapore context, where conflicts have inevitably arisen in the continuing struggle between development and conservation in this small city-state which has no constitutional protection for property. *(This article makes reference to other articles cited in this bibliography, including Joseph Chun's "Reclaiming the Public Trust in Singapore".)*

Lye, Lin-Heng, *Environmental Law in Singapore* (Zuidpoosingel, The Netherlands: Kluwer Law International, 2013).

This book was originally published as a monograph in the multi-volume International Encyclopaedia of Laws — Environmental Law. It provides a comprehensive assessment of the environmental laws in Singapore, as well as the inadequacies and challenges ahead. Part I covers the laws pertaining to various forms of pollution, including air pollution, water pollution, soil contamination, and pollution in the marine environment. Part II concerns nature conservation and management. In particular, Chapter 2 examines the laws protecting flora and fauna in nature reserves, national parks, public parks and other designated areas. Chapter 3 examines the laws providing for the general protection of wildlife, including trade in endangered species and the protection of biological diversity. The book also includes a selected bibliography containing further references. *(See Lye Lin-Heng & Rose-Liza Eisma-Osorio, "Regulatory measures on access and benefit-sharing for biological and genetic resources: national and regional perspectives from the Philippines, Singapore and ASEAN", cited below, for updated and detailed information on conducting research on Singapore's biological resources.)*

Neo, Boon Siong, June Gwee & Candy Mak, "Case study 1: Growing a city in a garden" in June Gwee, ed, *Case Studies in Public Governance: Building institutions in Singapore* (Oxon and New York: Routledge, 2012).

The first author is a Fellow with the Singapore Civil Service College. The second author is the Principal Researcher with the Centre for Governance and Leadership, Singapore Civil Service College. The third author was a Senior Executive with the Centre for Organisation Development, Singapore Civil Service College. This chapter is part of a compilation of Singapore public sector case studies, which were originally written to train public officers and public sector leaders. It is meant to present an objective account for class discussion and does not critique the policies and governance approaches taken. In this chapter, the authors trace the five-decade journey of greening Singapore and the shift in vision from being a Garden City to a City in a Garden. Part I studies the process of developing gardens, beginning from envisioning the garden city to present-day policies on skyrise greenery and the Community in Bloom community gardening programme. Part II delves into the development of key institutions, such as the Garden City Action Committee, the Parks and Recreation Department, NParks and the Urban Redevelopment Authority. It shows how their work enabled the development of the gardens.

Ong, Burton, Lye Lin-Heng & Joseph Chun, "Regulating International Trade in Endangered Species—Transshipments of *CITES*-listed Species Via Singapore" (2016) *Singapore Journal of Legal Studies* 277, online: <https://law.nus.edu.sg/sjls/articles/SJLS-Sep-16-277.pdf>.

The first was previously a co-director of APCEL. This article examines a Singapore District Court decision concerning key provisions of the *Endangered Species (Import and Export) Act* (Cap 92A, 2008 Rev Ed). The facts of the case involved charges brought against a local trading company and its director for importing 30,000 rosewood logs, a scheduled species, into Singapore. This article argues for a purposive construction for these provisions that furthers Singapore's implementation of its obligations as a party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973 ("**CITES**"). In addition, it highlights the need for greater international cooperation and coordination in implementing their respective national legal frameworks. (*Since the publication of this article, the Prosecution successfully appealed against the District Court's second decision to acquit both defendants. See the High Court decision of Public Prosecutor v Wong Wee Keong and another appeal [2017] SGHC 65. In August 2017, it was reported that the Court of Appeal granted leave to the defendants to refer questions of law of public interest.*)

Puthia, Manoj Kumar, Peter Ng Kee Lin & Ruth O'Riordan, "Problem of Marine Invasive Species and Their Impact on Singapore Waters" in Lye Lin-Heng et al, eds, *Sustainability Matters: Environmental Management in Asia* (Singapore: World Scientific Publishing Co. Pte. Ltd, 2010) 279.

This was one of the best research papers from the 2002/2003 batch of the NUS Masters in Environmental Management graduates. It studies the status of invasive marine species in Singapore waters, with a focus on ship-mediated introduction of alien species. It points out that there were no regulations on the discharge of ballast water or the introduction of invasive species into Singapore waters, and that existing legislation to prevent the introduction of new species were concerned with a few freshwater species and did not protect the marine environment. Given that studies showed that Singapore was particularly vulnerable to the introduction of marine invasive species, there is a need to establish legislation to prevent their introduction. However, at the time, Singapore lacked baseline information on its marine biodiversity and was unable to evaluate the situation. It proposes that Singapore act proactively as several countries have unilaterally adopted regulations to address this issue. (*Readers should note that amendments were passed in 2017 to the Prevention of Pollution of the Sea Act (Cap 243) to give effect to the International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004. Among the amendments made was a prohibition against the discharge of ballast water or sediments from any ship into Singapore waters, save in accordance with ballast water management set out in section 34.*)

Tan, Melissa BN & Hugh TW Tan, *The Laws Relating to Biodiversity in Singapore* (Singapore: Raffles Museum of Biodiversity Research, 2013), online: <http://lkcnhm.nus.edu.sg/app/uploads/2017/06/biodlawsgp-2.pdf>.

The first author was an associate member of APCEL. The second author is the senior systematic botanist from the Department of Biological Sciences, NUS who teaches plant morphology, horticulture and Singapore's natural heritage. This e-book examines Singapore's laws relating to animals, plants, and other non-human organisms. The topics covered are wide-ranging, including the laws on nature conservation (which are also discussed in the other publications cited in this bibliography), animal cruelty, the keeping of pets, prohibited plants, vermin control, the use of animals in scientific experiments, and the treatment of animals involved in road accidents.

V. SINGAPORE: OTHER SECONDARY MATERIALS

Davison, GWH, PKL Ng & Ho Hua Chew, eds, *The Singapore Red Data Book: Threatened Plants and Animals of Singapore*, 2d ed. (Singapore: Nature Society (Singapore), 2008).

The editors of this book were a conservation officer from the National Parks Board, the chairman of the Conservation Committee of the Nature Society (Singapore), and the director of the Raffles Museum of Biodiversity Research (the predecessor of the Lee Kong Chian Natural

History Museum) and Tropical Marine Science Institute in NUS respectively. The book was compiled from the voluntary efforts of numerous expert contributors. It features coloured photographs and descriptions (including information on threats, scientific interest and potential value, and conservation measures) for each threatened species. Compared to the first edition of this book which was published in 1994, this edition includes more taxonomic groups and also discusses the nature conservation laws in Singapore.

Davison, Geoffrey, Ria Tan & Benjamin Lee, *Wild Singapore* (Oxford, England: John Beaufoy Publishing, 2012).

This book was written by wildlife experts, including the creator of the popular WildSingapore website (www.wildsingapore.com). It was published in association with the National Parks Board. It begins with an account of Singapore's "wild history", followed by an essay on its biogeography and the state of its biodiversity. The next six chapters focus on the different natural habitats in Singapore and the fauna and flora found inside. A special feature is the "Guided Tour" segment of each chapter, which introduces readers to specific sites where they can observe the habitats discussed. The last chapter contemplates Singapore's "wild future" and discusses, among other things, the policy frameworks in place and the persistent challenge of competing land uses. The text is highly readable and informative, with vivid photographs of wildlife and natural habitats interspersed throughout the book.

Lee Kong Chian Natural History Museum, *Lee Kong Chian Natural History Museum* (Singapore: 2017), online: <http://lkcnhm.nus.edu.sg>.

The Lee Kong Chian Natural History Museum is Singapore's only natural history museum. It inherited the Raffles natural history collections from its predecessor, the Raffles Museum of Biodiversity Research. Its website provides links to several free resources, including the Biodiversity of Singapore (a pictorial index and digital reference collection of Singapore's biodiversity), the Digital Nature Archives of Singapore (a searchable online database on natural history), the Dead Animal Records in Singapore, as well as various journals and museum publications.

National Parks Board, *Biodiversity and Environment Database System* (Singapore: National Parks Board, 2017), online: <https://biome.nparks.gov.sg>.

The Biodiversity and Environment Database System (BIOME) is one of the two biodiversity databases that are hosted by NParks. It is a repository of biodiversity and environment-related data contributed by various parties, including government agencies, educational institutions, and non-governmental organisations. Examples of the data collected include research reports, publications, journal articles, and news related to biodiversity and environment of Singapore. BIOME also allows registered users to submit records of sightings online, access maps, and search for data using keywords and locality. A key aim of this database is to assist the Government, researchers, and consultants on matters relating to biodiversity and environment.

Ng, Peter KL, Richard T Corlett & Hugh TW Tan, eds, *Singapore Biodiversity: An Encyclopedia of the Natural Environment and Sustainable Development* (Singapore: Editions Didier Millet, 2011).

This book is Singapore's first comprehensive reference to nature in Singapore. It is the combined effort of 65 contributors from the academia, government institutions, and environmental activist groups. The first part comprises several essays on a wide range of issues relating to Singapore's natural environment, such as the different ecosystems in Singapore, threats to Singapore biodiversity, past and present biodiversity research, public policy and strategy, non-governmental organisations and the nature community, commercial biodiversity, biodiversity education, legal protection for nature in Singapore, and sustainable development. The second part is an A–Z directory covering more than 40,000 species of organisms in Singapore. Written in an engaging manner and packed with coloured photographs, illustrations and maps, it is suitable for a wide audience, including readers who lack a scientific background.

Tan, Hugh TW et al, *The Natural Heritage of Singapore*, 3d ed (Singapore: Pearson Education South Asia Pte Ltd, 2010).

This book was written by academics at the Department of Biological Sciences, NUS, who have extensive research experience in terrestrial and aquatic ecology, botany, zoology and conservation biology of Singapore and Southeast Asia. It offers a comprehensive but readable

introduction to understanding the natural history of Singapore. It is packed with coloured photographs and maps. At the end of each chapter, the authors provided a list of references for the readers to delve more deeply into the subject matter. The majority of the chapters concern the different types of habitats in modern day Singapore, which range from primary vegetation to managed habitats (i.e. those managed by periodic human intervention). The remaining chapters focus on the human impact and conservation in Singapore, the significance of biodiversity in Singapore's context, and perspectives and challenges in preserving the natural heritage of Singapore.

VI. ASEAN: OFFICIAL INSTRUMENTS AND PUBLICATIONS

Agreement on the Conservation of Nature and Natural Resources (Kuala Lumpur, 9 July 1985), online: <http://environment.asean.org/agreement-on-the-conservation-of-nature-and-natural-resources/>.

This agreement is one of the few ASEAN environmental hard law instruments and the only one in relation to nature resources. It recognises the importance of conserving natural resources for present and future generations, the inter-linkage between conservation and socio-economic development, and the necessity of international co-operation in attaining these goals. It covers a wide range of issues in its eight chapters, including Conservation and Development, Conservation of Species and Ecosystems, Conservation of Ecological Processes, Environmental Planning Measures, National Supporting Measures, International Cooperation, and International Supporting Measures. This agreement has yet to come into force because only three of the six signatory member states have ratified it. The remaining member states are Brunei, Malaysia and Singapore. *(This agreement was drafted with the technical assistance of the International Union for Conservation of Nature's Centre for Environmental Law. Emeritus Professor Koh Kheng Lian has suggested that the agreement was perhaps too forward-looking at the time. As a result of subsequent biodiversity-related conventions, such as the Convention on Biological Diversity 1992, its continued relevance has also been questioned. For further commentary, see Koh Kheng Lian's articles, "Regional biodiversity collaboration—the ASEAN approach" and "Asian Environmental Protection in Natural Resources and Sustainable Development: Convergence Versus Divergence", both of which are cited below.)*

ASEAN Centre for Biodiversity, *ASEAN Biodiversity Outlook* (Philippines: ASEAN Centre for Biodiversity, 2010), online: <http://environment.asean.org/wpfb-file/asean-biodiversity-outlook-pdf/>.

This report is the flagship publication of the ASEAN Centre for Biodiversity. It was published in collaboration with the 10 ASEAN Member States. In 2002, the parties to the CBD, which include the ASEAN Member States, committed themselves to the 2010 Biodiversity Target ("the achievement by 2010 of a significant reduction in the current rate of biodiversity loss at the global, regional and national levels as a contribution to poverty alleviation and to the benefit of all life on earth"). This report captures the progress made by the ASEAN Member States and assesses the status of biodiversity in the region. Section II confirms that ASEAN, like the rest of the world, has been losing biodiversity at an alarming rate across various ecosystems. Meanwhile, as set out in Section III, the drivers of biodiversity loss continue to intensify. Section IV features the regional initiatives in biodiversity conservation, including the ASEAN Wildlife Enforcement Network. Section V urges the ASEAN region to work harder towards achieving regional biodiversity targets, highlighting the need to, among other things, integrate biodiversity in the national development process, and support the adoption of access and benefit-sharing regime in the region. Section VI lays down the biodiversity outlook beyond 2010. *(The ASEAN Centre for Biodiversity published a second edition in 2017 entitled the "ASEAN Biodiversity Outlook 2", which is cited below.)*

ASEAN Centre for Biodiversity, *ASEAN Biodiversity Outlook 2* (Philippines: ASEAN Centre for Biodiversity, 2017), online:

http://chm.aseanbiodiversity.org/index.php?option=com_wrapper&view=wrapper&Itemid=378.

This report is the second edition of the ASEAN Biodiversity Outlook (cited above). It makes use of data from multiple sources, including the ASEAN Member States' 5th National Reports to the CBD and the ASEAN State of the Environment Report, and was developed with the support of various biodiversity experts. This edition is guided by the indicators of the Aichi Biodiversity Targets and examines how the ASEAN Member States responded to the main drivers of biodiversity loss identified in the first edition. (*The Strategic Plan for Biodiversity 2011–2020, including its Aichi Biodiversity Targets, was adopted by the parties to the CBD following their failure to meet the 2010 Biodiversity Target.*) Chapter 1 summarises self-assessments reported in the 5th National Reports. Chapter 2 considers the actions taken to conserve ecosystems and species in two parts: the first part focuses on the state of major habitats; and the second part focuses on issues cutting across biodiversity issues and concerns, such as taxonomy, access and benefit sharing, wildlife conservation, invasive alien species, and climate change. Chapter 3 sets out ASEAN's priority actions to achieve the Aichi Biodiversity Targets and other priority areas of cooperation. This includes the ASEAN Heritage Parks programme and biodiversity information management. The final chapter summarises key actions and recommendations to accelerate regional efforts to achieve the Aichi Biodiversity Targets by 2020 and beyond. It mentions upcoming regional plans, including the ASEAN Strategic Plan on Environment and the ASEAN Vision 2025.

ASEAN Centre for Biodiversity, *Biodiversity Information Sharing Service (ASEAN Clearing House Mechanism)* (Laguna, Philippines: ASEAN Centre for Biodiversity, undated) online:

<http://chm.aseanbiodiversity.org/>.

The ASEAN Clearing-House Mechanism (CHM) is a flagship programme of the ASEAN Centre for Biodiversity, which aims to contribute to science-based decision-making for biodiversity conservation in Southeast Asia and to support the ASEAN Member States in meeting their reporting requirements to multilateral environmental agreements, particularly the CBD. The site provides a wide range of services, information and capacity-building tools, such as a species database with almost 34,000 records, a regional Redlist, a database of invasive and potentially invasive alien species from the ASEAN region, and an interactive mapping tool that shows species in ASEAN Protected Areas. The site also provides a single entry point to the national CHMs of the ASEAN Member States, which in turn show the progress made in biodiversity conservation efforts in each country. (*Readers should note that the national CHMs are at various stages of development. To date, 5 ASEAN Member States have operational national CHM websites. See ASEAN Centre for Biodiversity, "ASEAN Biodiversity Outlook 2", cited above, for further information.*)

ASEAN Declaration on Environmental Sustainability (Singapore, 20 November 2007), online:

<http://environment.asean.org/asean-declaration-on-environmental-sustainability/>.

This declaration was adopted on the occasion of the 40th anniversary of ASEAN and the 13th ASEAN Summit in Singapore. There are three sections, namely, Environmental Protection and Management, Responding to Climate Change, and Conservation of Natural Resources. Biodiversity conservation is addressed in the last section. In this regard, the declaration makes reference to taking into account biodiversity conservation in climate change mitigation and adaptation; promoting and supporting the ASEAN Centre for Biodiversity as a regional centre for biodiversity conservation and management; strengthening efforts to implement the ASEAN Regional Action Plan on Trade in Wild Fauna and Flora 2005–2010 through mechanisms such as the ASEAN Wildlife Enforcement Network; supporting the conservation and management of ASEAN Heritage Parks; promoting conservation and sustainable management of key ecosystems; and agreeing to collectively work towards increasing the cumulative forest cover in the ASEAN region by at least 10 million hectares by 2020.

ASEAN Declaration on Heritage Parks and Reserves (Bangkok, 29 November 1984), online: <http://environment.asean.org/asean-declaration-on-heritage-parks-and-reserves/>.

This declaration was adopted by the Second ASEAN Ministerial Meeting on the Environment in Bangkok. It was signed by the then six ASEAN member states, namely, Brunei, Indonesia, Malaysia, the Philippines, Singapore and Thailand. Its objective was to assist the ASEAN governments in conserving and protecting the member states' biodiversity heritage through a regional network of areas of high conservation importance. It provided for a master plan to be drawn for each heritage park, which entailed management guidelines, research on structure and function of ecosystems and education on wilderness values. While the member states considered that individual states are primarily responsible for their respective identified heritage sites, they agreed that regional cooperation is necessary to conserve and manage these heritage parks and reserves. Certain national parks and reserves in Brunei, Indonesia, Malaysia, the Philippines and Thailand were declared as ASEAN national heritage parks and nature reserves. *(Readers may refer to Koh Kheng Lian's articles, "Regional biodiversity collaboration—the ASEAN approach" and "ASEAN Heritage Parks and Transboundary Biodiversity Conservation", cited below, for further commentary. In 2003, the current ten ASEAN member states signed the ASEAN Declaration on Heritage Parks, which is also discussed below.)*

ASEAN Declaration on Heritage Parks (Yangon, 18 December 2003), online: <http://environment.asean.org/asean-declaration-on-heritage-parks/>.

This declaration reiterates and replaces the ASEAN Declaration on Heritage Parks and Reserves, which had been signed by a smaller ASEAN in 1984 (see above). Since then, Cambodia, Lao PDR, Myanmar and Viet Nam have joined ASEAN. Appendix I lists 26 ASEAN Heritage Parks ("**AHPs**"), including the 11 that were named in the earlier declaration. It states that the list may be amended from time to time by written notification from the ASEAN Member State concerned to the ASEAN Secretariat based on a set of criteria developed by the ASEAN Senior Officials on the Environment. *(Since this declaration was made in 2003, more national protected areas have been designated as AHPs. There are currently 38 AHPs listed on the ASEAN Centre for Biodiversity's website: <https://aseanbiodiversity.org/the-ahp-programme/asean-heritage-parks/>. The ASEAN Centre for Biodiversity serves as the Secretariat of the AHP Programme and the AHP Committee.)* Like the earlier declaration, it provides that a master plan should be drawn for each heritage park and emphasises the need for common cooperation between Member States. *(Readers may refer to Koh Kheng Lian's article, "ASEAN Heritage Parks and Transboundary Biodiversity Conservation", cited below, for further commentary.)*

ASEAN Joint Statement to the Thirteenth Meeting of the Conference of Parties to the Convention on Biological Diversity (CBD COP 13) (Lao People's Democratic Republic, 6 September 2016), online: <http://environment.asean.org/wp-content/uploads/2016/10/ASEAN-Joint-Statement-to-CBD-COP-13-28th-and-29th-AS-FINAL.pdf>.

This joint statement was issued on the occasion of the 28th and 29th ASEAN Summits in Vientiane. It reaffirms ASEAN's commitment to: implement the Strategic Plan for Biodiversity 2011–2020; achieve the Aichi Biodiversity Targets; and the 2030 Agenda for Sustainable Development and its sustainable development goals. It sets out the ASEAN Member States' agreement to do several things, including accelerate efforts to effectively implement the Strategic Plan for Biodiversity 2011–2020 and contribute to the achievement of the Aichi Biodiversity Targets by 2020; increase the efficiency and effectiveness of financial support in implementing the ASEAN Member States' NBSAPs; improve actions to address the threat of invasive alien species; and support collaborative efforts to address transboundary conservation challenges including wildlife and timber trafficking.

ASEAN Secretariat, ASEAN Peatland Management Strategy 2006-2020 (Updated September 2013) (Jakarta: ASEAN Secretariat, 2013), online: <http://environment.asean.org/wp-content/uploads/2015/06/ASEAN-Peatland-Management-Strategy-2006-20201.pdf>.

This regional strategy paper is also known as the Strategy and Action Plan for Sustainable Management of Peatlands in ASEAN Member Countries. It provides a framework for stakeholders to sustainably manage, use, and rehabilitate peatlands. It was developed within the framework of the ASEAN Peatland Management Initiative and the ASEAN Agreement on Transboundary Haze Pollution. Draft of the regional strategy had been circulated since July

2004. This version incorporates changes made as a result of a review in 2012 to 2013 by the ASEAN Member States and the ASEAN Secretariat. It was adopted by the Committee to the Conference of Parties to the ASEAN Agreement on Transboundary Haze Pollution on 23 September 2013. Chapter 1 introduces peatlands in the ASEAN region. Chapter 2 sets out the regional strategy for peatland management, including detailed action plans, of which one operational objective is to promote conservation of peatland biodiversity. Chapter 3 sets out the implementation mechanisms at both regional and country level. *(Readers should note that the ASEAN Member States are undertaking assessments and/or developing national action plans for their respective peatland resources. See ASEAN Centre for Biodiversity, "ASEAN Biodiversity Outlook 2", cited above, for further information.)*

ASEAN Secretariat, *ASEAN Socio-Cultural Community Blueprint* (Jakarta: ASEAN Secretariat, 2009), online: <http://www.asean.org/wp-content/uploads/images/archive/5187-19.pdf>.

In 2009, the Heads of State or Government of ASEAN Member States pledged to achieve the ASEAN Community by 2015. In this connection, they agreed that the ASEAN Political-Security Community Blueprint, the ASEAN Economic Community Blueprint, the ASEAN Socio-Cultural Community Blueprint ("**ASCC Blueprint**") and the Initiative for ASEAN Integration Work Plan constituted the Roadmap for an ASEAN Community (2009–2015). Environmental issues feature most prominently in the ASCC Blueprint. The fourth of seven ideal Characteristics covered in the ASCC Blueprint is entitled "Ensuring Environmental Sustainability". It lists ten strategic objectives, of which the following are related to biodiversity and nature conservation: "Promoting the Sustainable Use of Coastal and Marine Environment", "Promoting Sustainable Management of Natural Resources and Biodiversity", "Responding to Climate Change and Addressing Its Impacts", and "Promoting Sustainable Forest Management".

ASEAN Secretariat, *2015 ASEAN Socio-Cultural Community (ASCC) Scorecard* (Jakarta: ASEAN Secretariat, 2016), online: <http://www.asean.org/storage/2016/04/9.-March-2016-2015-ASCC-Scorecard-1.pdf>.

The ASCC Scorecard Report was developed by the ASEAN Secretariat and the S. Rajaratnam School of International Studies. *(The background to this report can be traced to a pledge made by the Heads of State or Government of ASEAN Member States in 2009 to achieve the ASEAN Community by 2015. See ASEAN Secretariat, "ASEAN Socio-Cultural Community Blueprint", cited above.)* It is a scorecard on how far the goals, strategic objectives and targets in respect of socio-cultural pillar of the ASEAN Community have been achieved. Although it is a self-assessment tool, it is rooted in quantitative and qualitative indicators, data, and information. It generally corresponds to the Characteristics covered in the ASCC Blueprint. Under the fourth Characteristic entitled "Ensuring Environmental Sustainability", there are updates under two strategic objectives that are relevant to biodiversity and nature conservation, namely, "Promoting the Sustainable Use of Coastal and Marine Environment" and "Promoting Sustainable Management of Natural Resources and Biodiversity".

ASEAN Secretariat, *ASEAN Socio-Cultural Community Blueprint 2025* (Jakarta: ASEAN Secretariat, 2016), online: <http://www.asean.org/wp-content/uploads/2012/05/8.-March-2016-ASCC-Blueprint-2025.pdf>.

This is the next edition of the ASCC Blueprint. It builds on the earlier ASCC Blueprint to create an ASEAN Community that engages and benefit the people, and is Inclusive, Sustainable, Resilient, and Dynamic. Conservation and sustainable management of biodiversity and natural resources is listed as one of the key result areas under the "Sustainable" Characteristic. The corresponding strategic measures include strengthening regional cooperation to halt biodiversity loss and to promote sustainable management of terrestrial ecosystems, as well as supporting the full implementation of the Strategic Plan for Biodiversity 2011–2020 and its Aichi Biodiversity Targets.

Cheung Catherine PS et al, eds, *Marine Protected Areas in South East Asia* (Los Baños, Philippines: ASEAN Regional Centre for Biodiversity Conservation, Department of Environment and Natural Resources, 2002), online: <http://environment.asean.org/marine-protected-areas-in-southeast-asia/>.

This report was compiled by researchers from the Asian Bureau for Conservation and the Marine Science Institute of the University of the Philippines with input from several international experts. It is based on the country accounts that were part of the Indo Malayan Protected Areas Review, which had resulted from a workshop held by the Asian Bureau for Conservation in 1995. This report focuses on the Marine Protected Areas (“MPA”) of the nine ASEAN Member States with marine areas (i.e. all except Lao People's Democratic Republic). The introductory chapter provides an overview of the study, as well as priority actions and recommendations to strengthen MPA management, fill gaps in the MPA system, and increase regional cooperation. This is followed by country profiles. Each country profile sets out information pertaining to background facts; coastal and marine ecosystems; significant species; the legislation and management framework; the existing MPA system; proposed MPAs; an evaluation of the status, threats, and management of the MPAs; gaps identified in the MPA system; country level priority sites; and country level priority actions. The text is supplemented by detailed coloured maps, graphs and tables.

Declaration on ASEAN Post-2015 Environmental Sustainability and Climate Change Agenda (Kuala Lumpur, 21 November 2015), online: http://www.asean.org/storage/images/2015/November/27th-summit/ASCC_documents/Declaration%20on%20Post%202015%20Environmental%20Sustainability%20and%20Climate%20Change%20AgendaAdopted.pdf.

This declaration was made on the occasion of the 27th ASEAN Summit in Malaysia. It affirms ASEAN's commitment to strengthen international cooperation to move the sustainable development agenda forward, as well as to support global efforts to combat climate change and biodiversity conservation (particularly, the achievement of the Strategic Plan for Biodiversity 2011–2020 and its Aichi Biodiversity Targets). It covers several points in relation to biodiversity and nature conservation, including the ASEAN Member States' resolution to accelerate the development and implementation of the ASEAN Programme on Sustainable Management of Peatland Ecosystems (2014–2020); intensify efforts to implement the Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets; and complete ratification of the Establishment Agreement of the ASEAN Centre for Biodiversity.

VII. ASEAN: SECONDARY MATERIALS ON LAW AND POLICY

Cheong, Denise Wei-Min & Lye Lin-Heng, “CITES Legislative Implementation: Lessons from and for ASEAN Member States” in Lye Lin-Heng et al, eds, *Sustainability Matters: Environmental and Climate Changes in the Asia-Pacific* (Singapore: World Scientific Publishing Co. Pte. Ltd., 2015) 33.

This paper won the Shell Best Dissertation Award for the 2013/2014 batch of the NUS Masters in Environmental Management programme. It concerns national legislation enacted by parties to the CITES to implement the Convention and the four criteria used to evaluate such legislation (“**CITES legislative criteria**”). It argues that the scope of the CITES legislative criteria should be drawn from not only hard laws but also the soft laws that represent an agreed understanding of the terms of CITES and how they should be implemented. It compares the implementing legislation of Singapore and Malaysia with that of benchmark parties, such as Australia, New Zealand, the United Kingdom, Canada and Hong Kong. This is followed by the lessons that ASEAN Member States can draw from (a) the comparative analysis of Singapore and Malaysia's laws; and (b) the benchmark parties' laws. Finally, it makes recommendations for improving the CITES legislative criteria and for strengthening the implementing legislation of Singapore and Malaysia.

Freeland Foundation & ASEAN Wildlife Enforcement Network, *ASEAN Handbook on Legal Cooperation to Combat Wildlife Crime* (Bangkok: Freeland Foundation, 2016), online: <https://www.wildlex.org/sites/default/files/literatures/MON-090732.pdf>.

This handbook is a useful toolkit that was prepared with data and information provided by the ASEAN Member States. It seeks to establish a baseline of laws from the ten ASEAN Member States that relate to wildlife crime and, to a lesser extent, forestry and fisheries offences. The handbook is divided into two sections. The first section provides an overview of the legal framework for addressing wildlife crime in the region. It contains tables comparing various aspects of the ASEAN Member States' laws, such as the key provisions and penalties under the wildlife laws. The second section comprises the country-specific chapters, which set out an overview of the national legal framework on the investigation and prosecution of wildlife crimes. Each chapter includes a list of international conventions, treaties and agreements that the ASEAN Member State is a party to, as well as the related or relevant national laws, a list of bilateral or multilateral agreements and/or Memoranda of Understanding signed with other countries, key provisions of wildlife laws, key provisions of other national laws (e.g. penal codes, anti-money laundering laws and laws on mutual legal assistance to recover proceeds of crime), and penalties under these laws. The annexes at the end of each chapter include flowcharts on the investigation process and procedure for prosecution and sentencing, and a list of relevant national laws.

Koh, Kheng Lian, *ASEAN Environmental Law, Policy and Governance: Selected Documents (Volume I)* (Singapore: World Scientific Publishing Co. Pte. Ltd., 2009).

This is the first out of two volumes of selected instruments on ASEAN environmental law, policy and governance. This volume has two parts. Section I, which is entitled "Setting the Stage for ASEAN Environmental Cooperation, Harmonization and Integration", contains documents directly or indirectly relating to or have a real or potential impact on various aspects of the environment. It gives an overview of several mutually reinforcing and interrelated documents. The second part, which is entitled "General Legal Frameworks on the Environment", contains soft law instruments, such as programmes, strategies, plans of action, blueprints, declarations, resolutions and accords.

Koh, Kheng Lian, *ASEAN Environmental Law, Policy and Governance: Selected Documents (Volume II)* (Singapore: World Scientific Publishing Co. Pte. Ltd., 2012).

This is the second volume of selected instruments on ASEAN environmental law, policy and governance. (The first volume is cited above.) This volume compiles documents from a wide range of sectoral areas, including natural resources and biodiversity (in which nature conservation and biodiversity is covered); coastal and marine environment; water resources management; zoonotic diseases and the environment; environmental disaster management; and environmental education.

Koh, Kheng Lian, "ASEAN Environmental Protection in Natural Resources and Sustainable Development: Convergence Versus Divergence?" (2007) 4(1) *Macquarie Journal of International and Comparative Environmental Law* 43, online: <http://classic.austlii.edu.au/au/journals/MqJICEEnvLaw/2007/3.html>.

This paper considers the extent to which the ASEAN Vision 2020 on natural resources can be realised in a region that is not homogeneous. It surveys policies, strategies, programmes and plans of action to manage natural resources in the ASEAN region. It observes that the challenges encountered in formulating and implementing these instruments reflect both divergence and convergence. It describes four instances of divergence, namely, in the "ASEAN way" of decision-making, the 1985 ASEAN Agreement on the Conservation of Nature and Natural Resources, the 2002 ASEAN Agreement on Transboundary Haze Pollution, and the draft ASEAN Framework Agreement on Access to Biological and Genetic Resources. This is followed by a discussion on the instances of convergence, namely, the wide array of legal frameworks for cooperation in natural resources; common ASEAN policies and "stands" in natural resource management, programmes and plans of action on natural resource management; other soft laws on protection of natural resources; and some specific areas of cooperation. It concludes that ASEAN's efforts in managing natural resources demonstrate more of a convergence in terms of the harmonisation of policies, programmes, plans of action, strategies and guidelines, and anticipates the potential changes which the ASEAN Charter (which entered into force after publication) might bring.

Koh, Kheng Lian, "ASEAN Heritage Parks and Transboundary Biodiversity Conservation" in Nathalie J Chalifour et al, eds, *Land Use Law for Sustainable Development* (New York: Cambridge University Press, 2007) 352.

This chapter examines ASEAN's experience in developing land stewardship laws at both the national and regional level. It studies the ASEAN Heritage Parks and some ASEAN transboundary conservation areas as instances of ASEAN cooperation in land stewardship of natural resources at a regional level, which encourage the harmonisation of national laws and establish a regional conservation framework. This effectively facilitates a coordinated implementation of regional and international biodiversity instruments. Section 2 provides an overview and analysis of ASEAN Heritage Parks, including the proposal to develop a convention on ASEAN Heritage Parks. Section 3 studies ASEAN transboundary conservation and describes recent developments in this area. It includes an overview of regional and international biodiversity instruments that contain provisions governing transboundary protected areas that can form the legal basis for ASEAN Transboundary Conservation Areas.

Koh, Kheng Lian, "Regional biodiversity collaboration—the ASEAN approach" in Lye Lin-Heng & Maria Socorro Z Manguiat, eds, *Towards a "Second Generation" in Environmental Laws in Asian and Pacific Region*, Environmental Policy and Law Paper No. 48 (Gland, Switzerland and Cambridge, UK: IUCN, 2003) 123, online: <https://portals.iucn.org/library/sites/library/files/documents/EPLP-048.pdf>.

This paper examines the extent to which ASEAN's approach to biodiversity conservation goes "beyond parks". (This is reference to the traditional approach of biodiversity conservation, which involved building "fences" around "parks" to protect them from human intervention.) It starts by identifying ASEAN biodiversity instruments (both hard and soft law), followed by a description of ASEAN's governance structure in biodiversity conservation. It then examines whether ASEAN has adopted a "beyond parks" approach in ASEAN Heritage Parks, Transboundary Protected Areas and "Peace Parks". Next, this paper notes that ASEAN is incorporating the "ecosystem approach" or "ecosystem management approach" to biodiversity conservation of parks, reserves and protected areas, which will reinforce the "beyond parks" approach as it adopts a broad view of sustainable development and utilisation, as opposed to a sectoral approach. It also describes the "ASEAN way" of collaboration as "non-interventionist to the extreme", such that implementation takes place more at the national level than the regional level. This paper concludes by calling for an examination of first generation biodiversity instruments to align them with the "beyond parks" approach. (See also the author's "ASEAN Heritage Parks and Transboundary Biodiversity Conservation", cited above, which contains a useful introduction to the development of the ASEAN Declaration on Heritage Parks.)

Koh, Kheng Lian, "Transnational Illegal Wildlife Trade Plus (TIWT+) and 'Transnational Crimes and Transboundary Challenges' under the 'ASEAN Political–Security Community' Blueprint (APSC)" in ASEANAPOL Bulletin, 3d ed (16 December 2014) 28, online: <http://www.aseanapol.org/display/2014/12/16/3rd-edition-of-the-aseanapol-bulletin>.

This paper argues that the notion of the Transnational Illegal Wildlife Trade Plus (TIWT+) falls within the ambit of "transnational crimes and transboundary challenges" as set out in the "Non-Traditional Security Issues" section of the ASEAN Political Security Community Blueprint (APSC). It contrasts the approach to tackling illegal wildlife trade in the APSC with that in the ASEAN Socio-Cultural Community Blueprint and notes that it is more serious when a transboundary issue is politically securitised under the APSC. The author recommends that ASEAN should adopt an integrative strategy to combat transnational environmental crimes. This includes deploying multi-agency national police with full police powers, proactive investigative techniques, and aggressive national prosecution.

Koh, Kheng Lian & Md Saiful Karim, "South East Asian Environmental Legal Governance" in Shawkat Alam et al, eds, *Routledge Handbook of International Environmental Law* (Routledge Taylor & Francis Group, 2013) 461.

The second author is currently a senior lecturer at the Faculty of Law, Queensland University of Technology. This chapter evaluates the legal aspects of ASEAN environmental governance. It first introduces the "ASEAN way" of decision-making and questions if a bolder approach should be taken given that ASEAN has matured. This is followed by examining how the ASEAN environmental governance structure changed post-ASEAN Charter and setting out case studies on the Indonesian haze problem, the ASEAN Heritage Parks, and the ASEAN Statement on

CITES and ASEAN Wildlife Law Enforcement Network). The authors recognise that several political, policy and other challenges remain and that more needs to be done in order to realise the ASEAN Vision 2020 for a clean and green region. They suggest that the ASEAN approach should be recalibrated to adopt a policy of “flexible” or “enhanced” engagement in dealing with environmental issues of common interest, such as transboundary pollution, and call for the establishment of a fourth ASEAN Pillar specifically devoted to the environment.

- Lin, Jolene, “Tackling Southeast Asia’s Illegal Wildlife Trade” (2005) 9 Singapore Year Book of International Law 191, online: <http://www.commonlii.org/sg/journals/SGYrBkIntLaw/2005/14.pdf>.

The author is the current director of APCEL. This article examines the Thirteenth Meeting of the Conference of the Parties to CITES, the illegal wildlife trade problem and the ASEAN Statement on CITES on the Occasion of the Thirteenth Meeting of the Conference of the Parties to CITES. At the outset, it observes that wildlife trade is often characterised as an “environmental” issue (as part of biodiversity conservation policy) and accorded low priority on national policy-making agendas. It argues that doing so risks underestimating the impact of wildlife trade smuggling, which is increasingly recognised as an activity that traditional transnational criminal organisations are involved in and a possible source of terrorist funding. Against this backdrop, it commends the ASEAN Statement, a “bold initiative” targeted at disrupting the supply chain in illegal trade (particularly the high-value, large-volume international trade that involves syndicated networks of organised criminal gangs), as “a step in the right direction”. It proposes that this initiative should focus on achieving greater synergy with ongoing efforts by ASEAN to combat transnational crime. The author concludes optimistically, noting that this initiative is the first instance of regional cooperation in this area and that one of the most important links in the region’s wildlife supply chain, Vietnam, had already announced a national blueprint for tackling illegal wildlife trade.

- Lye, Lin-Heng & Rose-Liza Eisma-Osorio, “Regulatory measures on access and benefit-sharing for biological and genetic resources: national and regional perspectives from the Philippines, Singapore and ASEAN” in McManis, Charles R & Burton Ong, eds, *Routledge Handbook of Biodiversity and the Law* (Oxon and New York: Routledge, 2018) Chapter 13.

The second author is a professor of law at the University of Cebu where she has been teaching various subjects, including environmental law. This chapter was written with assistance from the Lee Kong Chian Natural History Museum, NParks, and the Biodiversity Management Bureau, Department of Environment and Natural Resources, the Philippines. It is a comparative study of the laws and procedures regulating access and benefit-sharing of genetic resources in the Philippines and Singapore. It also covers regional developments in this regard, including the establishment of the ASEAN Centre for Biodiversity, the status of the draft ASEAN Framework Agreement on Access to Biological and Genetic Resources 2000, and some of the ASEAN Member States’ views on the Bonn Guidelines on Access and Benefit-sharing 2002.

- Lyons, Youna, “Marine Biodiversity in Southeast Asia: an international law guide for marine researchers” (2013) 32 (SCS Sp Issue) Malaysian Journal of Science 333, online: <https://ssrn.com/abstract=2220581>.

This paper discusses the key international legal tools available to assist marine researchers who are documenting, monitoring or protecting marine biodiversity. It largely focuses on the CBD and the United Nations Convention on the Law of the Sea, 1982 (“**UNCLOS**”). The first part introduces the CBD and examines its application to marine biodiversity. The second part sets out the main features of UNCLOS that pertain to marine biodiversity and the implementation of the CBD in the marine context. The final part applies the observations made in the previous parts within the Southeast Asian context and discusses specific regional issues, such as the impact of disputes over maritime boundaries and the development of the scientific concept of Ecologically or Biologically Significant Areas. It concludes with some recommendations. (Readers may also refer to “*Marine Protected Areas in South East Asia*”, cited above, which includes country profiles that set out a country’s legislation and management framework, Marine Protected Area (MPA) system and evaluates the status, threats and management of the MPAs.)

Lyons, Youna, "Reviewing the Legal and Policy Implementation of ICM in ASEAN Countries: Why and How?" (2010) Centre for International Law, National University of Singapore, Working Paper, online: <http://cil.nus.edu.sg/wp/wp-content/uploads/2010/10/LegalPolicyICM-YounaLyons.pdf>.

The author is currently a Senior Research Fellow at the Centre for International Law, Faculty of Law, NUS. This paper concerns Integrated Coastal Management (ICM), which is a framework concept which seeks to manage the coastal-land interface following principles of sustainable development. Part 1 sets out the international and regional framework for ICM in the ASEAN region. Part 2 identifies internationally recognised key features of the ICM frameworks and presents ways to implement them through policy and legislation. Parts 3 and 4 delve into the approaches taken in New Zealand and Australia respectively (both countries are considered exemplary leaders in this field). Part 5 builds on the approaches in both countries, as well as on applicable international and regional instruments to identify six key components of ICM legal and policy implementation. These include general ICM principles (such as integration in monitoring and management, capacity building and taking a precautionary approach); ICM principles on coastal uses, resources and processes; and compensation mechanisms. Part 6 proposes a method to identify national legislation applicable to the management of uses of the coastal and marine environment and a framework to review such legislation.

Ong, Burton, Lye Lin-Heng & Joseph Chun, "Biological diversity conservation laws in South East Asia and Singapore: a regional approach in pursuit of the United Nations' Sustainable Development Goals?" (2016) 19(1) Asia Pacific Journal of Environmental Law 105, online: <https://ssrn.com/abstract=2847499>.

The article gives an overview of key regional developments that show a growing interest in developing a collective approach towards promoting environmental sustainability, particularly, biodiversity conservation and wildlife protection. It also identifies four themes underlying the regional approach towards developing legal and policy frameworks to address biodiversity issues. These include: (a) a clear preference for using "soft law" non-binding instruments as a mode of regional cooperation; (b) the alignment of regional cooperation efforts with the national implementation of obligations under the CBD and CITES; and (c) the large disparities in socio-economic circumstances and geo-political characteristics among the ASEAN Member States forestall the harmonisation of regional biodiversity laws in the near future. Through analysing Singapore's biodiversity and wildlife protection laws, the article seeks to demonstrate how domestic concerns and priorities shape individual ASEAN Member States' respective CBD and CITES-implementing legislation. It contends that there are elements of Singapore's framework that are potentially transplantable, particularly to cities in the region with built-up environments. Conversely, there should be correspondingly significant insights from other ASEAN Member States, though this will necessitate a more comprehensive comparative analysis of the relevant laws of the other ASEAN Member States.

Sodhi, Navjot S et al, eds, *Biodiversity and Human Livelihoods in Protected Areas: Case Studies from the Malay Archipelago* (New York: Cambridge University Press, 2008).

The late first editor was an associate professor from the Department of Biological Sciences, NUS. The second editor was a lecturer in anthropology and sociology at the University of Western Australia. The third editor is an associate professor in the Department of Sociology, NUS. The fourth editor is an associate professor at the Faculty of Law, NUS. The book is intended to be an inter-disciplinary reference book for graduate students, scientists, managers, government officials and transnational non-governmental organisations. It consists of essays by various stakeholders of protected areas (defined as reserves or national or regional parks), such as conservation practitioners, local community members, government administrators, biologists, lawyers, and policy and management analysts. Part I emphasises the biological aspects of biodiversity conservation in the Malay Archipelago (defined as including Brunei, Indonesia, Malaysia and Singapore), and provides case studies to illustrate how protected areas can be allocated, justified and better managed. Part II seeks to present the perspectives of local communities who live in or near protected areas in the Malay Archipelago. Each chapter in this part makes the case for including local people when making decisions about protected areas and conservation agendas. Part III focuses on governance issues and analyses the efficacy of the laws, policies and institutions established for protected area management in Indonesia and Malaysia.

VIII. BIODIVERSITY-RELATED CONVENTIONS AND THEIR STATUS IN SINGAPORE AND THE ASEAN REGION

	Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973	Convention on Biological Diversity, 1992	Cartagena Protocol on Biosafety to the Convention on Biological Diversity, 2000	Nagoya-Kuala Lumpur Supplementary Protocol to the Cartagena Protocol on Biosafety, 2010	Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity, 2010	Convention on Migratory Species of Wild Animals, 1979 (Bonn Convention)	Convention on Wetlands of International Importance, 1971 (Ramsar Convention)	Convention Concerning the World Cultural and Natural Heritage, 1972 (World Heritage Convention)	International Treaty on Plant Genetic Resources for Food and Agriculture, 2001 (International Seed Treaty)	International Plant Protection Convention, 1951
Brunei	✓	✓	×	×	×	×	×	✓	×	×
Cambodia	✓	✓	✓	✓	✓	×	✓	✓	✓	✓
Indonesia	✓	✓	✓	×	✓	×	✓	✓	✓	✓
Lao People's Democratic Republic	✓	✓	✓	×	✓	×	✓	✓	✓	✓
Malaysia	✓	✓	✓	×	×	×	✓	✓	✓	✓
Myanmar	✓	✓	✓	×	✓	×	✓	✓	✓	✓
Philippines	✓	✓	✓	×	✓	✓	✓	✓	✓	✓
Singapore	✓	✓	×	×	×	×	×	✓	×	✓
Thailand	✓	✓	✓	*	*	×	✓	✓	*	✓
Viet Nam	✓	✓	✓	✓	✓	×	✓	✓	×	✓

Legend: ✓ Contracting party

× Non-contracting party

* Only signed the convention/protocol