

LESSON NOTES

Subject: Basic Science

Week 15

Year/Level: 9

<b>Strand</b>	1 : LIVING THINGS AND THE ENVIRONMENT
<b>Sub Strand</b>	1.3 : BIODIVERSITY, CHANGE AND SUSTAINABILITY
<b>Content Learning Outcome</b>	<ul style="list-style-type: none"><li>❖ <b>Examine</b> and <b>describe</b> the potential long-term effects of change in biodiversity caused by human action on ecosystems and <b>communicate</b> ways of conserving ecosystems.</li><li>❖ <b>Appreciate</b> the fragility of the ecosystem and the need to conserve them.</li></ul>

The Work of Biosecurity Authority of Fiji

Biosecurity Authority of Fiji is mandated to:

- ❖ protect Fiji's agricultural sector from the introduction and spread of animal and plant pests and diseases.
- ❖ manage quarantine controls at our borders to minimise the risk of exotic pests and diseases entering the country.
- ❖ provide import and export inspection and certification to help retain Fiji's favourable animal, plant and human health status and wide access to overseas export markets.

Foreign pests and disease

- pose a huge danger to Fiji's plants, animals and environment.
- American iguana:
  - ✓ declared pest in Fiji.
  - ✓ brought illegally into the country
  - ✓ released in Qamea Island.
  
  - ✓ spread to:
    - ❖ Laucala
    - ❖ Taveuni
    - ❖ Matagi Island
  
  - ✓ could have disastrous effect on our:
    - ❖ environment
    - ❖ biodiversity
    - ❖ food security / food sustainability
    - ❖ economy.
    - ❖ endemic plants
    - ❖ bird eggs and nestlings
  
  - ✓ threat to food security in villages and islands such as:
    - ❖ dalo leaves
    - ❖ cassava tops
    - ❖ bele
    - ❖ tomatoes
    - ❖ beans
    - ❖ yam vines.
    - ❖ cabbage

- ✓ *American iguanas pose a risk to our endangered native iguanas through possible transmission of iguana-specific diseases, parasites and pathogens from American iguanas to the endemic Fijian iguanas.*
- ✓ The eradication of these iguanas is a challenge as they are:
  - ❖ arboreal (tree dwelling)
  - ❖ well camouflaged
  - ❖ have excellent eyesight
  - ❖ excellent swimmers
  - ❖ usually climb a tree
  - ❖ drop into water where they can stay submerged for an hour or more.

**Note:** A good way of eradication would be locating all American iguana nesting areas and controlling the breeding by destroying the eggs.

### **Natural Solution on Biodiversity Conservation and Protected Areas**

- Fencing
- Marine Protected areas
- Community involvement

### **Sustainability and the Need for Conservation**

#### **Sustainability:**

- ❖ taking no more from nature than is naturally replaced in the long run.
- ❖ Sustainable use can keep going for a long time.
- ❖ keeping things in a state of balance, but is not the same as leaving nature untouched..

#### **Conservation:**

- ❖ protection of valuable resources and management of forests, oceans, swamps and many more.
- ❖ protection of our planet's biodiversity and the protection of many of the things we consider very useful.
- ❖ needed because it is important for the entire planet, especially for biodiversity
- ❖ protects endangered species from becoming extinct.

#### **Kinds of conservation:**

- ✓ Wildlife conservation
- ✓ Soil conservation
- ✓ Energy conservation

#### **Ways that may contribute to helping in conservation:**

- ✓ Donating to organizations that promote conservation
- ✓ planting a tree
- ✓ picking up rubbish and encouraging people to help with conservation.

#### **WildLife Conservation:**

- ❖ people try to protect various endangered species from becoming extinct includes both plants and animals that have been identified as being at risk.
- ❖ protecting their habitats as well.

❖ **Factors that lead to the extinction of such species:**

- ✓ Deforestation
- ✓ Overhunting
- ✓ pollution.

**Conservation Groups in Fiji**

There are a number of conservation groups both government and non-government organizations which play a role in the conservation of biodiversity of plants (flora) and animals (fauna) in Fiji:

**1) World Wildlife Fund (WWF)**

- world top organizations in preserving wildlife.
- works in several countries all over the world
- work with governments, providing them with advice, policy alternatives, etc.
- uses the best scientific knowledge available to:
  - a) protect ecosystems
  - b) come up with various development options with regard to:
    - ✓ preservation
    - ✓ efficient use of natural resources
    - ✓ other environmental issues that have a great impact on the lives of endangered species.

**2) BirdLife Fiji**

- **Forest of the Natewa Peninsula (since 2005):**
  - ✓ part of the island of Vanua Levu
  - ✓ identified as a site of National Significance in the National Biodiversity Action Plan.
  - ✓ also designated as an Important Bird Area (IBA) by Bird Life International.
  - ✓ also assigned as a Key Biodiversity Area (KBA) by Conservation International.
  - ✓ Consists of a high biodiversity of:
    - birds
    - Gobids
    - seven of the nine subspecies endemic to Vanua Levu island, such as the Silk tail (*Lamprolia victoriae*), make this an important area to conserve.
- Works with the communities of the Natewa Tunuloa Peninsula to promote conservation of avifauna and biodiversity.

**3) Mareqeti Viti ( NatureFiji)**

- Fiji's first NGO
- established in 2006 for terrestrial conservation.
- works solely for the conservation and sustainable management of Fiji's unique natural heritage.
- **Role:**
  - a) Raising the level of conservation and environmental awareness and education in all aspects of wildlife conservation and management.
  - b) Provide opportunities for children to learn of the remarkable natural heritage of our islands and seas.
  - c) Recognize the key role of Fiji's indigenous landowners and promote to them a better understanding and awareness of Fiji's wildlife.
  - d) Assist in conservation projects, wildlife management and island restoration projects.

**ACTIVITY:**

1) State the role of Biosecurity of Fiji.

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2) Name a pest in Fiji that was brought illegally and is released in Qamea Island.

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3) State a reason as to why eradicating (getting rid of) the mentioned pest in part (2) above is challenging.

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4) State three natural solution on conserving biodiversity.

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_

5) Name and state the role of three Conservation groups in Fiji.

- a) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- b) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- c) \_\_\_\_\_  
\_\_\_\_\_  
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...STAY SAFE...