Proceedings of IUCN/WCPA-EA-4 Taipei Conference March 18-23, 2002, Taipei, Taiwan

CURRENT STATUS AND PROSPECTS OF PROTECTED AREAS IN THE LIGHT OF THE PHILIPPINE BIODIVERSITY CONSERVATION PRIORITIES

Perry S. Ong, Ph. D.

Fellow, Center for Applied Biodiversity Science, CI Science Director, Conservation International Philippines Associate Professor, Institute of Biology, UP Diliman

I. INTRODUCTION

The Philippines, the world's second largest archipelago after Indonesia, covers a land area of about $300,000 \text{ km}^2$ [1]. It is one of the 17 megadiversity countries, which between themselves contain 70 to 80 percent of global biodiversity [2]. Philippine rainforest is home to more than 1130 terrestrial wildlife species (Table 1) and between 10,000-13,000 species of plants [3] so far recorded, of which more than half are found nowhere else in the world. As such, the Philippines has also been described as Galapagos times ten [4].

It is also one of 25 global biodiversity hotspots [5, 6] with more than 97 percent of its original forest cover lost [7, 8]. In fact more original forests were lost in the last 50 years of the 20th century than what was lost in the previous 450 years combined [9]. Yet more new species are still being discovered on these islands than any other areas on earth in recent times [e.g., see 10, 11]

		No. of Endemic Species	% endemics	No. of Threatened Species	No. of Threatened Endemic Species
Amphibians	101+	79+	78%	24	24
Reptiles	258+	170+	66%	8	4
Birds	576 ¹	195+ ¹	34%	74	59
Mammals	204+ ^{1, 2}	111+1	54%	51	41
Total	1139+	555+ ¹	49%	157	128

Table 1.	Diversity, endemism and conservation status of Philippine wildlife [11, 12, 13
	14, 15, 16, 17, 18, 19, 20]

Legend: + includes new species (38 species of amphibians, 35 species of reptiles; 15 species of mammals);

- ¹ includes rediscovered species
- ² 25 species of dolphins, whales and dugong

The country's marine waters cover 2.21 M km² with a coastline of 22,450 km and an estimated 27,000 km² of coral reefs [21]. This contains exceptional marine biodiversity, among which are: (a) nearly 500 coral species of the more than 800 known coral species worldwide [22, 23]; (b) more than 2,000 species of fish (24, 25); and (c) more than 40 species of mangrove plants making the country one of the richest concentrations of marine life in the world [26, 27]. However, mangroves and seagrass beds have been reduced to 120,000 ha from 500,000 ha and only 5% of coral reefs in excellent condition, making the Philippines among the world's Marine biodiversity hotspots (28, 29].

II. THE DEVELOPMENT OF PROTECTED AREAS

Based on the Philippines' Biodiversity Strategy and Action Plan, spelled out in the report "Philippine Biodiversity: An Assessment and Action Plan" [30], three important historical events were critical in the development of protected areas system in the country. These are:

- 1) The establishment of the national parks system in the Philippines through Republic Act (R. A) 3915 on February 1,1932. This was patterned after the United States park system. In the 60 years that the system was in place, all parks in the system suffered degradation. This coincided with the commercial logging boom, which extended into illegal logging operations inside the parks and led to the formation of human settlements inside the parks.
- 2) The creation of the Protected Areas and Wildlife Bureau (PAWB) in 1987 when the Department of Environment and Natural Resources (DENR) was re-organized through Executive Order No. 192. PAWB's creation gave equal importance to conservation work as well as development work, which DENR's other bureaus, such as the Forest Management Bureau (FMB) and the Mines and Geosciences Bureau (MGB), were responsible for.
- 3) The enactment of R.A. 7586 or the National Integrated Protected Areas System Act (NIPAS) in June 1992. This was the result of a major review of the park system in the late 1980's, when it became increasingly clear that the country's National Park system failed to protect biodiversity, thus was undertaken. The NIPAS recognizes the importance of an integrated protected areas system as a effective and efficient mechanism for the conservation of the country's biodiversity. PAWB was mandated to implement the NIPAS Law.

The passage of the NIPAS Act was the result of the Integrated Protected Areas System Project (IPAS I), a constructive engagement of the government through the PAWB-DENR and Non-Government Organizations through the University of the Philippines Science Research Foundation and the Foundation for Sustainable Development, Inc. and the World Wildlife Fund-Philippine Program, with funds provided by the Japanese Government through a grant to the Philippine

Government under the administration of the World Bank. IPAS I provided the link for the socioeconomic context to the conservation of biodiversity in protected areas.

A total of 290 protected areas, of which 203 were initial components under NIPAS and another 87 others as additional components, were recognized [30]. Careful review of the data in this document revealed some errors. Furthermore, as a result of the Philippine Biodiversity Conservation Priority-setting Program (PBCPP, see later section), a new list, with 244 sites of various categories, comprised of 210 initial components of NIPAS and 34 additional components of NIPAS (Appendix 1), was arrived at provided by PAWB in coordination with the ASEAN Regional Center for Biodiversity Conservation (ARCBC). While the names of the sites have been determined, most of these areas are covered by several legal instruments and need to be reconciled, including the extent of area covered by the protected areas. The current list covers approximately 1.8M hectares of land and about 0.5M hectares of marine waters [31]. A comparison of the NIPAS sites with the identified priority sites for conservation is provided in later section.

Also, two major conservation projects were undertaken to support the implementation of the NIPAS. These were the World Bank-Global Environment Facility's (WB-GEF) Conservation of Priority Protected Areas Project and the European Union's National Integrated Protected Areas Programme (EU-NIPAP), which worked on 10 and 8 protected areas respectively. The EU-NIPAP project had been completed in 2001 while the WB-GEF CPPAP will be completed by June 2002. The impacts of both programs on the conservation of biodiversity are currently being reviewed. Initial analysis have shown that for the EU-NIPAP, not a single site that was supported managed to get congressional approval for the formal creation of a protected area, while under the WB-GEF CPPAP, the creation of four protected areas have been approved through congressional actions (see Appendix 2 about the 13 steps in the formal creation of protected areas under NIPAS).

III. ACHIEVEMENTS IN PROTECTED AREAS

After 10 years of the NIPAS, only five protected areas have been formally established through congressional actions (Northern Sierra Madre Natural Park, Mt. Kitanglad Natural Park, Batanes Protected Landscape and Seascape, Mt. Kanlaon Natural Park and the Sagay Protected Landscape and Seascape). These protected areas can now receive congressional allocations from the national budget without depending on the DENR for financial support for its operations. However, given the current budgetary constraints experienced by the Philippine government, this remains a limitation in the effective functioning of the said PAs.

One reason why only five PAs have passed congressional actions can be attributed to the daunting requirements (13 legal steps) that need to be fulfilled before one receives congressional actions (see Appendix 2).

In these formally established protected areas, a regular Protected Areas Management Board had been created, while those in various stages of processing under the NIPAS Act, interim PAMBs are in place. Despite limitations of resources and capabilities, there is increasing appreciation for the need to strengthen protected areas and local communities are persuaded to be actively involved in the work of the PAMB. The DENR is currently developing a program called "Adopt a Protected Area" with the private sector, both as a fund raising activity and as an awareness program.

IV. KEY ISSUES IN PROTECTED AREAS

No attempt will be undertaken to make a comprehensive review of the issues confronting PA work in the country. Instead these are enumerated below (some of these issues were identified as strategic actions by the PBCPP that needs to be undertaken and addressed as well):

- Lack of a national land use policy that will delineate clearly the boundaries of the forest line and other land uses including PAs.
- Implementation of the NIPAS is hampered by various national laws that are perceived or actually in conflict with the NIPAS Act. Among these are the Local Government Code of 1992, the Mining Act of 1995, Indigenous Peoples Rights Act (IPRA) of 1997, Agriculture and Modernization Act of 1997. Some conflicts involve area coverage as most of the Ancestral Domain of indigenous people and recognized under the IPRA overlaps with PAs, while other conflicts involve the appropriate land use such as mining claims in PAs.
- Lack of national constituency for biodiversity conservation in general and protected areas work in particular due to limited awareness among the general populace. The general population still fails to make the connection between the destruction (such as floods and landslides) caused by the loss of biodiversity to their daily lives
- Limited number of conservation professionals within and outside government.
- Limited number of academic programs to train conservation professionals.
- Limited management and enforcement capacity by the PAMBs and other government agencies
- -
- Limited resources to run PAMBs efficiently and effectively (boundary delineation, forest guards)
- Limited up-to-date natural science and socio-economic information that can guide the management plans of the PAMBs.

V. IMPORTANT MANAGEMENT POLICIES AND STRATEGIES

Three important management and policies that have been developed in the last three years that augur well for PA management in the country. These are:

- The completion of the Philippine Biodiversity Conservation Priority-setting Program (PBCPP), December 2001
- The passage of the Wildlife Act of 2001
- o The holding of the First National Protected Areas Congress last November, 2001

PBCPP

In 2000, the PBCPP was convened by the PAWB-DENR, CI Philippines and the Biodiversity Conservation Program of the University of the Philippines Center for Integrative and Development Studies (BCP-UPCIDS) to undertake consensus-building on the priorities and the strategy and actions needed to conserve Philippine Biodiversity. The PBCPP mobilized over 300 local and international scientists from more than 100 institutions from the government, the NGO community, the academia, the people's organizations, donor communities and the private sector. The consensus arrived at by the PBCPP are 206 of the most important biologically priority areas in the country and five strategic actions. The 206 priority areas are comprised of 170 terrestrial and inland water areas and 36 marine areas. These were then compared with the NIPAS sites (Table 2).

	Terrestrial and Inland Waters	Marine	Total
PA's proclaimed under NIPAS	35 (EH-29)	18 (EH-8)	53 (EH-37)
For Proclamation	44 (EH-25)	13 (EH 6)	57 (EH31)
Unprotected Priority Sites recommended for NIPAS or critical habitats		5 (EH-0)	96 (EH 38)
Total	170 (EH- 92)	36 (EH-14)	206 (EH 106)

Table 2.Comparison of PBCPP priority sites with NIPAS sites [21]. EH refers to
extremely high priority areas that needs urgent action within the next 5 years.

Analysis shows that more than 53% of priority areas or 96 areas have no protection at all, while of the 46% that are under NIPAS, most of these PAs need their boundaries to be redefined as the current coverage of these PAs do not encompass the extent of the priority areas. This is also true for marine priority areas, which would seem to show that while more than 86% are under NIPAS, the boundaries of these marine PAs do not encompass the extent of the priority areas.

Furthermore, 106 priority sites (92 terrestrial and inland waters and 14 marine sites) are of Extremely High (EH) importance and need urgent action within the next 5 years before they are damaged beyond a point of no return.

The PBCPP also identified five strategic actions that need to be undertaken in the particularly in the priority areas if the Philippine hotspot is to be saved. These are:

- 1) Harmonizing research with conservation needs;
- 2) Strengthening the protected areas system;
- 3) Institutionalizing innovative but appropriate biodiversity conservation approaches such as the establishment of biodiversity corridors;

- 4) Institutionalizing monitoring and evaluation systems of conservation projects and of biodiversity; and
- 5) Developing a national constituency for biodiversity conservation in the country.

Specifically, strengthening of the PA system involves the following:

- 1) Policy harmonization of international, national and local laws that hampers the implementation of the NIPAS
- 2) Make baseline information available so that proper management can be developed, implemented and monitored
- 3) Development of appropriate management schemes that will complement the NIPAS. This includes the design of biodiversity corridors that will allow for other conservation compatible land uses to complement protected areas.
- 4) Building the capability of PAMB members and other DENR personnel to effectively and efficiently managed PAs under their control.
- 5) Community participation is critical to the successful existence of PAs
- 6) The benefits from the PAs should spread to the communities, otherwise there is no incentive for people to particapate in conservation work.

These strategic actions are not either or options but needs to be undertaken simultaneously to ensure maximum impact, more so in protected areas work in the country.

Wildlife Act of 2001 (RA 9147)

The Act was signed into law by President Gloria Macapagal-Arroyo on July 30, 2001. It was the logical follow up to the revision of the National Park System through the NIPAS, yet it took almost 10 years for it to happen. Among the major provisions of the Act are the increase in penalty for violators of the act including among others the illegal trading of wildlife, introduction of exotic species and biosprospecting, the delineation of powers between the DENR, the Department of Agriculture to cover marine species and the Palawan Council for Sustainable Development to cover species found in Palawan. The Act empowers the DENR Secretary to designate critical habitats outside of the NIPAS, as long as threatened species are found and would be in coordination with the local government units and other concerned groups. The Act also empowers the DENR Secretary to use appropriate means such as purchase or expropriation of lands to protect critical habitats. This provision is critical to the implementation of the PBCPP as this will allow stopgap measures to protected priority areas not under NIPAS, until such time that the legal requirements for its inclusion in the NIPAS are met.

First National Protected Areas Congress

The First Protected Areas Congress was held last November 2001 in Davao City, with more 200 participants from all over the different PAs in the country as well as international PA workers. The Congress was convened by the PAWB-DENR, Haribon Foundation, Birdlife International, Foundation for the Philippine Environment and Conservation International Philippines. The

Congress allowed for the exchange of experiences in PA work and sharing the lessons learned in the 10 years that NIPAS was implemented. The Congress also laid down the foundations for the establishment of a PA network that will serve as a mechanism by which the partnerships developed during the Congress can be maintained in between meetings of the congress.

Taken together, the completion of the PBCPP, the passage of the Wildlife Act and the holding of the Congress were critical first steps that would guarantee that PA work will significantly contribute to the conservation of the country's biodiversity

VI. PROGRESS OF PRIORITY PROJECTS IN THE EAST ASIA REGIONAL ACTION PLAN

In response to the Regional Action Plan for Protected Areas in East Asia, the Philippines (government, non-government organizations, academe and the private sector) has undertaken the following:

- a. A directory of conservation professionals and organizations in protected areas is now nearing completion as a result of the Philippine Biodiversity Conservation Priority-setting Program and the First National Protected Areas Congress, which will be distributed freely as part of the PBCPP products in the form of a CD and through the web.
- b. The DENR, the agency responsible for Protected Areas, and the Dept. of Tourism (DOT), the agency responsible for tourism activities in the country, has jointly created a national committee to oversee ecotourism activities in the country. The New Zealand government has provided a grant to develop eco-tourism guidelines in general and in protected areas in particular;
- c. In the National Biodiversity Assessment, Strategy and Action Plan (1997), a financial investment strategy for biodiversity conservation work and protected areas management. The setting up of the Integrated Protected Areas Fund (IPAF) for each PA has led to 75% of the revenues generated being returned to the PA where it originated.
- d. The holding of the First National Protected Areas Congress last November 2001 was a major breakthrough in ensuring that experiences in PA work in the country is continually exchanged and nurtured. This also laid down the condition for the establishment of a Protected Areas Network that will continue exchanges of experiences between PAs and provide support for each other's work.
- e. The identification of 206 priority areas through the PBCPP, of which 96 areas have no protection at all and the consensus behind these priorities, together with the five strategic actions are critical inputs towards a rationale program in the country that will conserve biodiversity.

VII. CONCLUSION

The Philippines' remaining biodiversity and the ecosystems that support it are under tremendous threats. Extractive industries such as logging and mining have destroyed most of the forests. High human population density and growth rate [32] further put enormous pressure on its survival. In

turn, rainforests have been converted to agriculture and plantations to augment the lack of land to support a growing population. In addition, cyanide and dynamite fishing, along with rapid development in coastal areas, destroys coral reefs and mangroves.

Conservative land and resources-use trend projections indicate that profound degradation of the country's biogeographic regions will occur in approximately 10-15 years. It is predicted that the Philippines would be one of the very first country in the world to experience environmental collapse and a mass species extinction spasm which led several authors to write off the country as being damaged beyond repair [33, 34]. However, we firmly believe that there is a small window of opportunity of between 10-15 years to reverse this trend before it reaches a point of no return. But decisions have to be made now and actions have to be undertaken swiftly and without delay for this small window of opportunity to be realized.

Attention should be given to improve the management of the 110 priority areas that are under various stages of being proclaimed as protected areas and ensure that these PAs would cover the right areas. On the other hand, measures should be undertaken to protect the 96 priority areas that are not any conservation management system and subject to abuse. As a stopgap measure, the DENR secretary under the Wildlife Act of 2001 can declare these areas as critical habitats, while working for the inclusion of suitable and appropriate areas under NIPAS. Protected Areas management needs to be strengthened and other appropriate conservation approaches such as biodiversity corridors be developed around PAs.

Hence, protected areas will continue to play a critical role in providing the country's threatened biodiversity a refuge for it to escape, be nurtured and be rehabilitated. Protected areas will form the core of a string of biodiversity corridors across the archipelago that will provide sanctuary and hope for the country's biodiversity and ensure the survival of Filipinos as a people.

VIII. ACKNOWLEDGEMENTS

I would like to acknowledge the assistance of Ruth Grace Rosell-Ambal, Melizar Valenzuela and Joy Navarro from CI's PBCPP staff, Wilfrido Pollisco, Theresa Mundita Lim, Norma Molinyawe, Victorino Mendoza and Irwin Ambal from the DENR's Protected Areas and Wildlife Bureau, John MacKinnon and Gregorio Texon and Yasmin Callosa-Tarr from the ASEAN Regional Center for Biodiversity Conservation, Annabelle Plantilla from Haribon Foundation for the Conservation of Nature and Natural Resources and Christie Nozawa of Birdlife International, Mohamed Bakarr and Gustavo Fonseca from the Center for Applied Biodiversity Sciences of CI, who provided critical information and resources that made this paper possible.

IX. REFERENCES

- [1] Punongbayan, R. S., Zamora, P. M. and Ong, P. S.. 1998. *Philippine Archipelago*. Volume 1: *Kasaysayan: A History of the Filipino People*. Asia Publishing Co. Ltd., Makati, Philippines.
- [2] Heaney, L. R. and Mittermeier, R. A. 1998. Philippines. Pp. 236-249. In R. Mittermeier, P. Robles Gil, C. G. Mittermeier (eds). Megadiversity: Earth's Biologically Wealthiest Nations. Cemex, Mexico.

- [3] Merrill, E. D. 1923-26. *An Enumeration of Philippine Flowering Plants. Vol. 1-IV.* Bureau of Printing, Manila, Philippines.
- [4] Heaney, L. R. and Regalado, J. Jr. C. 1998. *Vanishing Treasures of the Philippine Rainforest*. The Field Museum, University of Chicago Press, Chicago, USA.
- [5] Myers, N., Mittermeier, R.A., Mittermeier, C.G., Kent, J., & Fonseca, G.A.B. 2000. Biodiversity hotspots for conservation priorities. **Nature** 403: 853-858.
- [6] Heaney, L. R., Ong, P. S., R. A. Mittermeier, R. A. and Mittermeier, C. G.. 1999. The Philippines. Pp. 308-315. In R. Mittermeier, N. Myers, P. Robles. Gil, C. G. Mittermeier (eds). Hotspots: Earth's Biologically Richest and Most Endangered Terrestrial Ecoregions. Conservation International and Cemex, Mexico City.
- [7] Environmental Science for Social Change. 1999. *Decline of Philippine Forests*. ESSC Inc. and Bookmark, Makati, Philippines.
- [8] Department of Environment and Natural Resources. 1998. Forestry Statistics. Quezon City, Philippines.
- [9] Ong, P. S. 2001. Philippine Biodiversity Hotspot: Opportunities and Future Directions. Pp. 386-391. In. K. N. Ganeshaiah, R. Uma Shaanker and K. S. Bawa. (eds). Tropical Ecosystems: Structure, Diversity and Human Welfare. Oxford University Press-IBH, New Delhi, India.
- [10] Brown, W. C., Alcala, A. C., Ong, P. S. and Diesmos, A. C. 1999. A new species of *Platymantis* (Amphibia: Ranidae) from the Sierra Madre Mountains, Luzon Island, Philippines. *Proceedings of the Biological Society of Washington*. **112**: 510-514.
- [11] Heaney, L. R., Balete, D. S., Dolar, M. L., Alcala, A. C., Dans, A. T. L., Gonzales, P. C., Ingle, N. R., Lepiten, M. V., Oliver, W. L. R., Ong, P. S., Rickart, E. A., Tabaranza, B. R. and Utzurrum, R. C. B. 1998. A synopsis of the mammalian fauna of the Philippine Islands. *Fieldiana Zoology*, New Series 88: 1-61.
- [12] Alcala, A. C. and Brown, W. C. 1999. *Philippines Amphibians: An Illustrated Field Guide*. Bookmark, Makati City, Philippines.
- [13] Diesmos, A. C. and the Herpetofauna Working Group. 2000. Philippine Amphibians and Reptiles: An Overview of Diversity, Biogeography and Conservation. Paper presented at the National Biodiversity Conservation Priority Setting Workshop, White Rock Hotel, Subic, Philippines.
- [14] Collar, N. J., Crosby, M. J. and Stattersfield, A. J. 1994. Birds to Watch 2: The World List of Threatened Birds. Conservation Series No. 4. Birdlife International, Cambridge, United Kingdom.
- [15] Collar, N. J., Mallari, N. A. D. and Tabaranza, B. R. 1999. *Threatened Birds of the Philippines: Haribon Foundation-Birdlife International's Red Data Book*. Bookmark, Makati City, Philippines.

- [16] Dickinson, E. C., Kennedy, R. S. and Parkes, K. C. 1991. The birds of the Philippines, an annotated checklist. *British Ornithological Union Checklist* **12**:1-507.
- [17] Mallari, N. A. D. and the Bird Working Group. 2000. Philippine Birds: Setting an Agenda for Conservation. Paper presented at the National Biodiversity Conservation Priority Setting Workshop, White Rock Hotel, Subic, Philippines.
- [18] Ong, P. S. 1998. The Philippine menagerie. Pp. 227-255. In: The Philippine Archipelago, R. S. Punongbayan, P. M. Zamora and P. S. Ong (eds.). Vol. 1 of Kasaysayan: A History of the Filipino People. Asia Publishing Co. Ltd., Makati, Philippines.
- [19] Tan, J. M. L. 1996. *A Field Guide to the Whales and Dolphins of the Philippines*. Bookmark, Makati City, Philippines.
- [20] Wildlife Conservation Society of the Philippines. 1997. Philippine Red Data Book. Wildlife Conservation Society of the Philippines and Bookmark, Makati City, Philippines.
- [21] Ong, P. S., Afuang, L. E., and Rosell-Ambal, R. G. (eds.) (in press). The Philippine Biodiversity Conservation Priorities: A second iteration of the National Biodiversity Strategy and Action Plan. Conservation International, Manila, Philippines.
- [22] Nañola, C. Jr. L., Dantis, A. L., Hilomen, V., Ochavillo, D. G. and Aliño, P. M. 2000. Philippine Reef Fish Diversity: conservation significance and concerns. [22] Gomez, E. D., Aliño, P. M., Licuanan, W.Y., and Yap, H. P. 1994. Status report of the coral reef of the Philippines. Pp. 57-76. <u>In.</u> C. R., Wilkinson, S. Sudara, L. M. Chow (eds). Proceedings of the 3rd ASEAN-Australia Symposium on Living Coastal Resources, May 16-20, 1994, Chulalongkorn University, Bangkok, Thailand
- [23] Werner, T. B. and Allen, G. R. 2000. A Rapid Marine Biodiversity Assessment of the Calamianes Islands, Palawan Province, Philippines. RAP Bulletin of Biological Assessment No. 17. Conservation International, Washington, D. C.
- [24] Herre, A. H. 1953. *Checklist of Philippine Fishes*. Research Report 20. Fish and Wildlife Service, U. S. Dept. of Interior, Government Printing Office, Washington, D. C., 977 pp.
- [25] Dela Paz, R. and Gomez, E. D. 1995. Faunal Diversity in the Marine Coastal Zone. Biodiversity Conservation Report No. 2. University of the Philippines Center for Integrative and Development Studies, Diliman, Quezon City, Philippines.
- [26] Zamora, P. M. 1995. Diversity of flora in the Philippine mangrove ecosystem. University of the Philippines Center for Integrative and Development Studies, Diliman, Quezon City, Philippines. *Biodiversity Conservation Reports* 1-92.
- [27] Calumpong, H. P. 1994. Status of mangrove resources in the Philippines. pp. 215-228. <u>In.</u> C. R., Wilkinson, S. Sudara, C. L. Ming (eds). *Proceedings of the Third ASEAN-Australia Symposium on Living Coastal Resources*, Australian Institute of Marine Sciences, Australia.
- [28] Roberts, C. M., McClean, C. J., Veron, J. E. N., Hawkins, J. P., Allen, G. R., McAllister, D. E., Mittermeier, C. G., Schueler, F. W., Spalding, M., Wells, F., Vynne, C. and Werner, T. B.

2001. Marine Biodiversity Hotspots and Conservation Priorities for Tropical Reefs. *Science* **295**: 1280-1284.

- [29] Aliño, P. M. and the Marine Working Group, 2000. Marine Biodiversity Conservation Priority Concerns. Paper presented at the National Biodiversity Conservation Priority Setting Workshop, White Rock Hotel, Subic, Philippines.
- [30] Department of Environment and Natural Resources. 1997. Philippine Biodiversity: An Assessment, Strategy and Action Plan, Bookmark, Makati, Philippines.
- [31] Mendoza, V. C. 2001. Official communications with the Protected Areas and Wildlife Bureau, Dept. of Environment and Natural Resources.
- [32] Cincotta, R.P., Wisnewski, J. & Engelman, R. 2000. Human population in the biodiversity hotspots. *Nature* 404: 990–992.
- [33] Linden, E. 1998. *The Future in Plain Sight: Nine Clues to the Coming Instability*. Simon and Schuster, New York, USA.
- [34] Terborgh, J. 1999. Requiem for Nature. Island Press, Washington, D. C., USA.

Appendix 1 (Please see file name Philippine PA.xls)

- Appendix 2. Abridged version of the legal procedures required in the establishment of Protected Areas in the Philippines based on the National Integrated Protected Areas System Act (RA 7586) and DENR Administrative Order No. 25 (1992).
- 1. Compilation of maps and technical description of Protected Areas (PA) either as initial components or additional components of NIPAS.
- 2. Conduct initial screening of areas for suitability for inclusion under NIPAS or Protected Area Suitability Analysis (PASA)
- 3. Conduct public notification and hearings about the proposed PA, results of the PASA, the NIPAS law and other relevant documents pertaining to NIPAS
- 4. Conduct initial consultation for the possible establishment of the PA.
- 5. Conduct census and registration of PA occupants to provide a basis for planning buffer zones and alternative livelihood activities.
- 6. Conduct Resource profiling on the biophysical features of the area.
- 7. Develop an Initial Protected Area Plan based on the information generated from the previous steps. The plan should include the basic rationale for the PA, proposed boundaries, and an initial designation of management zones.
- 8. Conduct public hearings of areas for inclusion under NIPAS
- 9. Conduct regional review and recommendation that would form the basis for preparing a draft Presidential Proclamation if sufficient public support for inclusion of area under NIPAS is present.
- 10. Conduct national review and recommendation that would form the basis for the Secretary to recommend to the President the areas for inclusion under NIPAS
- 11. Presidential Proclamation of the areas identified for inclusion under NIPAS that includes protection measures while Congress enacts a law creating the area as part of NIPAS
- 12. Congressional Action leads to the formal creation of the PA.
- 13. Demarcation follows after the enactment of a law establishing the protected area, using concrete monuments or other prominent physical landmarks or features.

Appendix 1. 2002 List of Protected Areas in the Philippines (modified from PAWB-ARCBC, 2002).					
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)
Cordillera Adminsitrative Region	1	Upper Agno River Basin	Resource Reserve	Atok, Bokod, Buguias, Itogon, Kabayan, Tublay, Kibungan & La Trinidad, Benguet; Hungduan & Kiangan, Nueva Viscaya	9,700.0000
				Atok, Bokod, Benguet	63,650.0000
	2	Cassamata Hill		Bangued, Abra	57.0000
	3	Mt. Data		Along the Baguio Bontoc National Road, Benguet, Ifugao and Mt. Province	5,512.0000
	4	Mt. Pulag		Buguias, Kabayan, Benguet, Kiangan, Ifugao and Kayapa, Nueva Vizcaya (R2)	11,550.0000
	5	Balbalasang-Balbalan		Balbalan, Kalinga-Apayao	
				(separate proclamation)	1,338.0000
	6	Lower Agno		Tuba, Itogon, Benguet, Baguio City	39,304.0000
	7	Busol		La Trinidad, Benguet, Baguio City	329.0000
	8	Marcos Hi-way		Tuba to Baguio City, Benguet; Agoo La Union	6,105.0000
REGION 1	9	Lidlidda	Protected Landscape	Lidlidda & Banayoyo, Ilocos Sur	1,228.0000
	10	Agoo-Damortis	Protected Landscape and Seascape	Agoo, Sto. Tomas & Rosario, La Union	10,946.9500
	11	Libunao	Protected Landscape	Sinait, Ilocos Sur	47.0000
	12	Bessang Pass	Natural Monument	Cervantes, Ilocos Sur	304.0000
	13	Bigbiga	Protected Landscape	Cadacad, Narvacan, Ilocos Sur	135.0000
	14	Sta. Lucia	Protected Landscape	Balidbed, Salcedo, Ilocos Sur	174.0000
	15	Paoay Lake		Paoay, Ilocos Norte	1,744.0000
				(separate proclamation)	340.0000
	16	Northern Luzon Heroes Hill		Santa and Narvacan, Ilocos Sur	1,316.0000
	17	Manleluag Spring		Mangatarem, Pangasinan	91.7000
	18	Tirad Pass		Cervantes, Ilocos Sur (2 proclamations)	6,320.0000

Appendix 1. 2002 List of Protected Areas in the Philippines (modified from PAWB-ARCBC, 2002).					
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)
	19	Hundred Islands		Alaminos, Pangasinan	1,844.0000
				(2 more prclamations with same coverage)	1,676.3000
	20	Ilocos Norte Metropolitan		Pasuquin, Ilocos Norte (2 proclamations)	2,815.0000
	21	Magnuang		Batac, Ilocos Norte	152.0000
	22	Santa		Santa, Ilocos Sur	25.0000
	23	Naguilian		Naguilian, La Union	90.0000
	24	Tanap		Burgos, Ilocos Norte	41.0000
REGION 2	25	Peñablanca	Protected Landscape	Peñablanca, Cagayan	192.0000
	26	Northern Sierra Madre Mountain Range	Natural Park	Palanan, Divilacan, Maconacon, San Mariano, Dinapigue, Ilagan, Tumauini, Cabagan, San Pablo, all of Isabela	undetermined
				RA 9125	287,861.0000
	27	Salinas	Natural Monument	Bambang, Kayapa & Aritao, Nueva Viscaya	undetermined
	28	Magapit	Protected Landscape	Gattaran and Lal-lo, Cagayan (2 more prclamations with same coverage)	4,554.0000
	29	Casecnan	Protected Landscape	Dupax del Norte & Sur, N.V., Madella & Dipacualao, Quirino, & Aurora, respectively	85,219.0000
	30	Palaui Island	Marine Reserve	Sta. Ana, Cagayan	
	31	Batanes	Protected Landscape and Seascape	Batanes	
				RA 8991	213,578.0000
	32	Fuyot Springs		Ilagan, Isabela	819.0000
	33	Isabela (Monte-Alto Timber Resource Corporation Parcel 1 and 2)		Echague and San Mariano, Isabela	1,095.0000
	34	Dupax		Dupax, Nueva Vizcaya	425.0000
	35	Bawa		Gonzaga and Lay-lo, Cagayan	8,955.0000
	36	Wangag		Gonzaga and Lay-lo, Cagayan	6,992.0000
REGION 3		Roosevelt	Protected Landscape	Dinalupihan & Hermosa, Bataan	1,485.0000
			· · ·	(additonal proclamation)	1.334.5900

Арр	endix	x 1. 2002 List of Protected A	reas in the Philippine	es (modified from PAWB-ARCBC, 2	2002).
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha
	38	Masinloc & Oyon Bays	Marine Reserve	Masinloc, Oyon, Zambales	
	39	Minalungao		Gapan and Gen, Tinio , Nueva Ecija	2,018.000
	40	Biak-na-Bato		San Miguel and Doña Remedios Trinidad, Bulacan	2,117.000
					330.620
					2,117.000
					658.850
	41	Capas Death March Monument		Capas, Tarlac	1.5400
	42	Mt. Arayat		Arayat and Magalang, Pampanga	3,714.030
					3,715.23
	43	Bataan		Hermosa, Orani, Samal, Abucay, Pila, Balanga, Bagac and Morong, Bataan	31,000.00
					29,853.00
					23,853.00
					23,688.00
	44	Olongapo Naval Base Perimeter		Olongapo City, Zambales	9.0400
	45	Lake Malimanga Bird and Fish Sanctuary		Candelaria, Zambales	12.3500
	46	Mariveles		Mariveles, Bataan	325.000
	47	Olongapo		Olongapo, Zambales	7,060.000
					6,335.000
	48	Angat Watershed Forest Reserve District (Metro Water District)		Montalban, San Jose, Rizal, Norzaragay, San Miguel, Penarada, Rizal, Angat, Bulacan; San Rafael, Nueva Ecija; Infanta, Quezon	55,709.10
				(2 more prclamations with same coverage)	
	49	Angat Watershed Forest, Forest Range and Watershed Management (Pilot Project Reserve)		Norzaragay, San Jose Bulacan and Montalban, Rizal	6,600.000

Appendix 1. 2002 List of Protected Areas in the Philippines (modified from PAWB-ARCBC, 2002).					
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)
	50	Talavera		Sta. Fe, Nueva Vizcaya, Carranglan, Lupao, San Jose, Pantabangan, Nueva Ecija	37,295.0000
					37,156.0000
	51	Pantabangan-Carranglan Watershed Reservation		Pantabanga, Carranglan, Nueva Ecija	84,500.0000
	52	Doña Remedios Trinidad-General Tinio		Doña Remedios, Bulacan Gen. Tinio, Nueva Ecija	20,760.0000
	53	Subic			
REGION 4-A	54	Taal Volcano	Natural Park	Talisay, Malvar, Tanauan, Laurel Agoncillo, Santa Teresita, Cuenca, Alitagtag, Mataas na Kahoy, Lipa City, Balete, San Nicolas, Province of Batangas and Tagaytay City	4.537.0000
	55	Simbahan-Talagas	Protected Landscape	Dinalungan, Aurora	1.157.4379
		Amro River	Protected Landscape	Casiguran & Dilasag, Aurora	6,470.0000
	57	Dinadiawan River	Protected Landscape	Dipaculao, Aurora	3,387.0000
	58	Talaytay	Protected Landscape	Dinalungan, Aurora	3,527.8700
		Buenavista	Protected Landscape	Mulanay, Quezon	356.0000
	60	Maulawin Spring	Protected Landscape	Guinayangan, Quezon	204.0000
	61	Hinulugang Taktak	Protected Landscape	Antipolo, Rizal	0.8900
	62	Pamitinan	Protected Landscape	Rodriguez, Rizal	
	63	Aurora Memorial Park		Bongabon, Nueva Ecija and Baler, Quezon	2,356.0000
					5,676.0000
	64	Mts. Palay-Palay-Mataas-na-Gulod		Ternate and Maragondon Cavite and Nasugbu, Batangas	4,000.0000
	65	Mts. Banahaw-San Cristobal		Majayjay, Laguna and Lucban, Tayabas, Quezon	11,113.3010
					11,113.3000
					3,539.2500

Арр	Appendix 1. 2002 List of Protected Areas in the Philippines (modified from PAWB-ARCBC, 2002).					
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)	
	66	Quezon		Atimonan, Padre Burgos and Pagbilao, Quezon	535.0800	
	67	Unnamed NP, Wildlife Sanctuary and Game Preserve (4A-1636)		Provinces of Laguna, Quezon, Rizal, Bulacan	46,310.000	
				Quezon, Rizal and	34,681.000	
				Bulacan	34,681.000	
	68	Mt. Makiling		Los Baños and Calamba, Laguna, Sto. Tomas Batangas (w/ addiitonal proclamation)	3,328.6500	
	69	Pagsanjan Gorge		Cavinti and Lucban, Laguna (w/ additional proclamation)	152.6400	
	70	Island of Alibijaban		Ragay Gulf, Bondoc Peninsula, Quezon	430.0000	
	71	Marikina		Antipolo, Montalban, Rizal	18,965.860	
	72	Mulanay		Mulanay, Quezon	26.0000	
	73	Infanta		Infanta, Quezon	384.0000	
	74	Polilio		Polilio, Quezon	130.0000	
	75	Lopez		Lopez, Quezon	418.0000	
	76	Calabgan		Casiguran, Aurora	4,803.000	
	77	Dipaculao		Dipaculao, Aurora	1,786.000	
	78	Calauag		Calauag, Quezon	328.0000	
	79	Alabat		Alabat, Quezon	688.0000	
	80	Tibiang-Damagandong		Quezon, Quezon	280.0000	
	81	Binahaan River		Pagbilao, Mauban, Quezon	465.0000	
	82	Dibalo-Pingit-Zabali-Malayat		Baler, San Luis, Aurora	4,528.000	
	83	Aurora		Baler, Quezon	430.0000	

Арр	Appendix 1. 2002 List of Protected Areas in the Philippines (modified from PAWB-ARCBC, 2002).						
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)		
	84	Palsabangan River up to Mazintuto River; Bacong River up to Sandoval Point; Palay Point up to Malunay River, Bondoc Peninsula; Bondoc River in Aurora up to Pinamutangan Point, Bontoc Peninsula; San Andres to Arena Point,Bondoc Peninsula (4A-MSFR-01)		Tayabas Bay, Quezon	undetermined		
	85	Island of Pollilo, Alabat, Cabalete, Jomalig; Patnanongan, Kalotkot, Kalongkooan, Palasan, Calabao, Icol and San Rafael (4A-MSFR-02)		Lamon Bay, Quezon	undetermined		
	86	Island of Sta. Cruz and Salomaque; Foreshoreline of Bo. Dapdap and Alao up to the mouth of Tagum River; Malinoa Creek up to Salomaque Point Foreshoreline of Bo.Cabuyagan to the eastern side of Dating Bayan River in Calancan Bay (4A-MSFR-03)		Marinduque	undetermined		
REGION 4-B		Puerto Princesa Subterrenean	National Park	Puerto Princesa, Palawan	3,901.6000		
	88	Palawan		Palawan (w/ addiitonal proclamation)	763,399.0000		
					763,399.0000		
	89	Entire Province of Palawan (4B-MSFR-01)		Palawan	undetermined		
	90	El Nido	Managed Natural Resource	Palawan			
	91	Malampaya Sound	Protected Landscape and Seascape	Taytay & San Vicente, Palawan			
	92	Tubbataha Reef		Central Sulu Sea, Palawan	33,200.0000		
	93	Calauit Island		Calauit, New Busuanga, Palawan	3,400.0000		
	94	Bacuit		Bacuit, Palawan	94.0000		

Арр	Appendix 1. 2002 List of Protected Areas in the Philippines (modified from PAWB-ARCBC, 2002).					
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)	
	95	Palawan Flora, Fauna and WFR (parcel 1)		Puerto Princesa, Palawan	4,776.0000	
	96	Palawan Flora, Fauna and WFR (parcel 2)		Puerto Princesa, Palawan	3,224.0000	
	97	Mt. Calavite	Wildlife Sanctuary	Palauan, Occ. Mindoro	140,000.0000	
	98	Mt. Guiting-Guiting	Natural Park	Cajidiocan, Magdiwang, San Fernando, Sibuyan, Romblon		
	99	Apo Reef	Natural Park	Sablayan, Occindental Mindoro		
	100	Mts. Iglit Baco		Sablayan, Occidental Mindoro and Bongabon, Oriental Mindoro	75,445.0000	
	101	Naujan Lake		Naujan, Pola and Victoria, Oriental Mindoro	21,655.0000	
	102	Calatrava, San Andres San Agustin		Calatrava, San Andres, San Agustin, Romblon	2,670.0000	
	103	Torrijos		Torrijos, Marinduque	105.0000	
	104	Sibuyan Island		Sibuyan, Romblon	undetermined	
	105	Mangrove areas along the banks of Mamburao River; Buluagan River to Lagarum River, Naujan; Mangrove area in the banks of Batel Creek, Sta. Cruz; Sablayan Point up to the mouth of Bagong Sabang River; Bo. Labangan to Calalayuan Point, Ilin Island; Mangrove		Mindoro	undetermined	
NCR	106	Quezon Memorial (Ninoy Aquino Parks and Wildlife Nature Center)	National Park	Diliman, Quezon City	197.8000	
					58.8500	
					24.0000	
	107	Luneta		Ermita, Manila	16.2400	
					16.2400	
	108	Manila Bay Beach Resort		Cities of Manila	464.6600	
					464.6600	

Арр	Appendix 1. 2002 List of Protected Areas in the Philippines (modified from PAWB-ARCBC, 2002).					
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)	
REGION 5	109	Chico Island	Wildlife Sanctuary	Cawayan, Masbate	141.0000	
	110	Malabungot	Protected Landscape and Seascape	Garchitorena, Camarines Sur	undetermined	
	111	Lagonoy	Natural Biotic Area	Lagonoy, Camarines Sur	470.0000	
	112	Naro Island	Wildlife Sanctuary	Cawayan, Masbate	141.0000	
	113	Abasig-Matogdon-Mananap	Natural Biotic Area	San Miguel , San Lorenzo Ruiz, San Vicente and Labo Cam. Norte	5,545.0000	
	114	Bongsalay	Natural Park	Batuan, Masbate		
	115	Mayon Volcano	Natural Park	Albay, Camalig, Guinobatan, Libog, Malilipot & Tabaco, Albay	5,458.6500	
	116	Bicol	Natural Park	Basud and Daet, Camarines Norte and Sipocot and Lupi, Camarines Sur	4,225.0000	
					5,201.0000	
	117	Mt. Isarog		Naga, Calabanga, Tinambac, Goa, Tigaon and Pili, Camarines Sur	10,112.3500	
	118	Caramoan		Caramoan, Camarines Sur	347.0000	
	119	Libmanan Caves		Libmanan, Camarines Sur	19.4000	
	120	Bulusan Volcano		Casiguran, Barcelona, Irosin and Juban, Sorsogon	3,673.2900	
	121	Tiwi		Tiwi, Albay		
					17,661.0000	
	122	Islands of Majaba and Napayuan (5-WA-01)		Sibuyan Sea, Masbate	18.0000	
	123	Island of Dampalit (5-WA-02)		Samar Sea in Masbate	undetermined	
	124	Catanduanes		Virac, Bato, San Miguel, Pandan, Calolbon, Baras, Catanduanes	26,010.0000	
	125	Dahican		Mambulao, Camarines Norte	44.0000	
	126	Capalonga		Capalonga, Camarines Norte	752.0000	

Арр	endix	x 1. 2002 List of Protected Ar	eas in the Philippin	es (modified from PAWB-ARCBC, 2	2002).
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)
	127	Mangrove areas from Del Pilar River to Palita Island, Bo. Salvacion and Dahican (5-MSFR-01)		Camarines Norte	undetermined
	128	Tanglar Point to Bicol River (5-MSFR-02)		Camarines Sur (Tanglar Point to Bicol River; Mangroves along the banks of Looc River; Mangrove areas of Port Tambang including banks of Tambang River and Olas River; Mangroves in Boo. Gibbous and Tarpon; Mangroves along the banks of Salon River; Mangroves	undetermined
	129	Pigbucan to Paron Point (5-MSFR-03)		Manito, Albay	undetermined
	130	Putiao River to Malbog River (5-MSFR-04)		Sorsogon (Getumbro Point up to the Municipality of Sorsogon; Malazimbo Point to the Municipality of Juban in Sorsogon Bay; Mangroves along the banks of Donsol River; Papucha Point in Sugot up to Bo.Quidolog, Prieto Diaz boundaries divided into 2 quadrants	undetermined
	131	Malaquing River up to Mabung River (5-MSFR-05)		Burias Island (Cueva Point up to Kimartines Point; Kabugao Point up to Kabalog Andang Point)	undetermined
	132	Busin Island		(near Burias Island)	undetermined
	133	Panciscan Point in Bitos Bay up to Bano Sanlay (5-MSFR-06)		Masbate (Panicijan River in Butuan Bay; Mangroves along the banks of Sta. Rosa River in San Jacinto town; Mangroves between Bo. Tamosa, Bagasico; Magdanay Point up to Taguictic Point; Bo. Magdangay to Malobago, Port Barrera; Guinabatan River up to Baris;	undetermined
REGION 6	134	Mt. Kanla-on	Natural Park	Bage, La Carlota, La Castellana, Murcia, Canlaon, San Carlos, Negros Occidental and Vallehermosa, Negros Oriental	24,557.6000

			NATIONAL CATEGORY		
REGION	NO.	NAME	(NIPAS)	LOCATION	Area (Ha.)
	135	Sibalom	Natural Park	Sibalom, Antique	7,737.0000
	136	Sagay	Protected Landscape/Seascape	Sagay, Negros Occidental	
	137	Bulabog-Putian		Dingle and San Enrique, Iloilo	854.3300
	138	Taklong Island		Guimaras, Iloilo	1,143.4500
	139	Pan-ay River		Tapaz, Capiz	4,350.0000
	140	Aklan River		Madalag and Libucao, Aklan	23,185.0000
	141	Jaluar River		Calinog, Iloilo	9,228.0000
	142	llog-Hilabangan		Himamaylan and Kabankalan, Negros Occidental	10,211.0000
	143	Dalanas River		Barbaza, Antique	8,558.0000
	144	Bago River		Talisay, Murcia, Don Salvador, Benedicto, Calatrava, Negros Occidental	61,926.0000
	145	Kabangkalan		Kabankalan, Negros Occidental	432.0000
	146	Maasin		Maasin, Iloilo	6,150.0000
REGION 7	147	Talibon	Protected Landscape and Seascape	Talibon, Bohol	undetermined
	148	Rajah Sikatuna	Protected Landscape	Carmen, Sierra Bullones, Garica Hernandez, Valencia, Dimiao, Bilar and Butuan, Bohol	9,023.0000
	149	Alburquerque-Loay-Loboc	Protected Landscape and Seascape	San Agustin, Bahi, Epo, Sta. Fe and Tagbuane, Alburquerque, Coastal Reef of Loay & Riverside of Loboc, Bohol	undetermined
	150	Apo Island	Protected Landscape and Seascape	Zamboangita, Negros Oriental	
	151	Balinsasayao Twin Lakes	National Park	Negros Oriental	
	152	Chocolate Hills	Natural Monument	Carmen, Batuan, Sagbayan, Bilar, Valencia, Sierra, Bullones, Bohol	
	153	Tañon Strait	Protected Landscape and Seascape	Cebu, Negros Occidental & Negros Oriental	

Appendix 1. 2002 List of Protected Areas in the Philippines (modified from PAWB-ARCBC, 2002).					
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)
	154	Sudion		Cebu, Cebu	696.0000
	155	Central Cebu		Balamban, Toledo, City of Cebu, Cebu	15,393.580
					11,893.580
	156	Guadalupe Mabugnao Mainit Hot Spring		Carcar, Cebu	
					57.5000
	157	Olango Island		Sta. Rosa, Danganan, Lapu, Cebu	920.0000
	158	Island of Bantayan		Visayan Sea in Cebu	undetermine
	159	Islands of Catiil, Colangaman, Lumislis,Tabangdio,Tintiman and the Islet of Pamasuan (7-WA-01)		Caniago Strait in Bohol	210.0000
	160	Islands of Budlanan; Bugatusan; Panga; Silo; Cabgan, Cancostino, Tabaon, Maagpit,and Islet of Basihan, Bugatusan, Hayaan, Inanoran, and Poom Point East of Basilan Islet (7-WA- 02)		Cebu Strait in Bohol	44.000 (othe areas undetermine
	161	Islands of Banacon; Basaan; Saac; Tambu; Bambanon (7-WA-03)		Camotes Sea, Bohol	1,053.000
	162	Loboc		Balilihan, Bilar, Batuan, Carmen, Garcia, Hernandez, Bohol	19,410.000
	163	Mananga River		Talisay, Minglanilla, Cebu City, Cebu	6,823.000
	164	Alijawan-Cansuhay-Anibongan River (7- WA-04)		Duero, Jagna, Bohol	3,630.000
	165	Buhisan		Buhisan, Cebu	630.8900
	166	Islands of Ponson, Poro, Pacihan (7- MSFR-01)		Camotes Sea, Bohol	undetermin
	167	Islands of Pamasuan, Handayan, Majanay; Islets of Banoon and Lapinig Chico; Mangrove areas east of Soom River; Pampang (7-MSFR-02)		Camotes, Bohol	undetermine

Арр	Appendix 1. 2002 List of Protected Areas in the Philippines (modified from PAWB-ARCBC, 2002).					
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)	
	168	Islands of Ambugan, Pangangan, Cabilao and Sandingan; Islet of Batas Mangrove areas east of Inabanga River to Bo. Pampang (7-MSFR-03)		Cebu Strait, Bohol	undetermined	
	169	Mangrove areas from Agio Point up to the municipality of Cambuyao; Mangrove areas from Bo. Biabas to Bo. Ondol including Bo.Condary, a nd Juagdan except the Island of Tintiman which is a Mangrove Wilderness area; Basiao Point up to Kasag Point at Lapinig		Mindanao Sea, Bohol	undetermined	
	170	Islands of Panglao; Mangrove areas from the west of Loboc; River to the municipality of Laya (7-MSFR-05)		Mindanao Sea, Bohol	undetermined	
REGION 8		Jicontol	Natural Park	Maslog, Dolores Can-Avid, Eastern Samar	7,390.0000	
	172	Mahagnao Volcano	Natural Park	Burauen & La Paz, Leyte	635.0000	
	173	Calbayog- Pan-As Hayiban	Protected Landscape	Calbayog, Samar	8,832.0000	
	174	Guiuan	Protected Landscape and Seascape	Province of Eastern Samar		
	175	Calbiga Caves	Protected Landscape	Calbiga, Wright and Hinabangan, Samar		
	176	Lake Danao	Natural Park	Ormoc, Leyte		
	177	Taft Forest (Philippine Eagle)	Wildlife Sanctuary	Municipality of Taft, Eastern Samar		
	178	Cuatro Islas	Protected Landscape and Seascape	Inopacan, Hindang neighboring islands, Leyte		
	179	Biri Larosa	Protected Landscape and Seascape	Lavazares, Rosario, San Jose Biri & neighboring Is. Northern Samar		
	180	MacArthur Landing (Imelda Park)		Palo, Leyte		
					6.7800	
	181	Kuapnit Balinsasayao		Baybay and Abuyog, Leyte	364.0000	

REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)
	182	Sohoton Natural Bridge		Basey, Samar	840.0000
	183	Tongonan Hotspring		Ormoc City, Leyte	272.0000
	184	Palompon		Palompon, Villaba, Leyte	2,392.0000
		Mangrove areas along the coastline of Dupon Bay from Sacay Point up to the mouth of Dupon River; Apali Point to Calunangan Point; Puerto Bello to Lao; Mangrove areas from Bo, Tuban and Bo. Manpagui in Santa Cruz (8-MSFR-01)		Leyte	undetermined
	186	Samar Island		North, Eastern, Western Samar	
EGION 9	187	Buug	Natural Biotic Area	Buug, Zamboanga del Sur	108.0000
	188	Siocon	Resource Reserve	Siocon, Zamboanga del Norte	612.0000
	189	Pasonanca	Natural Park	Pasonanca, Zamboanga City	10,560.0000
	190	Great & Little Sta. Cruz Islands	Protected Landscape and Seascape	Zamboanga City, Zamboanga del Sur	undetermined
	191	Jose Rizal Memorial	Protected Landscape	Dapitan City, Zamboanga del Norte	8.1510
	192	Basilan	Natural Biotic Area	Lamitan, Sumisip, Tipo2 and Isabela, Basilan	10.0000
					3,100.0000
	193	Aliguay	Protected Landscape and Seascape	Dapitan City, Zamboanga del Norte	
	194	Turtle Islands	Wildlife Sanctuary	Turtle Islands, Tawi-Tawi	
	195	Dumaquilas	Protected Landscape and Seascape	Mun. fo Malangas, Buug, Kumalarang, Lapuyan, Margo-satubig, V. Sagun, Z. del Sur	
	196	Selinog Island	Protected Landscape and Seascape	Dapitan City, Zamboanga del Norte	

Арр	Appendix 1. 2002 List of Protected Areas in the Philippines (modified from PAWB-ARCBC, 2002).					
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)	
	197	Murcielagos Island	Protected Landscape and Seascape	Labason, Zamboanga del Norte		
	198	Mt. Timolan	Protected Landscape	San Miguel, Guipos & Tigbao, Zamboanga del Sur		
	199	Mangrove areas from the municipality of Tagalisay to the mouth of Tigbao River including east of Vitali island, Tumalong Bay, Baong River and Pongao Bay (9- MSFR-01)		Sibuguay Bay, Zamboanga del Sur	undetermined	
REGION 10	200	Mt. Kitanglad	Natural Park	Talakag, Banagon, Libona, Manolo Fortich, Sumilao, Impasug-ong, Malaybalay & Lantapan, Bukidnon	31,297.0000	
	201	Mimbilisan	Protected Landscape	Balingoan & Talisayan, Misamis Oriental	72.0000	
	202	Mt. Kalatungan Range	Natural Park	Talakan, Valencia, Maramag and Pangantucan, Bukidnon		
	203	Baliangao	Protected Landscape and Seascape	Misamis Occidental		
	204	Initao		Initao, Misamis Oriental	57.0000	
	205	Mt. Malindang		Misamis Occidental	53,262.0000	
	206	Muleta-Manupali		Lantapan and Pangantukan, Bukidnon	61,500.0000	
	207	Mahoganao		Cagayan, Misamis Oriental	136.0000	
	208	Mangrove areas from Liangan River up to Lipatan River of the municipality of Lapayan; (10-MSFR-01)		Lanao del Norte	undetermined	
	209	Bo. Bagumbang to Malautan River (10- MSFR-02)		Ozamis City, Misamis Occidental	undetermined	
REGION 11	210	Mt. Apo	Natural Park	Kidapawan, Makilala, Magpet, Cotabato & Bansalan, Digos, Sta. Cruz, Davao del Sur & Davao City		

Appendix 1. 2002 List of Protected Areas in the Philippines (modified from PAWB-ARCBC, 2002).					2002).
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)
					72,813.5900
	211	Baganga	Protected Landscape	Baganga, Davao Oriental	114.8780
	212	Mabini	Protected Landscape and Seascape	Mabini, Campostela Valley	undeterminec
	213	Mainit Hotspring	Protected Landscape	Nabunturan, Campostela Valley	1,374.0000
	214	Pujada Bay	Protected Landscape and Seascape	Mati, Davao Oriental	
	215	Malagos		Guianga, Davao City	235.0000
	216	Mati		Mati, Davao Oriental	890.0000
		Mangrove areas from Baculin Point to Lakud Point; Mangrove areas from Tanuip Point in Banao to Kinablangan Island; Island of Samal (11-MSFR-01)		Davao	undetermined
REGION 12	1	Sarangani Bay	Protected Seascape	Mitum, Kiamba, Maasim, Saranggani	
	219	Allah Valley		Isulan, Banga, Surallah, Kiamba, South Cotabato	92,450.0000
	220	Lake Sebu		Banga and Kiamba, South Cotabato	9,900.0000
	221	Mt. Matutum	Protected Landscape	Tupi, Tampakan, Polomolok, S. Cotabato & Malungon, Saranggani	
	222	Sacred Mountain		Maraui City	94.0000
	223	Lake Buluan		Koronadal, Buluan, Kidapawan, North Cotabato	6,300.0000
	224	Libungan		Libungan and Alamada, Cotabato	52,820.0000
REGION 13	225	Siargao Island	Protected Landscape and Seascape	Siargao, Surigao del Norte	undetermined
	226	Agusan Marsh	Wildlife Sanctuary	San Francisco, Bunawan, De Ruela, Loreto & Lapaz, Agusan del Sur	undetermined
	227	Islands of Lamagon, Cepaya and Corbeto (13-WA-01)		Panag Bay, Surigao del Norte	undetermined

Арр	Appendix 1. 2002 List of Protected Areas in the Philippines (modified from PAWB-ARCBC, 2002).					
REGION	NO.	NAME	NATIONAL CATEGORY (NIPAS)	LOCATION	Area (Ha.)	
	228	Island of Rasa		Hinatuan Passage, Surigao del Norte	undetermined	
	229	Islands of Awasan, Cabilan, Capaquian, Sugbuhan, Tagboaba (13-WA-02)		Awasan Bau, Surigao del Norte	undetermined	
	230	Surigao		Sison, Malinao, San Francisco, Surigao del Norte	967.0000	
	231	Andanan River		Sibagat and Bayugan Agusan del Sur	15,097.0000	
	232	Cabadbaran		Cabadbaran, Agusan del Norte	16,025.0000	
	233	Islands of Dinagat, Hikdop, Sibale, Hanigad (13-MSFR-01)		Surigao Strait, Surigao del Norte	undetermined	
	234	Mangrove areas long the municipalities of Lavigan and Valencia up to Taon River of the municipality of Barcelona. Island of Masopelid, Mahaba, Condona, Bayagnan, Bilabid and Caye (13-MSFR- 02)		Surigao del Norte	undetermined	
Autonomous Region of Muslim Mindanao	235	Mado Hotspring		Awang, Cotabato	48.0000	
Mindando		Lake Butig	National Park	Butig, Lanao del Sur	68.0000	
		Lake Dapao	National Park	Pualas. Lanao del Sur	1.500.0000	
		Pantuwaraya Lake	National Park	Saguiran, Lanao del Sur	20.0000	
		Rungkunan	National Park	Ramain, Lanao del Sur	undetermined	
		Salikata	National Park	Lumba Bayambao, Lanao del Sur	undetermined	
	241	Mt. Dajo	National Park	Patikul and Talisay, Sulu	213.3500	
	242	Lake Lanao Watershed Reservation		Lanao del Sur	180,460.0000	
	243	South Upi		South Upi, Magindanao	1,894.2000	

Appendix 1. 2002 List of Protected Areas in the Philippines (modified from PAWB-ARCBC, 2002).							
REGION	NO. NAME NATIONAL CATEGORY (NIPAS) LOCATION Area						
		Mangrove areas from Malubog including up to the municipality of Sambalawan including the Island of Pisan, islands of Sagayapan, Tintauan, Sacol (ARMM- MSFR-01)		Zambonaga del Sur	undetermined		