

Module 2

The Philippine Environment



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UP Department of Broadcast Communication
UP National Institute for Science and Mathematics Education Development



UP COLLEGE OF MASS COMMUNICATION
DEPARTMENT OF BROADCAST COMMUNICATION



DZUP EskweKalikasan: Para sa kabataan, kapaligiran, at bayan

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Published by:

Department of Broadcast Communication
2F Plaridel Hall
College of Mass Communication
University of the Philippines Diliman
Diliman, Quezon City

The University of the Philippines
National Institute for Science and Mathematics Education Development
Quirino Avenue, University of the Philippines Diliman
Diliman, Quezon City

For additional resources, go to:
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Module and Podcast Writer

Krystelle Ymari A. Vergara

Module Consultants and Evaluators

Maria Helen D. Catalan, PhD
Sally B. Gutierrez, PhD

Module Supervisor (Teaching and Learning Process)

Sally B. Gutierrez, PhD

Module Supervisor (Concept Development)

Daphne-Tatiana T. Canlas, PhD

Managing Editor

Ma. Ivy A. Claudio

NISMED Project Coordinators

Aida I. Yap, PhD
Erlina R. Ronda, PhD
Ma. Lourdes S. Agad

Creative Consultant

Elizabeth L. Enriquez, PhD

In charge of Module Development and Distribution

Ma. Ivy A. Claudio

Project Staff

Ma. Zarina Mae J. Yamog
Joseph Vince A. Claudio

Artwork

Rosabelle Jem M. Torrecampo

Layout

Carl Dave Anthony L. Sayat

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Preface

Para sa bayan, kalikasan, at kabataan? Kayang-kaya!

The project **DZUP EskweKalikasan: Para sa kabataan, kapaligiran, at bayan** is a publicly-funded initiative of the academe, with support from the government and advocates, that aims to contribute to the initiatives to integrate climate change knowledge and concepts about the Philippine environment in formal education.

According to the Climate Change Commission, (n.d.) “the Philippines is one of the countries at greatest risk from present and projected climate-related hazards such as tropical cyclones, floods, landslides, and droughts.” These teaching modules were designed to encourage students with a comprehensive examination of the issues confronting the environment. Recognizing the curriculum visions and the objectives of inquiry-based teaching and learning that are adopted and promoted by the Philippine Basic Science Education Curriculum, these modules go beyond increasing public awareness of the environment’s significance in sustaining life on Earth to examining the effects of human actions in the protection or degradation of the environment.

Results of the early studies of Belland, Glazewski, and Richardson (2012) claim that issue-based learning is closely linked with evidence-based learning. It is thus appropriate to use scientific argumentation to implement these modules. Embedded in the modules is the provision for students’ opportunities to deeply engage in evidence-based scientific argumentation while simultaneously developing their critical thinking and communication skills. Thus, the basic components of scientific argumentation such as **claim, evidence, and justification** were strategically presented in the teaching modules. The modules, identified in the Curriculum Entry Points section, can be used in the following Senior High School Core Curriculum Subjects: Earth and Life Science or Earth Science; Understanding Culture, Society, and Politics; and Disaster Readiness and Risk Reduction.

These modules use multimodal learning to create an engaging and exciting learning environment that recognizes diverse learning styles. The concepts and issues presented in each lesson are mirrored in the podcast “*Kayang-kaya!*” to supplement classroom discussion using aural storytelling. Case studies that highlight local experiences while recognizing the various contexts that surround environmental issues, particularly climate change, are made available so the students can better grasp the environmental challenges that we are facing and be acquainted with examples of adaptation and mitigation measures that are currently being practiced.

DZUP EskweKalikasan aims to contribute to the wider discussion of environmental issues and the impacts of climate change and disasters in our everyday life, and to enrich conversations about sustainable living, sustainable development, and mindful consumption. These modules aim to be of utmost help for teachers to supplement their resources in their implementation of the Senior Science Education Curriculum.



The Project

DZUP EskweKalikasan: Para sa kabataan, kapaligiran, at bayan is an on-air and online modular educational project about the environment for the youth. The UP Department of Broadcast Communication (CHED Center of Excellence for Broadcasting) and DZUP 1602 (the official radio station of UP Diliman) spearheaded the project with funding support from the Philippine Government under the General Appropriations Act for Fiscal Year 2019 through the initiative of the Office of Senator Loren Legarda. The UP Diliman Office of the Chancellor also provided additional funding support.

Ten modules were conceptualized and developed in collaboration with the UP National Institute for Science and Mathematics Education Development (UP NISMED).

- Module 1.** The Environment and Me
- Module 2.** The Philippine Environment
- Module 3.** Biodiversity Conservation
- Module 4.** Sustainable Living
- Module 5.** Climate Change
- Module 6.** Waste Management
- Module 7.** Management of Environmental Resources
- Module 8.** Environment and Disasters
- Module 9.** Renewable Sources of Energy
- Module 10.** The Youth, the Nation, and the Environment

Each of the teaching modules comes with a **Kayang-kaya!** podcast and an episode of **Go Teacher Go sa DZUP EskweKalikasan (GTG sa DZUP Eskwe)**.

The **Kayang-kaya!** podcast, developed and produced by the UP Department of Broadcast Communication, chronicles the adventure of three Senior High School students residing in Brgy. Luntian, as they seek to understand and uncover the issues confronting the environment.

Meanwhile, DZUP EskweKalikasan and UP NISMED's radio program Go Teacher Go, collaborated to produce **GTG sa DZUP Eskwe**, video guides for teachers in implementing the modules in their classes. **GTG sa DZUP Eskwe** also discusses tips on how to adjust the modules into different modes of learning, i.e. blended, online, remote, etc. All the teaching modules and other learning resources are available for download at www.dzup.org/eskwekalikasan.



How to use this module

The modules promote inquiry-based teaching and learning through scientific argumentation and were designed to encourage students to appreciate Mother Nature and examine the issues confronting our environment. Each module is composed of the following sections:

Introduction Page / Table

This page contains the general information about the teaching module and its corresponding podcast. These include the following: **module number** and **title**, **podcast topic**, main question in the podcast, **synopsis** of the podcast, and the **teaching module objectives**.

Curriculum Entry Points

The curriculum entry points serve as guides for the educators in the appropriate use of the teaching module. This will help the educators identify the student **grade level**, **subjects**, and **subtopics** that this material can be applied to, as well as the **content standard**, **performance standard**, and **learning competencies** from the Department of Education's curriculum guide. This part also contains the **prerequisite concepts** based on students' prior knowledge from previous grade levels.

Teaching and Learning Process

The teaching and learning process guides the teacher in inquiry-based teaching using argumentation. This section identifies the **teaching approach**, and the **materials** that will be used to teach this module. The modules adopt the guided inquiry-based approach through argumentation as a teaching approach. It is composed of two major parts: the **lesson procedure** proper and the **assessment**. Embedded in the lesson procedure in each module is the eliciting of the three main components of argumentation: claim, evidence, and justification. They are placed differently depending on how the concepts are formed whether inductively or deductively. Assessment is used in the module in three ways: for learning (formative assessment), as learning (on-going), and of learning (summative assessment).

Related Concepts

This part contains the science and other related concepts and their contextualized definitions depending on how they were used in the modules.

References

This contains all the references used by the writers in writing the modules. The educators may revisit these references for additional information.

Activity Sheets / Worksheets

Activity sheets may include **case studies** and **guide questions** to answer while listening to the podcast or for presentation purposes, and other types for individual and group activities.

Answer Keys

The activity sheet/worksheet in each module comes with the corresponding answer key that can help the educators in assessing the student outputs.





Teaching Module

Module No. and Title	Module 02. The Philippine Environment
Podcast Topic	The Philippines and Its Natural Resources
Main Question	Kakaunti na lang ba talaga ang mga isda natin sa Pilipinas?
Podcast Synopsis	<p>Kali's curiosity sparked her quest to find out whether the rumors about decreasing fish supply are true or not. She meets Tito Greg, Alab's uncle and a fisherman residing in Barangay Bughaw. Through this encounter, Kali discovers the circumstances surrounding not only the dwindling fish supply, but also the entirety of the state of the Philippine environment. Join them as they learn more about the Philippine environment and how we can protect and save it.</p> <p><i>Narinig ni Kali na kumakaunti na ang supply ng ating mga isda sa dagat. Totoo kaya ito? Kasama ang kanyang kaibigan na si Alab, makakausap nila ang isang mangingisda sa Barangay Bughaw na si Tito Greg. Pag-uusapan nila kung gaano ba talaga kayaman ang Pilipinas pagdating sa natural resources, at ang nanganganib na pagkasira at tuluyang pagkawala ng mga ito. Samahan silang pag-aralan ang Philippine environment at tuklasin kung paano natin mapoprotektahan ang ating kalikasan.</i></p>
Podcast Objectives	<p>After the class, the learners should be able to:</p> <ol style="list-style-type: none">1. appreciate the rich biodiversity in the Philippines;2. identify environmental challenges in the Philippines;3. describe how human activities affect our environment particularly the marine ecosystem; and4. cite ways on how to protect the Philippine environment.
Teaching Module Objectives	<p>(Adapted from the DepEd curriculum guides)</p> <p>At the end of this lesson, the learners should be able to:</p> <ol style="list-style-type: none">1. demonstrate an understanding of different terrestrial and aquatic ecosystems; and2. understand how human activities affect the natural ecosystem.

Curriculum Entry Points

Grade Level: Grade 11/12 (Earth and Life Sciences)

Content: Interaction and Interdependence

Content Standards	Performance Standard	Learning Competency
<i>The learners demonstrate an understanding of:</i>	<i>The learners shall be able to:</i>	<i>The learners:</i>
Terrestrial and aquatic ecosystems	The learners shall be able to prepare an action plan containing mitigation measures to address current environmental concerns and challenges in the community.	Describe how the different terrestrial and aquatic ecosystems are interlinked with one another. (S11/12LT-IVhj-30)
How human activities affect the natural ecosystem		

Prerequisite Concepts

1. Ecosystem (Grade 4)
 - describing some types of beneficial interactions among living things
 - describing certain types of harmful interactions among living things
 - describing the effects of interactions among organism in their environment
2. Ecosystem (Grade 6)
 - describing the interactions among living things and nonliving things in tropical rainforests, coral reefs, and mangrove swamps
 - explaining the need to protect and conserve tropical rainforests, coral reefs, and mangrove swamps
3. Ecosystem (Grade 7)
 - differentiating between biotic from abiotic components of an ecosystem
 - describing the different ecological relationships found in an ecosystem
4. Interactions in the Atmosphere (Grade 7)
 - discussing how energy from the sun interacts with the layers of the atmosphere
 - explaining how some human activities affect the atmosphere
 - accounting for the occurrence of land and sea breezes, monsoons, and the intertropical convergence zone (ITCZ)
 - describing the effects of certain weather systems in the Philippines
5. The Philippine Environment (Grade 7)
 - recognizing that soil, water, rocks, coal, and other fossil fuels are Earth materials that people use as resources
 - describing ways of using Earth's resources sustainably
6. Climate (Grade 9)
 - explaining how different factors affect the climate of an area
 - describing certain climatic phenomena that occur on a global level

Teaching Process

Teaching Approach	Inquiry-based approach through argumentation
Materials	<ol style="list-style-type: none"> 1. Slogan making worksheet 2. PowerPoint presentation 3. Podcast audio file <i>(Please visit www.dzup.org/eskwekalikasan to access the podcast, PowerPoint and/or student's worksheet.)</i>

I. LESSON PROCEDURE

Present the argumentative question/s or statement. Elicit students' opinions to assess their prerequisite knowledge. Their answers may be conceptual knowledge or experiential knowledge.

Argumentative Question or Statement

Do you agree that ecosystem biodiversity in the Philippines and the rest of the world is declining? If yes, why? If no, why not?

Gathering of Evidence and Concept Formation

A. Introduction and Facts about Biodiversity

- **Question 1: In your previous science lessons, how did you define biodiversity?**
(Elicit the answer to the question; do not lecture.)

Possible Answer/s:

Biodiversity refers to the variety of life on Earth, specifically on all the species in a region or an ecosystem. It refers to every living thing, such as plants, bacteria, animals, and humans (*National Geographic*, n.d.).

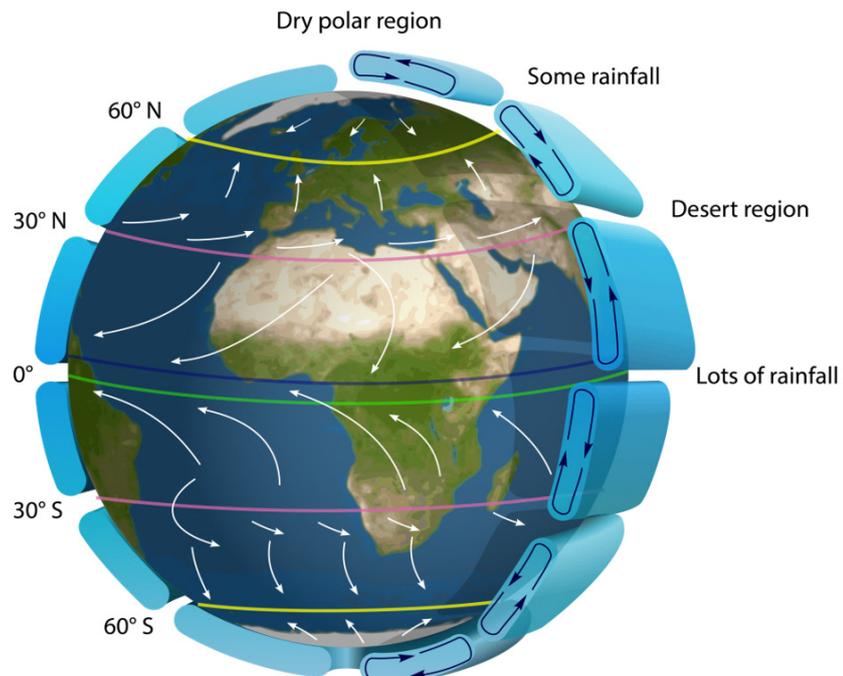
Some other canonical concepts:

1. **Biodiversity** is the variability among living organisms from all sources, including terrestrial, marine, and other aquatic ecosystems, and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems (*GreenFacts*, n.d.).
2. **Biodiversity** forms the foundation of the vast array of ecosystem services that critically contribute to human well-being (*GreenFacts*, n.d.).
3. **Biodiversity** is thought to have first been coined as a contraction of the term "biological diversity" in 1985 and then was popularized by a number of authors. Biodiversity is the variety of life on Earth; it includes all organisms, species, and populations; the genetic variation among these; and their complex assemblages of communities and ecosystems. It also refers to the interrelatedness of genes, species, and ecosystems and in turn, their interactions with the environment" (*United Nations Environment Programme*, 2010).

- **Question 2: Observe the diagram of the planet Earth. Based on the diagram, where can we find the highest biodiversity on our planet?**

Possible Answer/s:

High biodiversity can be found in the areas near the Equator. (*Elicit the response instead of giving a lecture.*)



Source: Khan Academy (n.d.).

- **Question 3: Can you describe the places found near the Equator?** (*Students' observation on the Earth diagram shall be the basis of their answers to the question.*)

Possible Answer/s:

1. Lots of rainfall distributed throughout the year
2. Regulated amount of sunlight

- **Question 4: In summary, describe the distribution of biodiversity on the planet Earth.**

Possible Answer/s:

One interesting pattern that we can observe is that the closer we get to the Equator and the farther we get from Poles, the number of species increases. This particular pattern is called **the latitudinal gradient of species diversity**. The tropical areas, particularly those between the Tropic of Cancer and the Tropic of Capricorn, are home to more species as compared to temperate areas (Almeida & Specht, 2017).

- **Question 5: What are some of the ecosystems in the tropics?**

Possible Answer/s:

Tropical areas consist of a wide array of ecosystems—rainforests, deserts, savannahs, and mangroves, to name a few. But these rich ecosystems are under threat due to increased habitat destruction (Almeida & Specht, 2017).

- **Question 6: Are aquatic ecosystems connected to the terrestrial ecosystems?**

Possible Answer/s:

Term to unlock

Ecosystem linkage – It refers to any constant or continuous process or characteristic that, in some manner, is capable of connecting and relating different ecosystems with one another (Lamberti, Chaloner, & Hershey, 2010).

Examples of linkages

- a. lake – stream
- b. river – floodplain
- c. marine – freshwater

“Aquatic ecosystems are almost invariably connected to other ecosystems because the dominant force of water movement facilitates physical, chemical, and biological exchanges among ecosystems” (Lamberti, Chaloner, & Hershey, 2010, p. 245).

- **Question 7: Which countries in the world have high biodiversity?** (*Students’ enumeration on these countries may not be completely elicited. The teacher may add if necessary.*)

Possible Answer/s:

Some of the countries considered to be mega-diverse are Venezuela, the United States, South Africa, the Philippines, Peru, Papua New Guinea, Mexico, Malaysia, Madagascar, Indonesia, India, Ecuador, the Democratic Republic of the Congo, Colombia, China, Brazil, and Australia (Pariona, 2018).

B. This part will focus on the discussion on the threats to biodiversity. It will be the second half of the discussion to develop the concept in the learning competencies.

- **Question 8: What are some of the threats to biodiversity?** (*Answers to this question may not be as accurate as the ones enumerated below. Answers may not also be limited to the ones presented.*)

Possible Answer/s:

- a. *Unique climates and conditions*

The climate across the world varies significantly and naturally, which also causes drastic differences in biodiversity in various places. For instance, the freezing mountain tops and the hot, arid deserts have unique

climates that make these places unsuitable to live in for most species (Wandrei, n.d.). On the other hand, places near the Equator, known for its adequate amount of rainfall and sunlight, are considered to have a diverse range of species.

As a country situated near the Equator and within the Pacific Ring of Fire, the Philippines is often hit with typhoons, earthquakes, and other natural calamities, but is also one of the world's mega-diverse countries blessed with a variety of life in mountain forests, agricultural areas, freshwater systems, coastal and marine areas, and more (Republic of the Philippines, 2014).

b. *Pollution and environmental destruction*

Human activities, especially if environmentally irresponsible, have a huge impact on the status of biodiversity all over the world. Most of the time, these practices contribute largely to the worsening pollution and environmental degradation, which in turn affect the survival of various species (Wandrei, n.d.).

In the Philippines' Fifth National Report to the Convention on Biological Diversity (2014), pollution "is manifested through (a) indiscriminate dumping of solid waste in river systems, other waterways, urban and coastal areas, thereby clogging and polluting downstream waterways,(b) industrial waste and agricultural run-off e.g. fertilizers, pesticides, and insecticides, (c) excessive construction of illegal fishpens leading to overstocking and uncontrolled feeding,(d) mining,(e) excessive use of fertilizers degrading water quality leading to red tide, and (f) informal settlements."

c. *Invasive species*

According to the International Union for Conservation of Nature (2018), invasive species or non-native species are introduced that are capable of changing and harming the ecosystem, along with its functions and relationships. Whether introduced naturally or by human activity, these species can cause "disruptive change in food webs, which can reverberate throughout a region and cause numerous other species to go extinct" (Wandrei, n.d.).

Some commonly known invasive species in the Philippines include the American cockroach (*Periplaneta americana*), which became a common house pest; fire ants (*Solenopsis geminate*) that are capable of inflicting painful, fiery bites, and stings on plants and animals alike; and Riceblack bug (*Scotiniphoracoarctata*), which started to become a major problem in the production of *palay* after reaching Mindanao and Leyte through shipping vessels (Uriarte, n.d.).

d. *Overhunting and overusing*

Overexploitation of species often leads to impeding a species' chances for survival, and eventually the disturbance of the food chain. In 2002, overfishing was the largest threat to coral reefs in the Philippines, which resulted in the decline of fish and aquaculture industries in the country (Republic of the Philippines, 2014).

- **Question 9: Based on the enumerated threats to biodiversity, which among them are considered natural, and which are man-made or anthropological?**

Possible Answer/s:

Natural threat to biodiversity: Unique climate and conditions
Man-made or anthropological: Pollution and environmental destruction
 Invasive species
 Overhunting and overuse of resources

- **Question 10: Describe the current state of biodiversity of the planet now?** *(Answers to this will focus on the current environmental crisis that we are facing, but it should come from the students.)*
- **Question 11: Is there anything that humans can do to protect the declining biodiversity? If yes, how?** *(This can be a rhetorical question and will serve to connect this part to the next teaching procedure.)*

C. Slideshow Presentation: Protected Biodiversity Centers in the Philippines

The teacher will present to the students the various facts and figures that show the richness of biodiversity in the Philippines. Prior to question 12, show **SLIDES 1-2** to introduce the DZUP EskweKalikasan project to students.

SLIDE 1



SLIDE 2



DZUP ESKWEKALIKASAN PROJECT

DZUP EskweKalikasan: Para sa kabataan, kapaligiran, at bayan is a publicly-funded initiative of the academe, with support from advocates and the government. It aims to raise awareness on emerging and evolving discussions about climate change, disaster risks, sustainable living and development and mindful consumption. Especially designed for senior high school teachers and students, the project has produced several teaching and learning resources such as modules, video guides, podcasts, and radio episodes that are available for free online at dzup.org/eskwekalikasan.

The project (whose title is a portmanteau of the Filipino words for school and nature) is spearheaded by the Department of Broadcast Communication of the University of the Philippines (UP) College of Mass Communication and DZUP 1602, in partnership with the UP National Institute for Science and Mathematics Education Development (UP NISMED) and the UP Diliman of the Office of the Chancellor. It is principally funded by the Philippine Government under the General Appropriations Act for Fiscal Year 2019 through the initiative of the Office of Senator Loren Legarda.

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- **Question 12: What are some of the biodiversity protected areas in the Philippines?**
Teacher will say, "Let's play a game called Pili-Pinas. In this game, I will show you some photos of protected areas and you will identify which of these protected areas are found in the Philippines." (Answers to this will be based on **SLIDES 3-26**.)

SLIDE 3



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SLIDE 4



PILI-PINAS




Source: Basa, M. (2018, April 21). 'Baracoy-like' survey of Mount Apo establishments, plantations underway [Online image]. Rappler. <https://www.rappler.com/nation/200739-baracoy-like-survey-mount-apo>

Source: The Altai Mountains: Siberian Switzerland. (n.d.). [online image]. VisitRussia.com. <https://www.visitrussia.com/regions/altai>

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SLIDE 5



PILI-PINAS



**MT. APO NATURAL PARK
(Davao Del Sur and Cotabato)**

- Total land area: About 64,000 hectares
- Elevation: 2,954 meters above sea level (highest mountain in the Philippines)
- Various ecosystem services (water for domestic use and irrigation, source of energy generation) to three (3) cities and four (4) municipalities with over 390,000 households
- Inhabited by several indigenous tribes (mainly by Manobos, Bagobos, and Klata), who consider Mt. Apo as a sacred mountain and as the burial ground of Apo Sandawa, their Great Forefather
- Included in the UN List of National Parks and Equivalent Reserves and acknowledged as an ASEAN Heritage Site
- In 2010, total forest cover was at 14,900 hectares (30% of total land area).

Source: Basa, M. (2018, April 21). 'Baracoy-like' survey of Mount Apo establishments, plantations underway [Online image]. Rappler. <https://www.rappler.com/nation/200739-baracoy-like-survey-mount-apo>

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SLIDE 6

 **PILI-PINAS**



Source: Why you should follow us to Reno and Lake Tahoe. (2019, July 1). [online image]. Forbes Travel Guide. <https://stories.forbestravelguide.com/why-you-should-follow-us-to-reno-and-lake-tahoe>

Source: Ninoy Aquino Parks and Wildlife Center. (n.d.). [online image] DENR-Biodiversity Management Bureau. <http://www.bmb.gov.ph/index.php/12-napwc?start=1>

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SLIDE 7

 **PILI-PINAS**

**NINOY AQUINO PARKS AND WILDLIFE CENTER
(Quezon City, Metro Manila)**



- Total land area: 23.8 hectares
- "Nature Park in the City's Heart" that serves as a venue for various educational, scientific, civic, religious and recreational activities
- Thriving urban biodiversity is composed of different species of endemic and introduced plant species, as well as various animal species, which includes birds, reptiles, mammals, and amphibians.
- A man-made lagoon serves as habitat to some species like tilapia, catfish, and snakehead
- Implements "Ecological Solid Waste Management Program" with the help of the Mother Earth Foundation to systematically reduce and properly manage wastes within the park.

Source: Ninoy Aquino Parks and Wildlife Center. (n.d.). [online image] DENR-Biodiversity Management Bureau. <http://www.bmb.gov.ph/index.php/12-napwc?start=1>

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SLIDE 8



PILI-PINAS




Sources:

Bodkin, H. (2017, November 28). Hope for Great Barrier Reef with discovery of hardcore 100 able to withstand climate change [Online image]. The Telegraph. <https://www.telegraph.co.uk/science/2017/11/28/hope-great-barrier-reef-discovery-hardcore-100-able-withstand/>

Yan, G. (2014, June 6). THE RECOVERY OF TUBBATAHA REEF [Online image]. The Coral Triangle. <http://thecoraltriangle.com/stories/the-recovery-of-tubbataha-reef>

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SLIDE 9



PILI-PINAS



**TUBBATAHA REEFS NATURAL PARK
(Palawan)**

- Total area: 97,030 hectares
- Located at the heart of the Coral Triangle, the global centre of marine biodiversity
- The name "Tubbataha" comes from the Samal language, meaning "long reef exposed at low tide."
- Composed of two huge coral atolls (north atoll and south atoll) and the Jessie Beazley Reef
- Contains roughly 10,000 hectares of coral reefs, and is home to:
 - 600 species of fish
 - 360 species of corals (about half of all coral species in the world)
 - 11 species of sharks
 - 13 species of dolphins & whales
 - 100 species of birds
 - Nesting hawksbill & green sea turtles

Source: Tubbataha Reefs Natural Park. (2018). <http://tubbatahareefs.org/tubbataha-reefs-natural-park/>
 Source: Yan, G. (2014, June 6). THE RECOVERY OF TUBBATAHA REEF [Online image]. The Coral Triangle. <http://thecoraltriangle.com/stories/the-recovery-of-tubbataha-reef>

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 **PILI-PINAS**



Sources:
Johnson, H. (2019, August 8), 30 Beautiful Caribbean Islands to Visit [Online image]. U.S. News. <https://travel.usnews.com/gallery/30-amazing-caribbean-islands-to-visit?slide=28>
File: Batanes Protected Landscapes and Seascapes Sabtang Island Cove.jpg [Online image]. (n.d.). Wikimedia commons. https://commons.wikimedia.org/wiki/File:Batanes_Protected_Landscapes_and_Seascapes_Sabantang_Island_Cove.jpg

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SLIDE 11

 **PILI-PINAS**

BATANES PROTECTED LANDSCAPE AND SEASCAPE (Batanes)



- At least 96 species of ferns and fern allies belonging to 49 genera and 25 families recorded in Mt. Iraya vicinities. Two of these are found only in Batanes, while eight are found in the Philippine archipelago.
- Seven flowering plant species are found only in Batanes.
- One of the last remaining areas in the Philippines having unique natural physiographic features (wave-cut cliffs, cave-like outcrops, secluded white sand beaches) resulting from its position where strong winds and fast currents have etched out its distinct morphology
- An important flyaway for many migratory bird species, and home to pink and red corals (*Corallum* sp.)
- It is the only area in the Philippines where traditional architecture is of stone, in response to the wind and monsoon stresses, rather than that of the more typical, tropical, impermanent materials (wood, bamboo, thatch) commonly used in village architecture.

Sources:
<http://whc.unesco.org/en/tentativelists/521/>
File: Batanes Protected Landscapes and Seascapes Sabtang Island Cove.jpg [Online image]. (n.d.). Wikimedia commons. https://commons.wikimedia.org/wiki/File:Batanes_Protected_Landscapes_and_Seascapes_Sabantang_Island_Cove.jpg

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SLIDE 12



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Sources:
 Mt. Hamiguitan [Online image]. (n.d.). Municipality of San Isidro, Davao Or. <https://www.sanisidro.gov.ph/mt-hamiguitan/Western-Ghats> [Online image]. (n.d.).
 Encyclopaedia Britannica. <https://www.britannica.com/place/Western-Ghats>

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SLIDE 13



PILI-PINAS



**MT. HAMIGUITAN RANGE WILDLIFE SANCTUARY
(Davao Oriental)**

- Elevation: 75–1,637 meters above sea level
- Part of the Eastern Mindanao Biodiversity Corridor
- A habitat for a range of plant and animal species and showcases terrestrial and aquatic habitats at different elevations
- Home to a total of 1,380 species with 341 Philippine endemics that include critically endangered species such as the iconic Philippine Eagle (*Pithecophaga jefferyi*) and the Philippine Cockatoo (*Cacatua haematuropygia*), as well as the trees *Shorea polysperma*, *Shorea astylosa*, and the orchid *Paphiopedilum adductum*
- The proportion of its amphibian (75% endemic) and reptile (84% endemic) species well exemplified its high level of endemicity.

Source: Mt. Hamiguitan [Online image]. (n.d.). Municipality of San Isidro, Davao Or. <https://www.sanisidro.gov.ph/mt-hamiguitan/>

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Sources:
Margaux. (2018, July 22). Top 5 of things to do on Siargao Island [Online image]. One Day One Adventure. <http://www.onedayoneadventure.com/en/top-5-of-things-to-do-on-siargao-island/>
Johnson, H. (2019, August 8). 30 Beautiful Caribbean Islands to Visit [Online image]. U.S. News. <https://travel.usnews.com/gallery/30-amazing-caribbean-islands-to-visit?slide=23>

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SLIDE 15

 **PILI-PINAS**

SIARGAO ISLAND PROTECTED LANDSCAPE AND SEASCAPE (Surigao del Norte)



- Total area: 278,914.131 hectares (the land area is 62,658.87 hectares and the marine area is 216,255 hectares)
- “Surfing Capital of the Philippines”
- Total mangrove area of approximately 8,600 hectares, serving as the habitat of the saltwater crocodile, *Crocodylus porosus*
- Home to:
 - Philippine Cockatoo (*Cacatua haematuropygia*)
 - Flying lemur (*Cynocephalus volans*)
 - Endangered Philippine Tarsier (*Tarsius syrichta*)
 - Endangered marine turtles such as Green Sea Turtle (*Chelonia mydas*), Hawksbill Turtle (*Eretmochelys imbricata*), and Olive Ridley Turtle
 - 106 species of fish
 - 137 species of mollusks
 - 85 species of birds
 - 21 species of mammals
 - Rare Philippine Ironwood or Mancono (*Xanthostemon verduonianus*), the hardest known species of wood

Source: Siargao Island Protected Landscape and Seascape. (n.d.). The Mindanao Protected Area Management Board Network. <http://mindanaopamb.buksu.edu.ph/pamb/specific/40>
Source: Margaux. (2018, July 22). Top 5 of things to do on Siargao Island [Online image]. One Day One Adventure. <http://www.onedayoneadventure.com/en/top-5-of-things-to-do-on-siargao-island/>

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SLIDE 16



PILI-PINAS




Sources:
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SLIDE 17



PILI-PINAS



**BIAK-NA-BATO NATIONAL PARK
(Bulacan)**

- Total area: 658.85 hectares
- A historically significant site, being the area where Gen. Emilio Aguinaldo retreated after ordering the execution of fellow revolutionary leader, Andres Bonifacio.
- An aquifer of potable water from rivers Balaong and Madlum, accessed by residents of adjacent municipalities
- Features about 100 mostly unexplored caves which create eco-tourism opportunities
- Part of the geographical base of the Angat watershed, one of the most important water sources of the Greater Manila Area.
- Flora includes orchids, trees, shrubs, ferns, bushes and bokawe (buho), among many others
- Fauna includes 177 species – two amphibians, 67 arthropods, 81 birds, nine mammals, and five reptiles. Endemic species include kalaw or the Philippine hornbill (*Buceros hydrocorax*), spotted wild boar (*Sus philippinensis*), and Philippine deer (*Cervus marianus*)

Sources:
 Biak-na-Bato National Park, Bulacan. (n.d.). [PDF File]. Foundation for the Philippine Environment. https://fpe.ph/conservation_site/print_mpdf2
 Vawter, J. (2016, October 17). Travel Guide to Biak-na-Bato National Park, San Miguel, Bulacan [Online image]. Justin Vawter. <https://justinvawter.com/budget-guide/biak-na-bato-national-park-bulacan/>

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SLIDE 18



PILI-PINAS



Sources:
Altai [Online image]. (n.d.). VisitRussia. <https://www.visitrussia.com/regions/altai>
Bessang Pass Natural Monument [Online image]. (n.d.). Wikipedia. https://en.wikipedia.org/wiki/Bessang_Pass_Natural_Monument

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SLIDE 19



PILI-PINAS

BESSANG PASS NATURAL MONUMENT (Ilocos Sur)



- Total area: 1,121.11 hectares
- Elevation: 1,500 meters above sea level
- A historical site wherein 20,000 US and Filipino army men fought and won against Japanese troops during World War II
- Consists of pine forest and mossy type forest
- Bessang Creek and Matukbo River which provides freshwater year-round
- Home to the diverse wildlife of 29 species of birds and five mammals, and reptiles represented by a monitor lizard and different species of snakes

*Source: An act establishing the Bessang Pass Natural Monument/landmark in the municipality of Cervantes, Ilocos Sur as a protected area and for other purposes. (2010, July 27). [PDF File]. Senate. <https://www.senate.gov.ph/lisdata/974182751.pdf>
Source: Bessang Pass Natural Monument [Online image]. (n.d.). Wikipedia. https://en.wikipedia.org/wiki/Bessang_Pass_Natural_Monument*

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SLIDE 20

PILI-PINAS

Sources:
 Guiuan Protected Landscape and Seascape [Online image], (n.d.). Wikipedia. https://en.wikipedia.org/wiki/Guiuan_Protected_Landscape_and_Seascape
 Altai [Online image], (n.d.). VisitRussia. <https://www.visitrussia.com/regions/altai>

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SLIDE 21

PILI-PINAS

GUIUAN PROTECTED LANDSCAPE AND SEASCAPE (Samar)

- Total area: 60,448 hectares
- Fauna includes: tarsier, Philippine cockatoo, Philippine monkeys, heron, migratory egrets and bitterns, plovers, sandpipers, gulls and terns, reptiles such as sailfin lizards, monitor lizard, marine turtles
- Its coastal waters offer almost all species of marine life: eucheuma, abalone, ornamental fish, lobster, and the golden cowry (known for its extraordinary golden sheen).
- Flora includes: nilad (*Sayphiphora acidula*) and bantolinao (*Diosphyros ferrea*), yakal, mangcono, colipapa, and tiga

Source: Guiuan Protected Landscape and Seascape [Online image], (n.d.). Wikipedia. https://en.wikipedia.org/wiki/Guiuan_Protected_Landscape_and_Seascape

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SLIDE 22



PILI-PINAS



Sources:
Brazilian Coast [Online image]. (n.d.). Enrico Marone. <https://enicomarone.com/galleries/brazilian-coast/>
Tanon Strait [Online image]. (n.d.). Enrico Marone. <https://enicomarone.com/portfolios/tanon-strait/>

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SLIDE 23



PILI-PINAS

TAÑON STRAIT PROTECTED SEASCAPE (Cebu and Negros Oriental)



- Total area: 518,200 hectares (5,182 km²)
- The largest marine protected area and third largest park in the Philippines
- Consists of mangrove forests, meadows of seagrass, coral reefs, and marine waters
- Home to tuna species, parrotfish, maya-maya, lapu-lapu, sardines, large dalupapa or diamondback squid (*Thysanoteuthis rhombus*), as well as several of the Philippines' most ancient and endangered animals such as the dugong and the chambered nautilus
- Of the 27 dolphins and whales found nationwide, 14 species have been observed in Tañon Strait
- A migratory route for whale sharks (*Rhincodon typus*) and other giants
- One of the country's major fishing grounds, a source of food and income for many residents in Negros and Cebu

Source: Love Letter to Tañon Strait. (n.d.). [PDF File]. Oceana.org.
https://oceana.org/sites/default/files/love_letter_final_singlepages_with_bleeds_editedsh.compressed_1.pdf
Source: Tanon Strait [Online image]. (n.d.). Enrico Marone. <https://enicomarone.com/portfolios/tanon-strait/>

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SLIDE 24



Protected Areas

These are “**identified portions of land and/or water set aside because of their unique physical and biological diversity and protected against destructive human exploitation**” (ENIPAS Act of 2018).

There are **240 protected areas** in the Philippines as of 2013.

- Total area: **54,500 square kilometers** (21,000 sq. mi.) – 14.2% of the Philippines' total area

Main categories are:

- Strict nature reserve
- Natural park
- Natural monument
- Wildlife sanctuary
- Protected landscapes
- Protected seascapes
- Protected landscapes and seascapes
- Resource reserve
- Natural biotic areas

SLIDE 25



Protected Areas

Other categories:

- National parks
- Game refuge
- Managed resource protected areas
- Marine reserves
- Watershed forest reserves
- Mangrove reserves
- Natural and historical landmarks
- Wilderness areas
- Identified virgin forests

Sources:

Republic Act No. 7586. (n.d.). Official Gazette. <https://www.officialgazette.gov.ph/1992/06/01/republic-act-no-7586/>
 Republic Act No. 11038 [PDF File]. (n.d.). <https://www.officialgazette.gov.ph/downloads/2018/06jun/20180622-RA-11038-RRD.pdf>

SLIDE 26



Protected Areas

- Consists of more than 7,100 islands
- One of the world's 17 mega-biodiversity countries
- Contains **two-thirds of the Earth's biodiversity** and around 70 to 80 percent of the world's plant and animal species
- Located within the, **Coral Triangle** at the center of the **highest marine diversity in the world**, which accounts for the rich and colorful marine life that scuba divers have come to expect from Philippine waters. Scientists have noted that there is a higher concentration of species per unit area in the Philippines than anywhere in Indonesia and Wallacea, and that the Philippines, particularly the Verde Island Passage, is the center of the center of marine shore fish diversity in the world.

Sources:
Biodiversity Management Bureau, Department of Environment and Natural Resources. (n.d.). *Guidebook to Protected Areas of the Philippines* [PDF File]. <https://www.bmb.gov.ph/index.php/e-library/publications/references/download/306/guidebook-to-protected-areas-of-the-philippines>
Philippine Biodiversity Strategy and Action Plan 2015-2028: Bringing resilience to Filipino Communities [PDF File]. (n.d.). <https://www.cbd.int/doc/world/ph/ph-nbsap-v3-en.pdf>

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- **Question 13: What do you think is the current state of the Philippine environment?** (Answers to this question may not be as accurate as the ones enumerated below. Answers may not also be limited to the ones presented.)

Possible Answers:

According to Avanceña (2018):

- a. The Philippines is located within the Coral Triangle and the center of marine biodiversity which is blessed with a diverse range of marine flora and fauna. Its terrestrial biodiversity boasts of 8,000 species of flowering plants, 1,000 kinds of ferns, and 800 species of orchids, as well as a variety of animals such as wild hog, deer, wild carabao, monkey, civet cat, and rodents, among others.
 - b. There has been an eradication of 70 percent of the first growth forest, while the planting of invasive plant species does not help with the reforestation efforts.
 - c. Coral colonies in the Philippines are also in danger. Some notable reasons include the unwanted territorial disputes with China for the West Philippine Sea, the destruction of 60 percent of coral colonies due to overfishing and other forms of destructive fishing and pollution.
 - d. The Philippines has the best environmental laws, but these laws lack proper implementation.
- **Question 14: Is media coverage on the Philippine environment enough to raise awareness? Why or why not?** (The questions will be answered based on the students' observations, especially how their consumption of media content shapes their awareness on environmental issues in the country.)
 - **Question 15: Why do we have to protect these biodiversity areas?** (Answers to this question may not be as accurate as the ones enumerated below. Answers may not also be limited to the ones presented below.)

Possible Answer/s:

According to the Australian government’s Department of Agriculture, Water and the Environment (n.d.):

- a. Biodiversity is a necessity for survival.
- b. Biodiversity is the foundation of all the provisions of a healthy environment, along with the goods and services needed by the people—namely clean air and water, food, and other products.
- c. Biodiversity provides recreational, cultural, and spiritual nourishment that plays a role in our personal and social well-being.

D. Podcast Replay: Threats to Biodiversity in the Philippines

(The teacher will play the second part of the podcast [TIMESTAMP: 05:00-09:26], which features the various threats to Philippine biodiversity. Show SLIDES 27-28.)

SLIDE 27



SLIDE 28

KAYANG-KAYA! PODCAST

Kayang-Kaya! is a 10-episode podcast in Filipino that follows the adventures of three senior high school students, Kali, Naya, and Alab, as they seek to understand and uncover issues confronting the environment. As an educational tool, the podcast serves to supplement classroom discussion using aural storytelling.

In *Episode 2*, titled “*Kakaunti na lang ba talaga ang mga isda natin sa Pilipinas?*”, Kali’s curiosity sparked her quest to find out whether the rumors on decreasing fish supply are true or not. She meets Tito Greg, Alab’s uncle and a fisherman residing in Barangay Bughaw. Join Kali and Alab as they learn more about the state of the Philippine environment.

- **Question 16: Based on the podcast, what are the threats to biodiversity?**

Possible Answer/s:

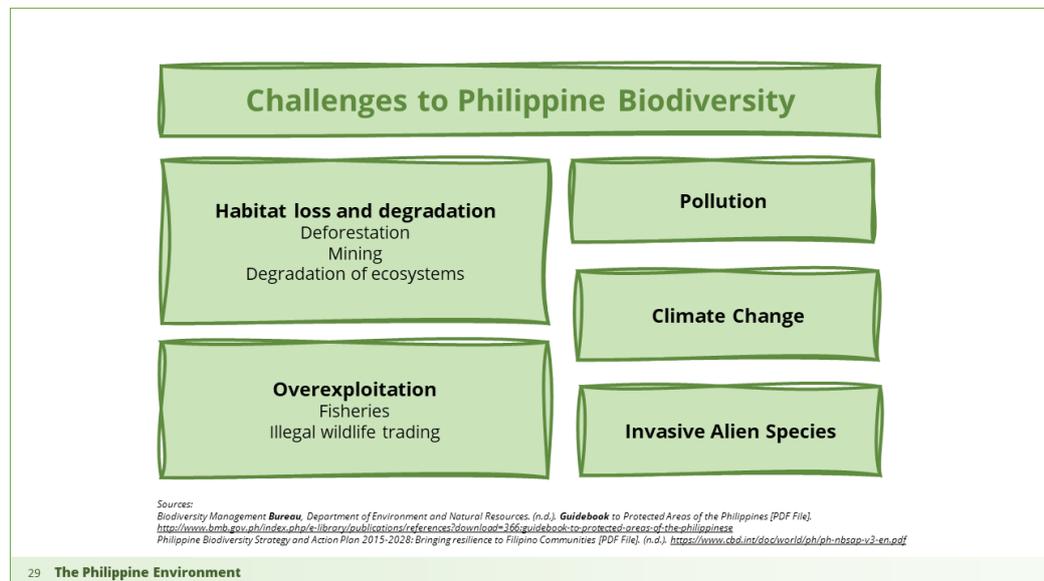
1. Habitat loss and degradation
2. Overexploitation
3. Pollution
4. Climate change
5. Invasive alien species

- **Question 17: Based on the discussion in the podcast, how do these threats negatively impact the Philippine environment? (Show SLIDE 29.)**

Possible Answer/s:

1. Species are forced to leave their natural habitats
2. The survival of the species is at risk.
3. Fish and crop production experiences decline.

SLIDE 29



- **Question 18: Is it possible to solve the issues stated in the podcast? If yes, how? If no, why not? (The question will be answered based on the students' perceptions of the issues discussed.)**
- **Question 19: In the Philippines, do you know some conservation efforts that the government and other nongovernment organizations are doing? (Students may be asked to enumerate the organizations concerned with biodiversity conservation. Answers to this question may not be limited to the ones presented below.)**

Possible Answer/s:

World Wide Fund for Nature, Waves for Water, Save Philippine Seas, Earth Island Institute, Greenpeace Philippines, Haribon Foundation, Rare, Mother Earth Foundation, Philippines Biodiversity Conservation Foundation, Marine Wildlife Watch of the Philippines (Barleta, n.d.).

*(Formal discussion: The teacher will present various legislations and programs by the government to protect the Philippine environment. Show **SLIDES 30–35.**)*

SLIDE 30



EXECUTIVE ORDER NO. 192, SERIES OF 1987

This EO allows for the formation of a Department of Environment and Natural Resources as the primary agency responsible for the **conservation, management, development, and proper use of the country's environment and natural resources**, specifically forest and grazing lands, mineral resources, including those in reservation and watershed areas, and lands of the public domain, as well as the licensing and regulation of all natural resources as may be provided for by law in order to ensure equitable sharing of the benefits derived therefrom for the welfare of the present and future generations of Filipinos.

Sources:
Department of Environment and Natural Resources. (n.d.). Wikipedia. https://en.wikipedia.org/wiki/Department_of_Environment_and_Natural_Resources
MANDATE (E.O. 192, s. 1987) (n.d.). DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES. <https://www.denr.gov.ph/index.php/about-us/mission-vision>

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SLIDE 31



**REPUBLIC ACT NO. 9147:
WILDLIFE RESOURCES CONSERVATION AND PROTECTION ACT**

This act provides for the conservation and protection of wildlife resources and their habitats, appropriating funds therefor and for other purposes. It aims to:

- conserve and protect wildlife species and their habitats to promote ecological balance and enhance biological diversity;
- regulate the collection and trade of wildlife;
- pursue, with due regard to the national interest, the Philippine commitment to international conventions, protection of wildlife and their habitats; and
- initiate or support scientific studies on the conservation of biological diversity.

Source: Republic Act No. 9147. (n.d.). Official Gazette. <https://www.officialgazette.gov.ph/2001/07/30/republic-act-no-9147/>

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SLIDE 32



REPUBLIC ACT 6969: TOXIC SUBSTANCES, HAZARDOUS AND NUCLEAR WASTE CONTROL ACT OF 1990

The law aims to regulate restrict or prohibit the importation, manufacture, processing, sale, distribution, use, and disposal of chemical substances and mixtures that present an unreasonable risk to human health. It likewise prohibits the entry, even in transit, of hazardous and nuclear wastes and their disposal into the Philippine territorial limits for whatever purpose; and to provide advancement and facilitate research and studies on toxic chemicals.

Source: Major Environmental Laws. (n.d.). DENR EMB Environmental Compliance Assistance Center. http://ecac.emb.gov.ph/?page_id=43

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SLIDE 33



REPUBLIC ACT 8749: PHILIPPINE CLEAN AIR ACT OF 1999

The law aims to achieve and maintain clean air that meets the National Air Quality guideline values for criteria pollutants, throughout the Philippines, while minimizing the possible associated impacts on the economy.

Source: Major Environmental Laws. (n.d.). DENR EMB Environmental Compliance Assistance Center. http://ecac.emb.gov.ph/?page_id=43

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SLIDE 34



**REPUBLIC ACT 9275:
PHILIPPINE CLEAN WATER ACT OF 2004**

The law aims to protect the country's water bodies from pollution from land-based sources (industries and commercial establishments, agriculture, and community/household activities). It provides comprehensive and integrated strategies to prevent and minimize pollution through a multi-sectoral and participatory approach involving all the stakeholders.

Source: Major Environmental Laws. (n.d.). DENR EMB Environmental Compliance Assistance Center. http://ecac.emb.gov.ph/?page_id=43

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SLIDE 35



**REPUBLIC ACT 9003:
ECOLOGICAL SOLID WASTE
MANAGEMENT ACT OF 2000**

In partnership with stakeholders, the law aims to adopt a systematic, comprehensive, and ecological solid waste management program that shall ensure the protection of public health and the environment. The law ensures proper segregation, collection, storage, treatment, and disposal of solid waste through the formulation and adaptation of the best eco-waste products.

Source: Major Environmental Laws. (n.d.). DENR EMB Environmental Compliance Assistance Center. http://ecac.emb.gov.ph/?page_id=43

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Gathering of Evidence and Concept Formation

This will serve as the justification for their claims. The pieces of evidence will come from the previously discussed concepts which were discussed in class. Show **SLIDES 36-38**.

Do you agree that biodiversity in the Philippines and the rest of the world is declining? If yes, why? If no, why not? What can we do to slow down the declining status of the Earth's biodiversity?

Elicit the following ideas below to establish the consensus:

The Earth's biodiversity is rapidly declining due to various threats, such as natural climate change, pollution, environmental destruction, species invasion, overhunting, and overuse of resources. These threats are mostly human driven. Thus, in recent years, conservation has been advocated in the form of laws, government-initiated projects, efforts from NGOs, and other advocacies. They need to be protected as biodiversity provides the fundamental building blocks for the many goods and services that a healthy environment provides.

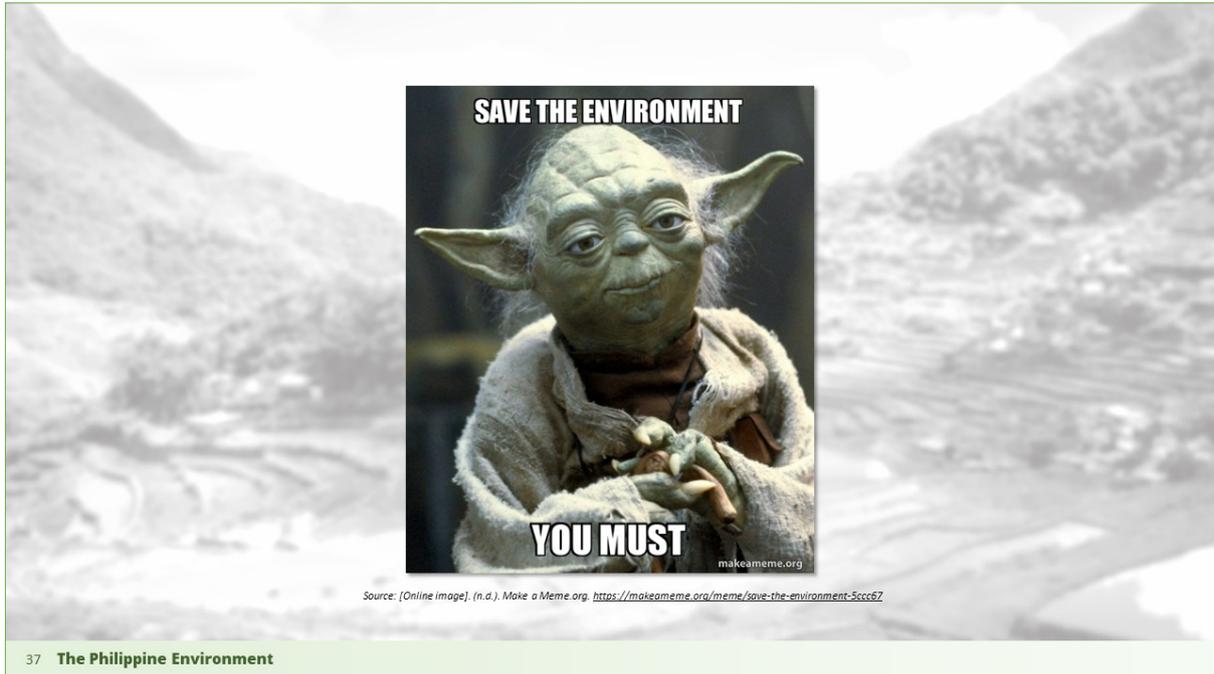
SLIDE 36



Source: [Online image]. (n.d.). Meme Generator. <https://memegenerator.net/instance/80422443/evil-plotting-raccoon-yes-save-the-environment>

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SLIDE 37



SLIDE 38



E. Slogan making Activity

1. The teacher distributes the Slogan Worksheet to the students. For the remaining time of the class, the students will create a slogan on how the youth can conserve and protect the Philippine environment. They are highly encouraged to be creative with their outputs.
2. Essay Writing: In three to five sentences, ask the students to briefly explain their slogan.
3. The teacher will collect all the worksheets for grading.

Related Concepts

1. Biodiversity

- It “is thought to have first been coined as a contraction of the term ‘biological diversity’ in 1985 and then popularized by several authors. Biodiversity is the variety of life on Earth, that it includes all organisms, species, and populations, the genetic variation among these, and their complex assemblages of communities and ecosystems. It also refers to the interrelatedness of genes, species, and ecosystems and in turn, their interactions with the environment” (United Nations Environment Programme, 2010).

2. Terrestrial biodiversity

- It is “the variety of life forms on the land surface of the Earth” (National Climate Change Adaptation Research Facility, n.d.).

3. Marine biodiversity

- It “includes coastal and marine plant and animal species, their genetic variety, the habitats and ecosystems they form part of, and the ecological processes that support all of these” (World Wide Fund for Nature, n.d.).

4. Wildlife

- It is the collective of “wild forms and varieties of flora and fauna, in all developmental stages, including those which are in captivity or are being bred or propagated” (Wildlife Resources Conservation and Protection Act, 2001).
 - a. **Endemic species**
These species are “native to the region, and which area of distribution is restricted to a small place” (International Union for Conservation of Nature, 2018).
 - b. **Alien species**
These species are “not native to the ecosystem in which it is introduced” (International Union for Conservation of Nature, 2018).
 - c. **Rare species**
These species are “worldwide populations of small species that are not currently endangered or are not vulnerable, but that may face such risks in the future. These species are located in geographically restricted areas or specific habitats, or are scantily scattered on a large scale” (International Union for Conservation of Nature, 2018).

d. **Threatened species**

These species are “a general term to denote species or subspecies considered as critically endangered, endangered, vulnerable or other accepted categories of wildlife whose population is at risk of extinction” (Wildlife Resources Conservation and Protection Act, 2001).

e. **Endangered species**

These species or subspecies are “not critically endangered, but whose survival in the wild is unlikely if the causal factors continue operating” (Wildlife Resources Conservation and Protection Act, 2001).

5. **Habitat**

- It is “a place or environment where species or subspecies naturally occur or have naturally established its population” (Wildlife Resources Conservation and Protection Act, 2001).

6. **Threats to Philippine environment**

a. **Reclamation**

It is “the deliberate process of converting foreshore land, submerged areas or bodies of water into permanent land by filling or other means using dredge fill and other suitable materials for specific purpose/s” (PRA Adm. Order 2019-4).

b. **Invasive alien species**

It is a subset of introduced species or non-native species that are rapidly expanding outside of their native range. Invasive species can alter ecological relationships among native species and can affect ecosystem function and human health” (International Union for Conservation of Nature, 2018).

c. **Pollution**

It is “any substances in water, soil, or air that degrade the natural quality of the environment, offend the senses of sight, taste, or smell, or cause a health hazard. The usefulness of the natural resource is usually impaired by the presence of pollutants and contaminants” (National Statistical Coordination Board & United Nations Development Programme, 2000).

d. **Climate change**

It is “any change in climate over time, whether due to natural variability or as a result of human activity” (International Union for Conservation of Nature, 2018). It is also defined by the United Nations Framework Convention on Climate Change (UNFCCC) as “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable periods” (International Union for Conservation of Nature, 2018).

e. **Global warming**

It is “an increase in global average surface temperature due to natural or anthropogenic climate change” (International Union for Conservation of Nature, 2018).

f. **Ocean acidification**

It is the process by which carbonic acid forms as carbon dioxide dissolves in sea water, decreasing the ocean’s pH. It is one of the “deadly trio” of climate change, including increased ocean temperatures and oxygen loss, and “has the potential to change marine

ecosystems and impact many ocean-related benefits to society such as coastal protection or provision of food and income” (International Union for Conservation of Nature, 2017).

g. **Habitat degradation**

It is “a decline in habitat quality for a species, e.g. related to changes in food availability, cover, or climate” (International Union for Conservation of Nature, 2018).

h. **Habitat loss**

It is “an area that has become totally unsuitable for a species” (International Union for Conservation of Nature, 2018).

i. **Poaching**

It is the “illegal hunting” (International Union for Conservation of Nature, 2018) of wildlife.

7. **Indigenous peoples**

- It refers to “a group of people or homogenous societies identified by self-ascription and ascription by others, who have continuously lived as an organized community on communally bounded and defined territory, and who have, under claims of ownership since time immemorial, occupied, possessed, and utilized such territories, sharing common bonds of language, customs, traditions, and other distinctive cultural traits, or who have, through resistance to political, social and cultural inroads of colonization, non-indigenous religions, and cultures, become historically differentiated from the majority of Filipinos. ICCs/IPs shall likewise include peoples who are regarded as indigenous on account of their descent from the populations which inhabited the country, at the time of conquest or colonization, or at the time of inroads of non-indigenous religions and cultures, or the establishment of present state boundaries, who retain some or all of their own social, economic, cultural and political institutions, but who may have been displaced from their traditional domains or who may have resettled outside their ancestral domains” (Indigenous Peoples’ Rights Act, 1997).
- It is also known as the indigenous cultural communities.

8. **Environmental defender**

- It is “anyone who is defending environmental rights, including constitutional rights to a clean and healthy environment, when the exercise of those rights is being threatened” (United Nations Environment Programme, n.d.).

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Slogan-making Worksheet

Name of Student:	Score:
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Grade and Section:	/20
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Instructions: In the space provided below, create a slogan on how we can conserve and protect our natural resources in the Philippines.

Essay: In three to five sentences, explain your slogan.