



Universiteit  
Leiden  
The Netherlands

## **Manual on Philippine crocodile conservation.**

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Balbas, M.G.

### **Citation**

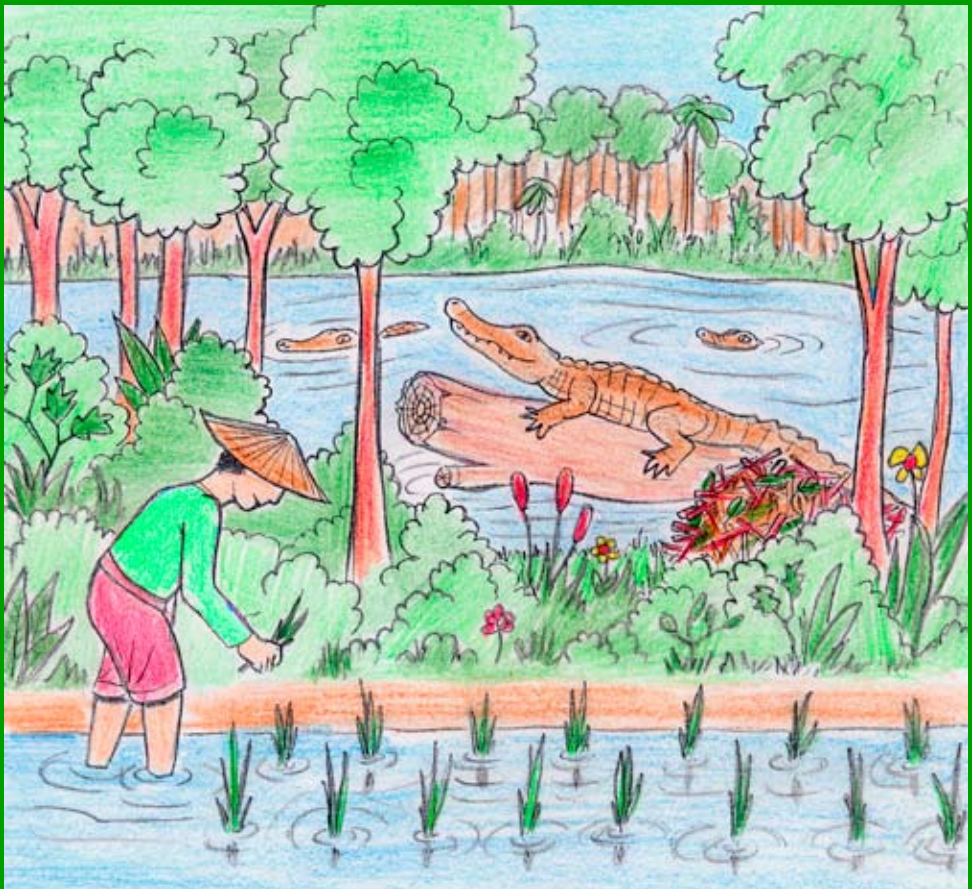
Admiraal, J., Weerd, M. van, Cauilan-Cureg, M., Ploeg, J. van der, &  
Balbas, M. G. (2009). *Manual on Philippine crocodile conservation*.  
Manilla: Mabuwaya Foundation Inc. Retrieved from  
<https://hdl.handle.net/1887/16224>

Version: Not Applicable (or Unknown)  
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Downloaded from: <https://hdl.handle.net/1887/16224>

**Note:** To cite this publication please use the final published version  
(if applicable).

# MANUAL

## ON PHILIPPINE CROCODILE CONSERVATION



This publication is a joint project of the Mabuwaya Foundation Inc. and the Cagayan Valley Programme on Environment and Development.

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Acknowledgements: This publication was made possible through the generous financial support of the National Committee of the Netherlands - The World Conservation Union (IUCN NL), WWF Netherlands INNO fund, Vicente P. Mercado of JKMSAEI / MICROLAB / CPPI and William T. Belo of Coral Farms / WILCON BUILDERS / CPPI. This manual benefited greatly from the contributions of Andres B. Masipiqueña, Jos van der Broek, Jessie Guerrero, Sammy Telan, Bernard Tarun and Willem van de Ven. The detailed comments of Jerome Miranda, Restituta Antolin, Roberto Araño, Warlito Yadao, Melchor Abiqui and Paul de Gollo have greatly improved the text. The comments and suggestions of Antonia M. Bagunu, Lydia Melanie Balayan, Merlie Balayan, May Ann Gelacio, Marilyn Gallega, Felisa T. Kalitong, Purisima T. Llapitan, Susana Paguirigan, Marilou Y. Rosella, Luz Velarde, Edmund Jose, Peggy Erika Vinarao, Jenifer Valencia and Dyan Valdepeñas during the pretest and focus group discussions helped in finalizing the design of the manual prior to mass production. We are thankful for the support of Arnold Macadangdang, Wilda Calapoto and Eso Tarun.

ISBN: 978-971-94665-0-5

Published by: Mabuwaya Foundation Inc., Cabagan, Philippines

Printed by: Boon Prints Company, Quezon City, Philippines

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2009

# **MANUAL**

**ON PHILIPPINE CROCODILE CONSERVATION**

**2009**

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# Introduction

The Philippine crocodile is the rarest crocodile in the world. It can only be found in a few localities in Northern Luzon and in Mindanao.

The purpose of this book is to provide you with a guide to successful conservation of Philippine crocodiles in the wild and the wetlands they live in.

This book gives a summary of the role of the Philippine crocodile in Philippine culture, a summary of the known scientific knowledge on the Philippine crocodile, and finally a detailed manual that is meant to provide ideas and inspiration towards successful protection of the Philippine crocodile in the wild.

# CROCODILES AND PEOPLE



## Crocodiles are part of the Filipino heritage

Even in ancient times, humans and crocodiles lived together in the Philippines as seen in the drawing of Suarez (1734). People worshipped the crocodiles and associated them with agricultural fertility and rice culture.

The crocodile was also a symbol of strength, sexuality, fierceness and power.



Suarez (1734)

In legends and myths, heroes and chiefs were depicted as crocodiles and they wore necklaces with crocodile teeth as symbols of power. Crocodile teeth were also used as amulets to protect the wearer from evil spirits and sickness.

The influence of crocodiles can be seen in ancient art, myths, folktales, motifs on clothing and in old songs.



## Crocodile beliefs of indigenous people

There are Filipinos today who still live next to wild crocodiles. For some indigenous people, crocodiles are considered reincarnations of ancestors and are respected. They tell many stories in which crocodiles play an important role.



Here are a few examples.

The Kalinga in Luzon sing ballads about the relationships between chiefs and crocodiles.

The Tagbanua in Palawan believe their ancestors have made a blood pact with crocodiles.

The Maguindanaoan hold the believe that they have crocodile ancestors.

These indigenous people do not kill the Philippine crocodile but leave it in peace. They do not consider it a pest or a threat. The crocodile is a part of their daily lives.

Thanks to the crocodile beliefs of indigenous people, crocodiles still survive in their lands today.





## Threats to the crocodiles

In ancient times, the Philippine crocodile was widely distributed throughout the country. Today, the Philippine crocodile stands on the brink of extinction. How did this happen?

### 1. Crocodile hunting

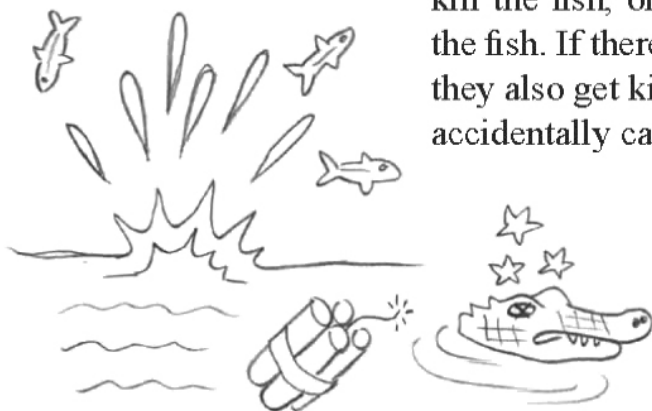
The crocodiles of the Philippines were hunted for the leather industry since the early 1900s. For the big international trade in crocodile skin, the crocodiles were hunted until they became rare.



Today, crocodiles are almost gone in the Philippines.

### 2. Destructive fishing

To increase the catch, some fishermen use destructive fishing techniques, which deplete the fish for people and crocodiles. People catch fish with dynamite and pesticides to kill the fish, or use electricity to stun the fish. If there are crocodiles nearby, they also get killed or stunned and are accidentally caught with the fish.



### 3. Loss of wetlands

The wetlands, the rivers, ponds and lakes, are the living areas of the Philippine crocodile. Farmers drain the wetlands to create more farmland so they can increase their harvest. As a result, the Philippine crocodile loses space to live. It can no longer find sufficient food or other crocodiles for mating and dies without offspring.



### 4. Crocodile killings

Many people consider crocodiles dangerous and ferocious. The crocodile is seen as a pest. When people migrate into new lands, they kill crocodiles to make the farmland safe from danger.

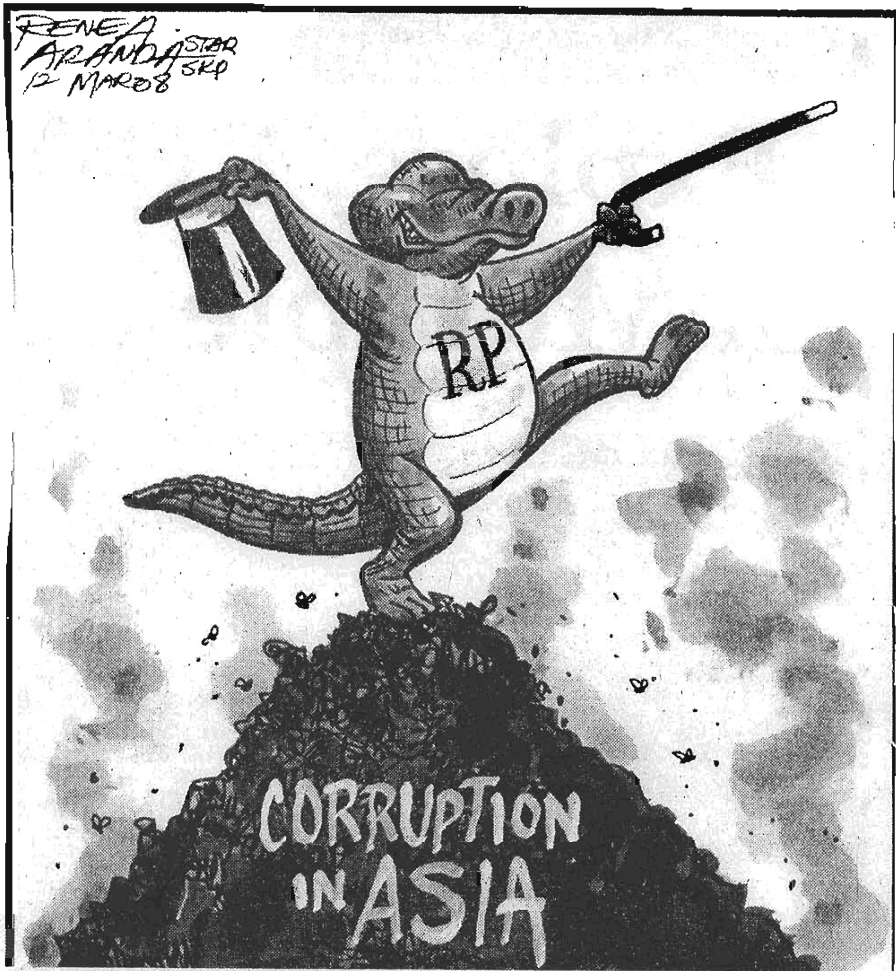


## Crocodiles in modern culture

### Negative view

Today, in popular media, crocodiles are depicted as dangerous and ferocious monsters or as bloodthirsty man-eaters. In movies, crocodiles are shown as dangerous animals.

In cartoons in the Philippines, crocodiles are equaled to corrupt government officials, selfish athletes and greedy police and customs officers.

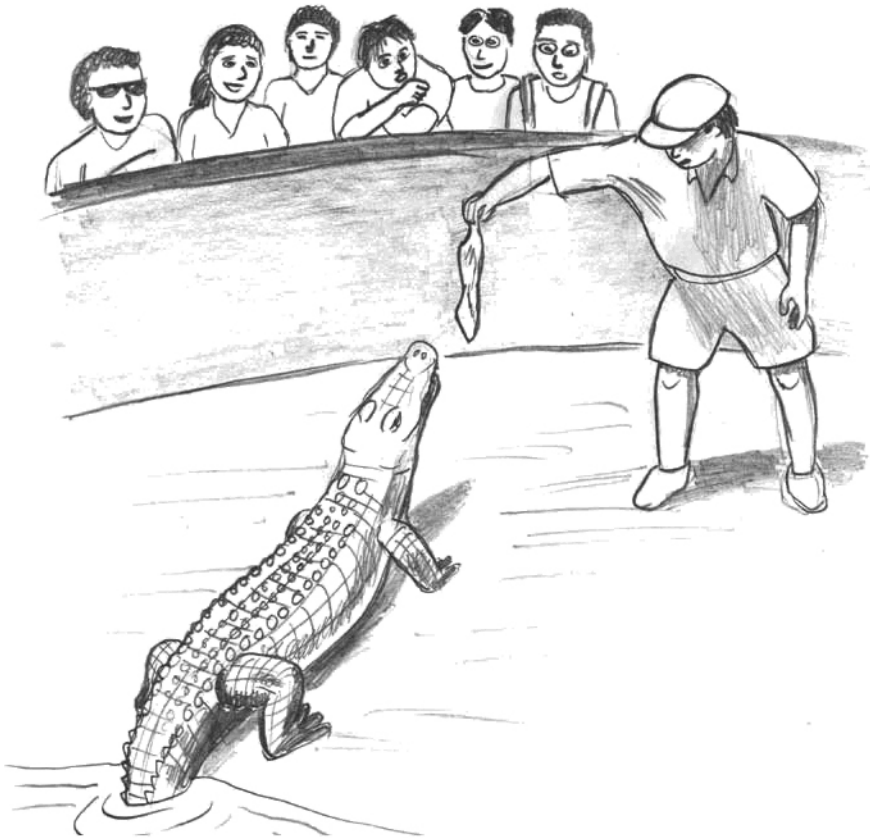


## Positive view

Not all the emotions that crocodiles evoke in us are negative. Many people are fascinated by the crocodile because of its size, appearance and power. For many Filipinos, the crocodile is still a symbol of strength and virility.

The Philippine crocodile can also be an attraction for tourists. The Palawan Wildlife Rescue and Conservation Center has successfully bred the Philippine crocodile in captivity and attracts many tourists every year.

The Philippine crocodile can only be found in the Philippines and is something to be proud of!



# CROCODILES OF THE PHILIPPINES

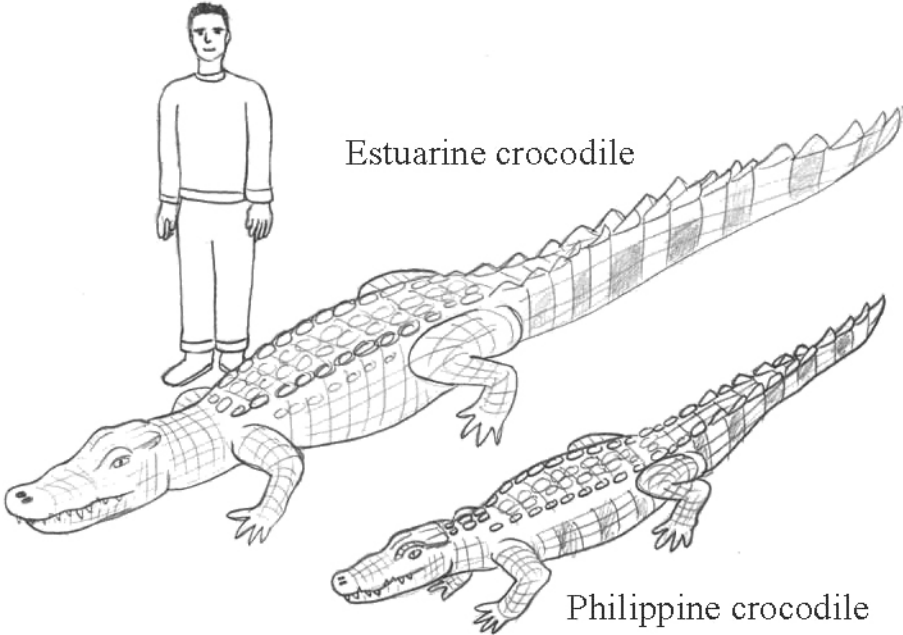


## Two species of crocodiles

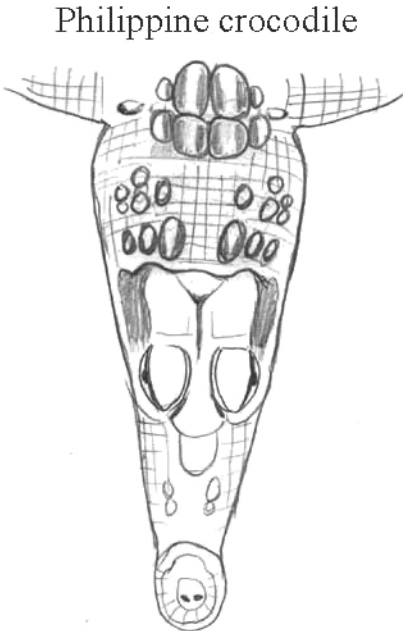
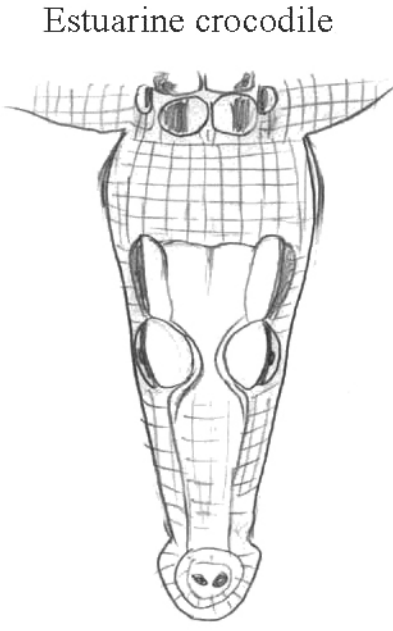
There are two species of crocodiles in the Philippines. The Estuarine crocodile and the Philippine crocodile. It is important not to confuse them. Listed below are the main differences:

	<b>Estuarine crocodile</b>	<b>Philippine crocodile</b>
Scientific name	<i>Crocodylus porosus</i> (Schneider, 1801)	<i>Crocodylus mindorensis</i> (Schmidt, 1935)
Adult size	3.5 to 7 meters	1.5 to 3 meters
Habitat	Mangroves, coastal water, large rivers and lakes	Freshwater and brackish marshes, creeks, small lakes, ponds and small rivers
Distribution	All southeast Asian countries and northern Australia.	A few localities in northern Luzon and Mindanao in the Philippines
Danger to humans	Potentially dangerous.	Not dangerous if not provoked
Appearance	Small scales in the neck.	Enlarged scales in the neck
Eggs in nest	40-60 eggs	15-30 eggs

Adult size



Scales in the neck



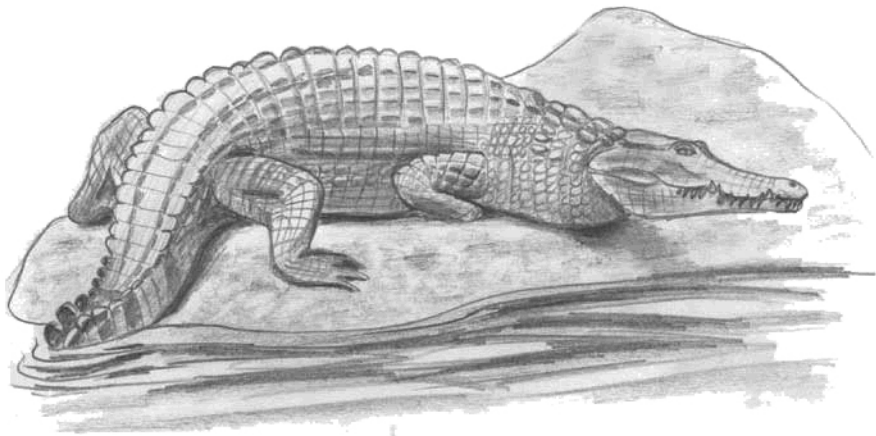


## The Philippine crocodile (*Crocodylus mindorensis*)

Critically endangered

There are less than 100 adult Philippine crocodiles left in the wild. With a population so small, a typhoon or a disease can easily wipe the species out. Their future looks bad. The crocodiles have trouble in finding a mate and in finding wetlands to live in.

Due to these reasons, the species is listed on the IUCN Red List of threatened species as *critically endangered*. Without help, they will disappear forever from the wild.

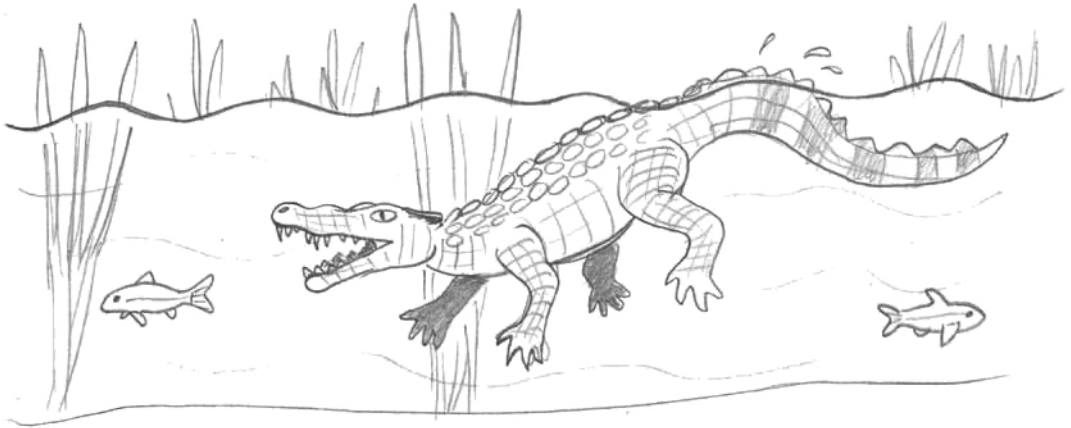


Only in the Philippines

The Philippine crocodile is endemic to the Philippines, which means the Philippines is the only country in the world where this species of crocodile lives. There are other crocodile species in the world but they are different from the Philippine crocodile. The crocodile is a part of the Philippine heritage.

## Habitat of the Philippine crocodile

The Philippine crocodile lives in wetlands. Wetlands are freshwater marshes, small lakes, ponds, small rivers and creeks. The living area of an adult Philippine crocodile, also called the home range, can be up to six kilometers of a river.



## Diet of the Philippine crocodile

Young Philippine crocodiles eat small fish, frogs, snails, shrimps and insects. Adult Philippine crocodiles eat bigger fish, water birds and small mammals.

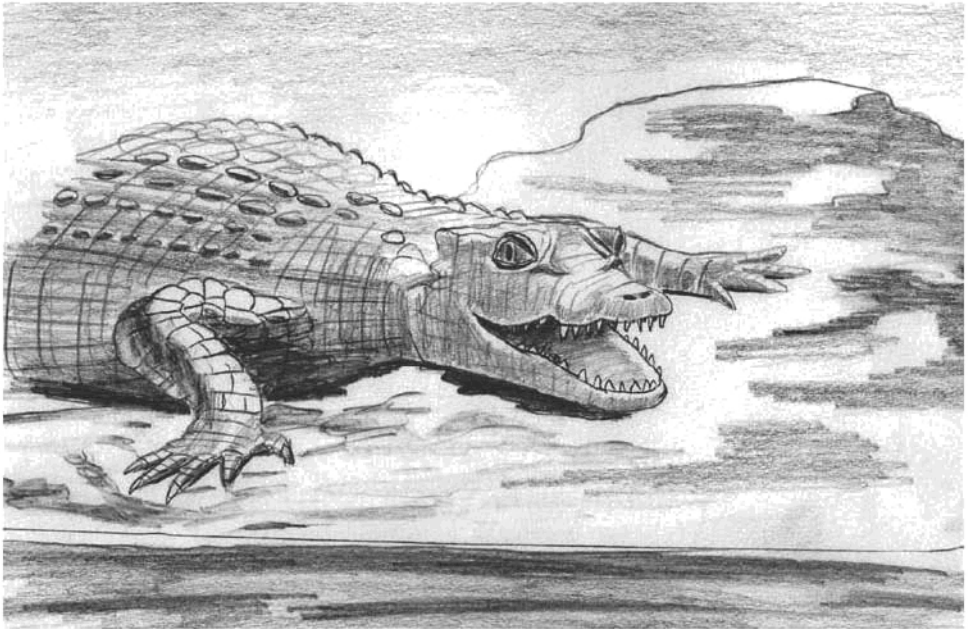
Humans are not part of the Philippine crocodile diet. Crocodiles only attack humans if they are provoked or feel threatened. Just like any other animal, crocodiles defend their nests, their territory and themselves.



## Behavior of the Philippine crocodile

The Philippine crocodile is a reptile and is *cold-blooded*, which means that if it feels no warmth, the crocodile becomes inactive. It needs to warm itself in the sun. During the day, the crocodile lays on warm rocks in the sun to increase its temperature. This is called basking.

Sometimes the crocodile opens its mouth for hours. The crocodile is not hungry, but it is cooling off through the moisture in its mouth.



The crocodile also hides and rests in underwater caves or behind boulders, or it digs a burrow in the riverbank to hide in.

The crocodile is naturally shy and does not attack people unless provoked.



## Life cycle of the Philippine crocodile

### Crocodile nests

Crocodiles make nests. A nest is made of sand, grass, leaves and twigs. A crocodile nest is usually a mound nest, which looks like a little hump of twigs and leaves. Sometimes, crocodiles make a hole nest, which is a cavity dug in the ground, filled with soil and vegetation.



A nest can be 1.5 meters to 2 meters wide and up to 2.7 meters long. A mound nest can be 50 centimeters high, while a hole nest can be 50 centimeters deep. A nest is usually situated close to the water.

## Eggs of the Philippine crocodile

Inside the nest, the Philippine crocodile lays a clutch of about 25 eggs. Then the crocodile covers the eggs with grass and twigs. A crocodile egg is white and smooth and has a hard shell. A Philippine crocodile egg is about 7 centimeters long and 4 centimeters wide.

It takes 60 to 90 days for the eggs to hatch. When the egg is ready to hatch, the baby crocodile, which is called a hatchling, breaks through the egg shell with a special egg tooth. The hatching period is from June to August in Luzon.



clutch

crocodile egg

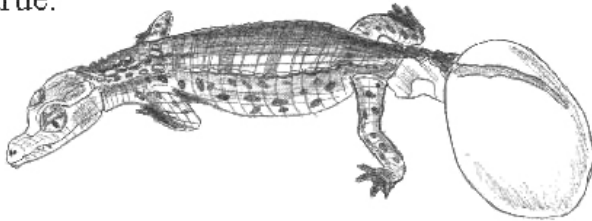


## Life stages of the Philippine crocodile

The Philippine crocodile has three life stages.

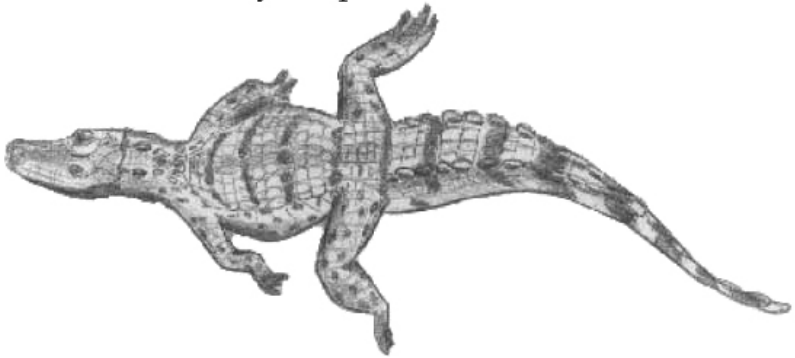
### Hatchling

A hatchling is a new-born crocodile. In Luzon, hatchlings are born at the end of the dry season. The mother sometimes carries the hatchlings to the water in her mouth. This is perhaps the origin of the story that crocodiles eat their own offspring, which is not true.



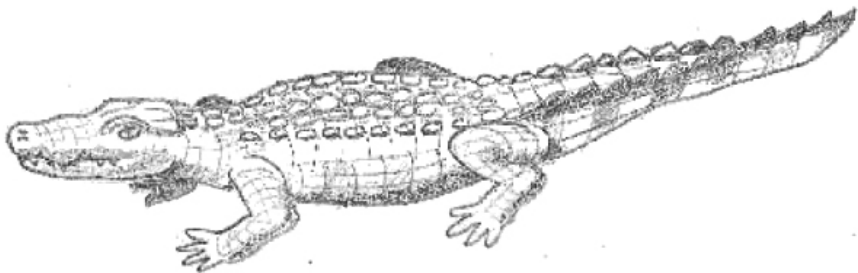
### Juvenile

Crocodiles that are less than 1.5 meters long are called juveniles. Juveniles cannot yet reproduce.



### Adult

An adult crocodile can reproduce and grow to a maximum length of about 3 meters. It can live up to 40 years.



# NATURE CONSERVATION



## Why protect the Philippine crocodile?

### The Philippine heritage

The Philippine crocodile is endemic to the Philippines. This means that the Philippines is the only country in the world where this species of crocodile can be found. The responsibility to protect it therefore lies entirely in Philippine hands. To protect the Philippine crocodile in the Philippines, is to protect it for the whole world.



A successful Philippine crocodile conservation program can attract prestige and attention from higher authorities, the media and the public at large. Crocodiles also are interesting school and research subjects. It is something to be proud of!

## The law

The Philippine crocodile is protected by law. The Wildlife Act (Republic Act 9147) strictly prohibits the killing of crocodiles.

## The crocodile keeps the wetlands healthy

Protecting the Philippine crocodile is beneficial for our own wellbeing!

The Philippine crocodile has an important role in the maintenance and balance of wetlands. The crocodile eats the weak fish, and so keeps the fish populations healthy. Also, movements of crocodiles through the water halt the growth of water plants. Without the crocodiles, the water surface becomes covered with plants and the fish start dying.

To keep the crocodile alive is to keep the wetlands healthy and suitable for our needs.



## Economic value

In many countries crocodiles are a source of income because they attract tourists. Crocodiles in their wild surroundings can become popular ecotourism sites.

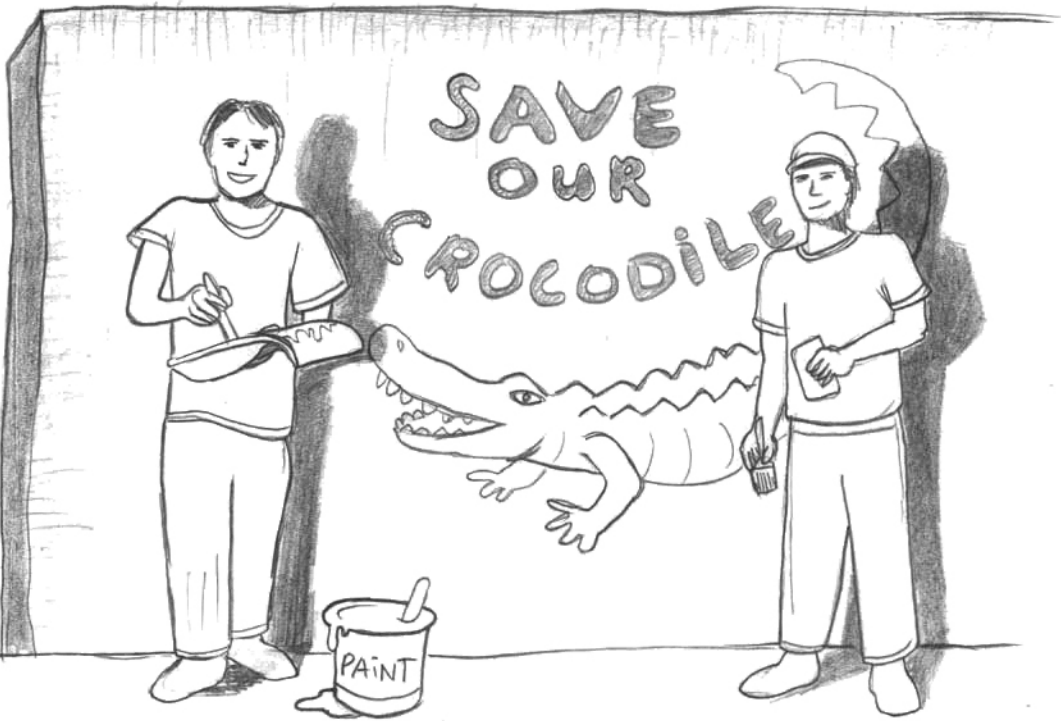
The Palawan Wildlife Rescue and Conservation Center (PWRCC) is already successful as a tourist attraction with their Philippine crocodiles. To see the crocodile in its natural surroundings is even more spectacular!



If there would be enough Philippine crocodiles in the wild, they could be harvested for their valuable skin or used as food. At this moment this is impossible because the Philippine crocodile is so rare.

## Right to live

Crocodiles survive in breeding centers, but there they are locked in a cage. The Philippine crocodile has the right to live in the wild, where it belongs. As stewards of the world, we should act thoughtfully and sensibly with other creatures around us.







## Why protect the wetlands?

We need the wetlands

Wetlands supply us with water for drinking, washing clothes and bathing. We can also use this water for irrigation of our fields and in the rivers we can fish.

If we log the trees of watersheds and change the lakes and marshes into farmland, the fish will disappear and the water that we use in daily life will dry up. If we use dynamite, electricity or chemicals for fishing, we destroy the fish stocks and pollute the water.

If we want to keep using the wetlands and keep them healthy for people and animals, the wetlands must be protected.



## The law

The Fisheries Code (Republic Act 8550) strictly prohibits the destructive use of dynamite, electricity or chemicals in fishing. The Water Code (Presidential Decree 1067) protects all freshwater wetlands and their banks and shores.



## The right to live

Wetlands are the home of many plants and animals. They depend upon the wetlands for their survival.

## WHAT CAN WE DO?

The second part of this manual is a practical guide to crocodile and wetland conservation. The ideas in this guide can be used to conserve the wetlands and crocodiles for the future.

What can we do to protect the Philippine crocodile and their habitat?

1. Awareness and education of stakeholders.

Many people have a negative attitude towards crocodiles. They consider them dangerous and a pest. We can only expect support for crocodile conservation when people know that the Philippine crocodile is not dangerous when left alone, and when they know about the reasons why the crocodile should be protected.

2. Remove the threats to crocodiles and wetlands.

To keep the crocodiles and the wetlands alive and healthy, the threats should be removed. To stop destructive fishing, logging and loss of wetlands, existing national laws can be used or new local laws can be adopted.

Besides laws, a collection of simple guidelines and knowledge is necessary for people and crocodiles to live together in peace.

This guide shall now give:

1. An overview of ways to create awareness about crocodile conservation.
2. Tips for living with crocodiles.
3. Examples of Municipal Ordinances about conservation.
4. A summary of national and international laws.



## Awareness and education of stakeholders

To protect the Philippine crocodile and the wetlands it lives in, it would be a good start to create awareness about conservation and to educate stakeholders.

We can inform people about the reasons why crocodiles and wetlands should be protected, and the different ways in which they can help in conservation.



## Community meetings

People sometimes have a negative attitude towards crocodiles. Changing attitude from negative to positive is a long process and can take many years.

The use of mass media can help in informing a large number of people, and it is a good way to keep the effort of conservation in people's minds. However, to change a negative attitude, interpersonal communication has a greater impact.

During community meetings in villages, we can talk about protecting crocodiles and wetlands. During meetings, we can discover how people feel about crocodile conservation and answer their questions.



## Other ways of communication

Here are some suggestions about educating people and bringing attention to protecting crocodiles:



### Shows during fiestas.

A cultural show or a puppet show can be organized during barangay fiestas about protecting crocodiles and wetlands. A show attracts many people of all ages and from far away places. A show lingers in people's minds and is very effective in transferring information.

To make a show more effective, the master of ceremonies can immediately follow up the show with a quiz about crocodiles.

## Workshops.

Training workshops can be expensive, but provide community leaders with the necessary information and skills to implement a conservation strategy. Workshops are very useful and empower local officials.

Workshops are also very useful ways to help people if they need to make changes in their livelihood. Conservation sometimes requires people to make changes in their lives.



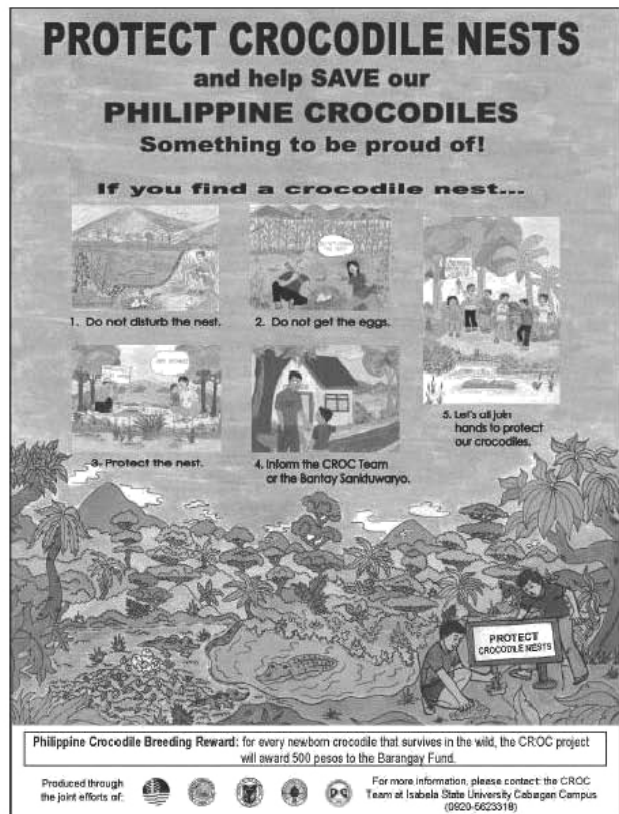
## School visits.

We can go to schools and talk to the children about protecting crocodiles and wetlands. Crocodiles make interesting school subjects! We can give the information to many children at once. The enthusiasm of children will infect their parents.

## Supplemental information

In addition to visiting people, printed information can be used as a supplement to keep the effort of conservation in people's mind. Printing information is a relatively inexpensive way to disseminate information, and we can reach many people. Some examples:

1. Posters
2. Folders
3. Leaflets
4. Calendars
5. Booklets
6. Newsletters



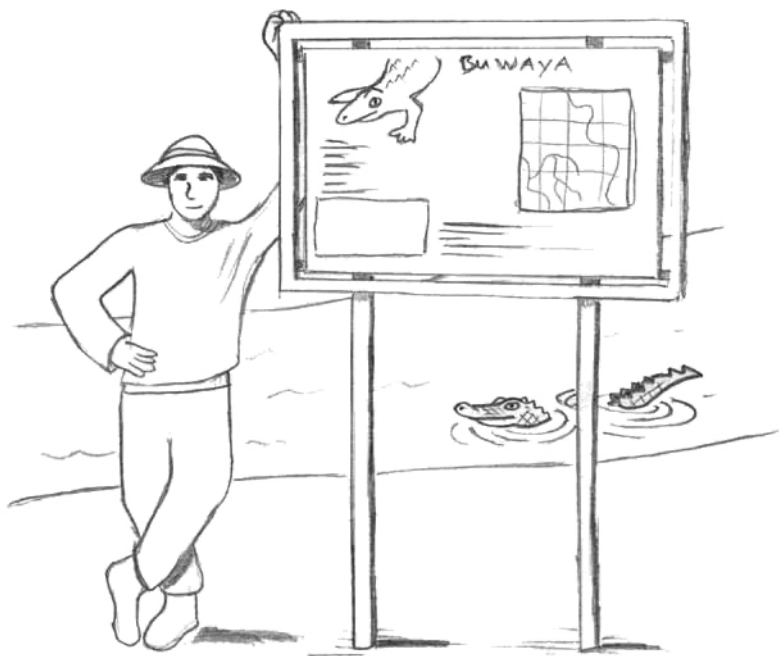
Printing information is not a guaranteed means of communication, because we cannot be sure if people read the information and understand it. Therefore, materials with lots of drawings are more attractive and easier to understand.

It is important to pretest communication materials on the intended audience to make sure the material suits their needs and preferences.



## Billboards.

A billboard can be placed at a very specific location, and can give information that is only relevant for that location. This is very useful for local people, and a well constructed billboard will stand for a long time. A billboard does not reach many people, but it reaches the people who are daily involved in conservation!



## T-shirts.

People are always happy to get a T-shirt. T-shirts are cheap to print and easy to distribute. Many people will see the T-shirt, but people may not always take much notice of the print.





## Living with crocodiles

Contact and conflict between people and crocodiles

If people and crocodiles live alongside each other, they are bound to meet each other occasionally. The general rule is to leave the crocodiles and their nests in peace. Without provocation, Philippine crocodiles are not dangerous.

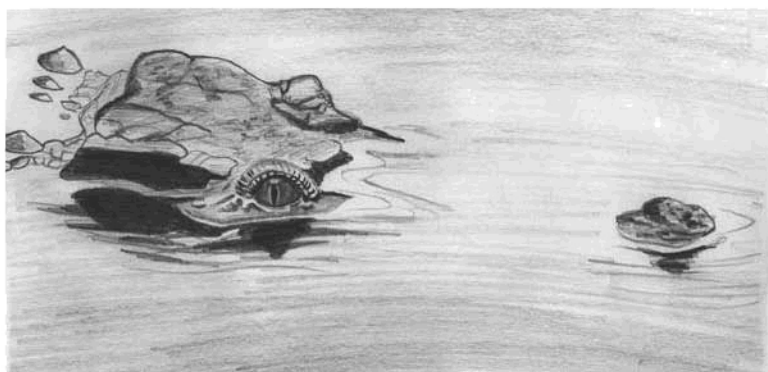


What to do...

Advice and guidelines to keep people and crocodiles happy.

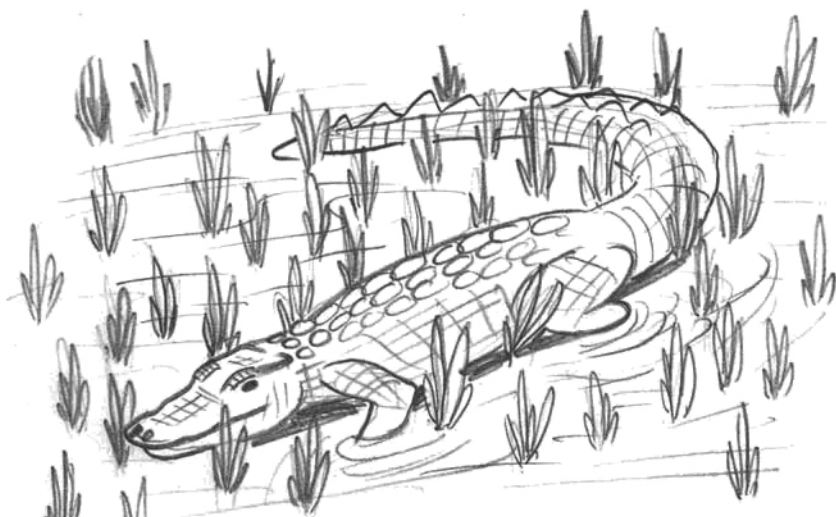
If you see a crocodile in the river

Enjoy this rare view. It is best to leave the crocodile in peace.



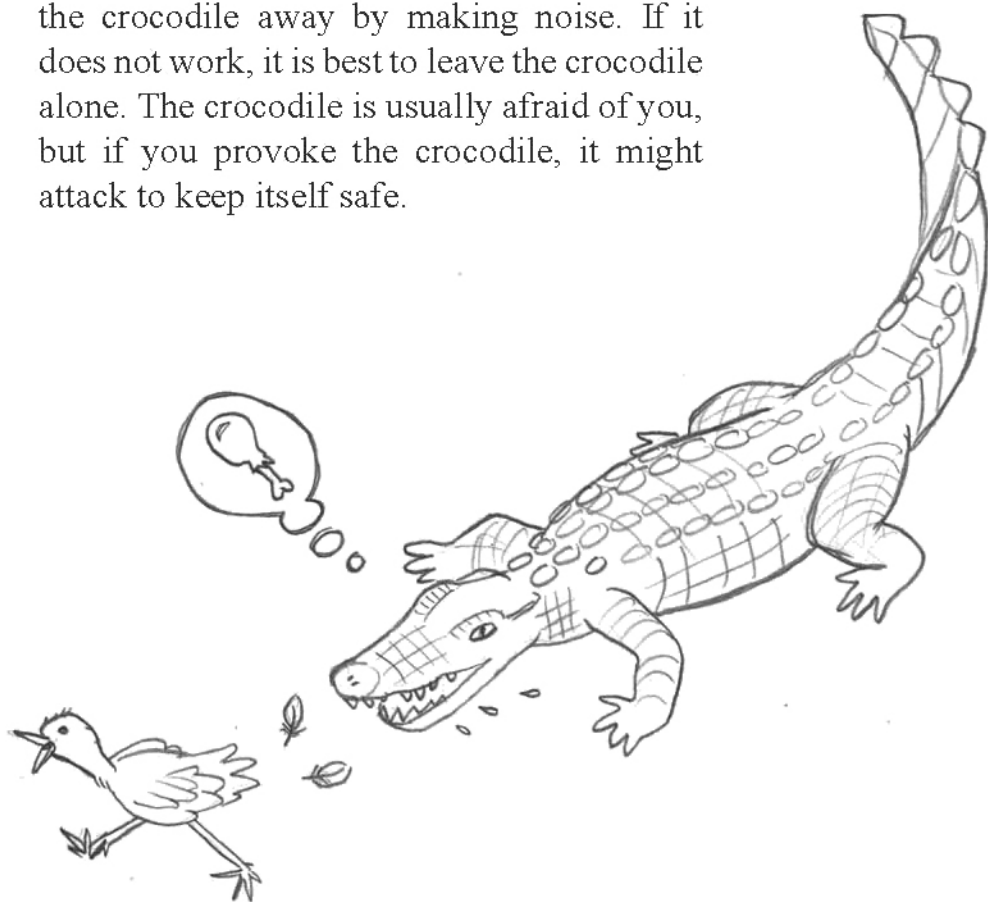
If you see a crocodile on your farmland

If the crocodile is in a newly planted rice field, you can try to chase it away with noise. If it does not work, do not catch or kill the crocodile. If the rice field is not newly planted, it is best to leave the crocodile alone.



## If a crocodile eats your livestock

People and crocodiles are very much alike, we both like meat! You can try to chase the crocodile away by making noise. If it does not work, it is best to leave the crocodile alone. The crocodile is usually afraid of you, but if you provoke the crocodile, it might attack to keep itself safe.



If you tie your livestock next to a wetland where crocodiles live, it becomes more likely that a crocodile will attack the animals. It is also wise to protect your livestock with a fence or put it in a pen and keep it far from the river or lake where crocodiles live.

If you see somebody trying to kill a crocodile

Tell him or her that harming or killing crocodiles is against the law. If this does not work, try to stop the killing and inform the law enforcers, such as the Department of Environment and Natural Resources (DENR), the police or the army.



If you see a dead crocodile

It is best to leave the crocodile where it is.

Inform the law enforcers. They can investigate if somebody has harmed the crocodile and take legal steps if necessary. You can bury the crocodile's body or turn it over to the law enforcers.

If a crocodile is trapped in fishing nets

Take the fishing net on land so the crocodile does not drown. Remove the crocodile from the fishing nets and release it on site.



Be careful! The crocodile will feel threatened and will defend itself. It is best to cover the eyes of the crocodile with cloth and to tie the snout with a rope. Be sure to remove the cloth and rope before releasing the crocodile.

If you see somebody with a pet crocodile

Tell people that keeping a crocodile as a pet is illegal. If you see children with a pet crocodile, tell the parents that keeping a crocodile as a pet is illegal. Try to convince them to release the crocodile where it was found. Small crocodiles are cute, but a full-grown crocodile will not be a nice pet!



If you see somebody selling a crocodile

Tell people that selling and buying crocodiles is illegal. Try to convince them to release the crocodile where it was found.

## If you find a crocodile nest

It is best to leave the nest alone. If you open the nest or move the eggs, the babies inside the eggs will die!

Try to make sure that the nest stays protected by placing a warning sign.



If you see somebody opening a crocodile nest

Tell him or her that destroying a crocodile nest is against the law. Moving crocodile eggs will kill the babies inside! Try to restore the nest by closing it with vegetation.

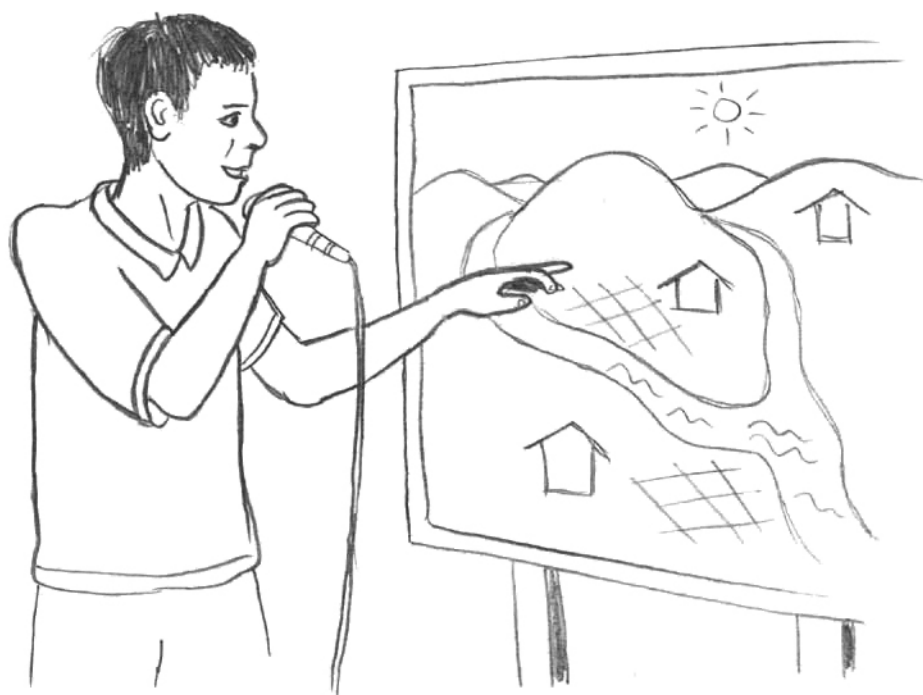




## Removing threats to crocodiles

### Space for people and crocodiles

People and crocodiles both need space to live. They can live next to each other if we use the land effectively. Workshops on effective land use can help people select the best land for agriculture and the best places to establish crocodile sanctuaries.



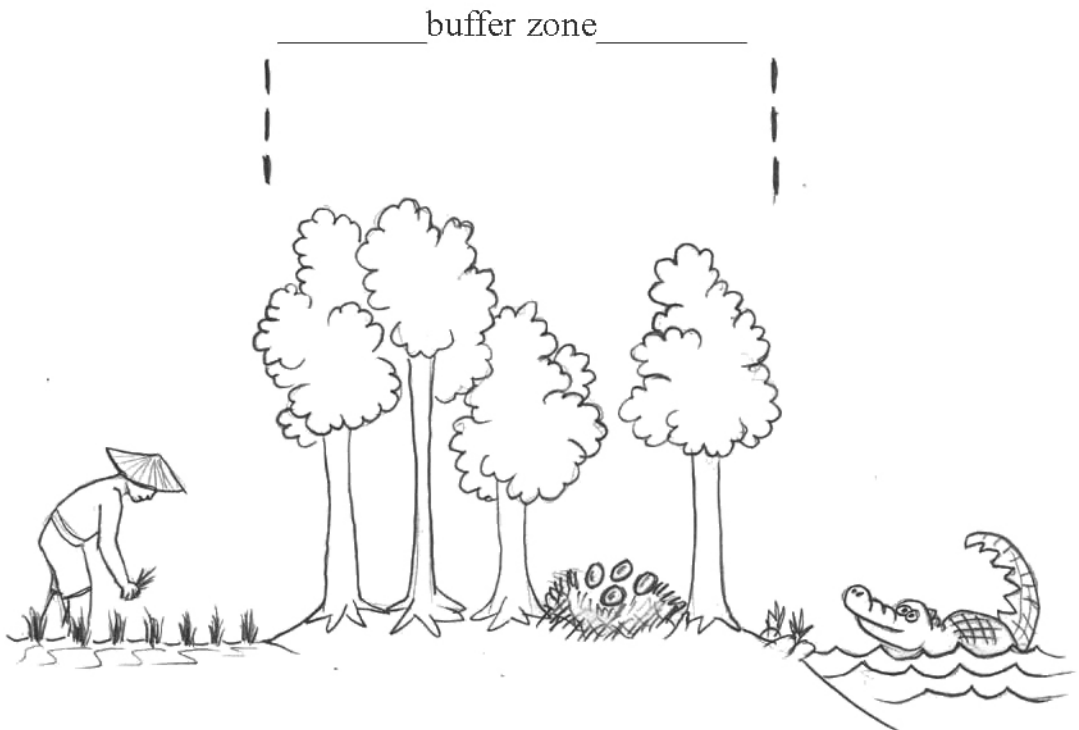
If we provide the crocodiles with a sanctuary, they have a place to make nests and to hunt for food. This way, the crocodiles do not need to enter agricultural land.

## A buffer zone

The best way to protect crocodiles is to leave them alone. To minimize the contact and conflict between people and crocodiles, it is wise to create a buffer zone. This is a strip of land of at least 10 meters wide between crocodile sanctuaries and agricultural land.

If the buffer zone remains free of human activity, contact between people and crocodiles will be less and the crocodile habitat will be preserved. In buffer zones, crocodiles can find their prey and make nests. This will prevent crocodiles from walking over agricultural land and hunt or make nests in the agricultural fields.

Buffer zones are also effective against erosion and help maintain a healthy river.



## Bantay Sanktuwaryo

We can train Bantay Sanktuwaryo, a protection team to monitor and enforce laws, rules and regulations that protect crocodiles and wetlands. The team can be composed of community members.

The Bantay Sanktuwaryo can make sure that crocodiles are not being harmed, buffer zones remain free of human activity and that crocodile nests are protected.



## Municipal Ordinances

According to the Local Government Code, barangay and municipal governments have the power to promulgate and adopt their own Ordinances and Resolutions.

In the Municipality of San Mariano, Isabela, populations of Philippine crocodiles were found in 1999. The Municipal authorities of San Mariano created a comprehensive policy to protect the crocodiles in the wild. Their Municipal Ordinances can function as examples of local ordinances that protect crocodiles and wetlands.

### Municipal Ordinances of San Mariano

Municipal Ordinance 1999-025,

which prohibits “the collection and annihilation of Philippine crocodiles in the municipality.”

Municipal Ordinance 2000-002,

declared the Philippine crocodile the flagship species of the municipality. The municipal authorities agreed that having the Philippine crocodile in the municipality is something to be proud of.

Municipal Ordinance 01-17,

declared a Philippine crocodile sanctuary. A series of public consultations with local communities residing near the municipal sanctuary was organized. These community meetings sought to balance conservation goals with the developmental needs of the community. During these community consultations specific management agreements were negotiated upon, for example on the extent of the protected area (buffer zone) alongside the river.



## Laws

Below, national laws and international agreements are listed that are applicable to crocodile and wetland conservation.

### National laws

#### The Local Government Code

The Local Government Code of 1991 (Republic Act 7160), provides the legal framework for the devolution of power and authority over natural resource management to the LGU. Section 3 specifies that:

*“Local government units shall share with the national government the responsibility in the management and maintenance of ecological balance within their territorial jurisdiction”.*

### National laws that protect crocodiles

#### The Wildlife Act

The Wildlife Act, or the Wildlife Resources Conservation and Protection Act of 2001 (Republic Act 9147) aims to:

*“(i) conserve and protect wildlife species and their habitats; (ii) regulate the collection and trade of wildlife; (iii) Pursue, with due regard to the national interest, the Philippine commitment to international conventions; (iv) initiate or support scientific studies on the conservation of biodiversity”.*

Crocodiles are under the jurisdiction of the DENR (Department of Environment and Natural Resources); the Department of Agriculture has jurisdiction over all declared aquatic critical habitats and all aquatic resources.

The minimum penalty for killing a Philippine crocodile is 6 years imprisonment and/or a fine of 100,000 pesos!

#### Presidential Proclamation 2146

Presidential Proclamation 2146 on environmentally critical areas and projects of 1981 states that an Environmental Impact Statement (EIS) must be made for all activities in areas *“which constitute the habitat for any endangered species of indigenous Philippine wildlife”.*

The Environment Code

The Environment Code of 1977 (Presidential Decree 1152), calls for a rational exploitation of threatened wildlife resources. Chapter II-Wildlife, Section 29 identifies measures for rational exploitation that include:

*“(i) regulating the marketing of threatened wildlife resources; (ii) reviewing existing rules and regulations on exploitation and formulating guidelines for systematic and effective enforcement; and (iii) conserving threatened species of fauna, increasing their rate of reproduction, maintaining their original habitat, habitat manipulation, population control in relation to the carrying capacity of any given area, banning indiscriminate and destructive means of catching or hunting them”.*

### National laws that protect wetlands

The NIPAS Act

The NIPAS Act (National Integrated Protected Areas System Act) of 1992 (Republic Act 7586), defines the terms of establishing protected areas in the Philippines. Hunting of wildlife is prohibited in protected areas, except in some specific circumstances (for example for traditional or religious purposes of indigenous communities).

The Water Code

The Water Code of 1976 (Presidential Decree 1067), identifies the basic legal principles related to the appropriation, control and conservation of freshwater resources. Article 51 specifies that:

*“the banks of rivers and streams and the shores of the sea and lakes throughout the entire length and within a zone of [ . . . ] twenty meters in agricultural areas, and forty in forest areas are subject to the easement of public use”.*

Article 74 states that: *“swamps and marshes which are owned by the State and which have primary value for waterfowl and propagation of other wildlife purposes may be reserved and protected from drainage operation and development”.*

The Revised Forestry Code

The Revised Forestry Code of 1975 (Presidential Decree 705), and subsequent amendments, redefined the use of, access to and control over public forests. Section 16 specifies that:

*“strips of mangrove or swampland at least twenty meters wide, along shorelines facing oceans, lakes and other bodies of water, and strips of land at least 20 meters wide facing lakes, may not be classified as alienable and disposable land”.*

The Fisheries Code

The Fisheries Code of 1998 (Republic Act 8550), ensures the rational and sustainable development, management and conservation of the fishery and aquatic resources in Philippine waters and protects the right of local fisher folk. Chapter 2, Section 11, mentions that:

*“Department shall declare closed seasons and take conservation measures for rare, threatened and endangered species in concurrence with concerned government agencies”.*

Note that this act is to be implemented by the Department of Agriculture, instead of the DENR. The Act is provided with a clear definition of terms. Endangered, rare and/or threatened species are defined as:

*“aquatic plants, animals [...] in danger of extinction as provided for in the existing fishery laws, rules and regulations of the Protected Areas and Wildlife Bureau of the Department of Environment and Natural Resources and in the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)”.*

## International agreements

There are various international agreements and conventions which the Philippine government has signed. The Philippine constitution gives a ratified international treaty the same weight and value as a statute of Congress.

### CITES

CITES, the Convention on International Trade in Endangered Species of Wild Flora and Fauna, is an international agreement between governments. The Philippine crocodile is listed on Appendix 1 of CITES. The convention bans all international trade in the species and species derived products (CITES 1998).

CITES was ratified by the Philippine Senate in 1981.

### The Biodiversity convention in Rio de Janeiro

The Convention of Biological Diversity of 1992 recognized for the first time in international law that the conservation of biological diversity is “*a common concern of humankind*” and is an integral part of the development process. The agreement covers all ecosystems, species, and genetic resources. Importantly, the Convention is legally binding; countries that join it (‘Parties’) are obliged to implement its provisions.

The Convention on Biological Diversity was ratified by the Philippine Senate in 1993 urging for a national strategy for the sustainable use and conservation of biological diversity.

### The Ramsar Convention

The Ramsar Convention is an international treaty for the conservation and sustainable utilization of wetlands. The convention urges its parties to stop the loss of wetlands now and in the future, recognizing the fundamental ecological functions of wetlands and their economic, cultural, scientific, and recreational value. The Philippines became a contracting party in 1994.



## GLOSSARY

Adult crocodile	Philippine crocodiles that are capable of reproducing. Usually more than 1.5 meters long.
Awareness raising	To give more knowledge to people.
Basking	Sitting under the sun to increase body temperature.
Buffer zone	A strip of land to keep the living areas of people and crocodiles separated.
Cold-blooded	Animals of which the body temperature is dependent on the temperature of their surroundings.
Conservation	Protecting the environment and natural resources including plant and animal species as well as their habitat for the future.
Dynamite fishing	Fishing using explosives to stun or kill schools of fish for easy collection. This illegal practice can be extremely destructive, as the explosion often destroys the surrounding nature.
Ecosystem	A community of all the plants, animals and micro-organisms that live together in a certain area, such as wetlands.
Endemic	An animal or plant that lives only in a single place in the world. Such as the Philippine crocodile, which is endemic to the Philippines.
Electro fishing	Fishing using electricity to stun or kill fish for easy collection. This illegal practice can be extremely destructive, as the electricity often stuns or kills other animals in the surroundings, including crocodiles.

Habitat	An area that is inhabited by a particular species of animal or plant. Wetlands are the habitat of the Philippine crocodile.
Hatching	The emergence of a young animal from an egg.
Hatchling	A newborn crocodile.
Home range	The living area of an animal.
Juvenile crocodile	A crocodile that is not yet an adult. Philippine crocodiles stay juveniles until they are more than 1.5 meters in length.
Pesticide fishing	Fishing using pesticides to kill fish for easy collection. This illegal practice can be extremely destructive, as the pesticides often destroy the surrounding nature and kill animals and people.
Reptile	Animals that have skin that is covered in hard scales as opposed to hair or feathers. They are cold-blooded and lay eggs.
Wetland	An area of land where the soil is permanently or seasonally covered with water. Wetlands include rivers, pools, swamps, marshes and lakes. The water in wetlands can be saltwater, freshwater or brackish.





The Philippine crocodile is the rarest crocodile in the world. Without local support, it will surely go extinct in the wild. The Philippine crocodile is also part of the Philippine heritage. It has always lived in the Philippines and plays an important role in Philippine culture.

Help conserve the Philippine crocodile and the wetlands it lives in.

**The Philippine crocodile,  
something to be proud of!**



For more information, please contact the Mabuwaya Foundation.  
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