



**Sabah
Wetlands
Conservation
Society**

MAY 2017

SWCS NEWSLETTER

**Sabah Wetlands
Conservation Society
(SWCS)**

A Non-Government
Organization working on
Conservation of
Wetlands in Sabah

**Established on
22 August 2005**

OBJECTIVES

- ♦ To promote the conservation of wetlands in Sabah and the variety of plants, birds and other kinds of organisms found in them.
- ♦ To raise public awareness and appreciation of wetlands and public involvement in protecting wetlands.
- ♦ To manage Kota Kinabalu Wetlands (KKW) as a model wetlands centre for the purpose of conservation, education, recreation, tourism and research.

Contact us:

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or
swcs@sabahwetlands.org

Like us on Facebook:
(<https://www.facebook.com/SabahWetlandsConservationSociety>)

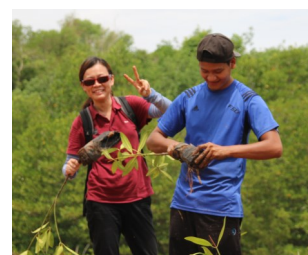
Visit our Website:
www.sabahwetlands.org
Visit us today : Tue-Sun
(including PH)
8.00am–6.00pm

CSR - CIMB Community Link Project: Mangrove Tree Planting Planted by volunteers from SM La Salle (24 May 2017)



Update!

2500 trees to be planted; 600 trees has been planted including 200 by this group. 1900 trees to go!



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Blushing Bracket Fungus (*Daedaleopsis confragosa*) - a common fungus found in mangrove, growing on dead *Avicennia* sp. tree.

Photo credit: Yuichiro Watanabe

Environmental Education

SM ALL SAINTS (2 MAY 2017)
Volunteer work - mangrove cleaning



SM ALL SAINTS (19 MAY 2017)
Volunteer work - transferring mangrove seedlings to planting site



HONG KONG STUDENTS (9 MAY 2017)
EEP - mangrove guided walk



CANADA (23 MAY 2017)
EEP - mangrove guided walk



GAP STUDENTS (10 MAY 2017)
EEP, handcrafting and Volunteer work - mangrove cleaning



SK WESTON, BEAUFORT (18

SM ALL SAINTS (25 MAY 2017)
Volunteer work—leveling trail



KELAB MARINERS, UMS (14 MAY 2017)
EEP - mangrove guided walk



PUSAT PEMBELAJARAN 1 LEARNING (26 MAY 2017)
EEP - mangrove guided walk



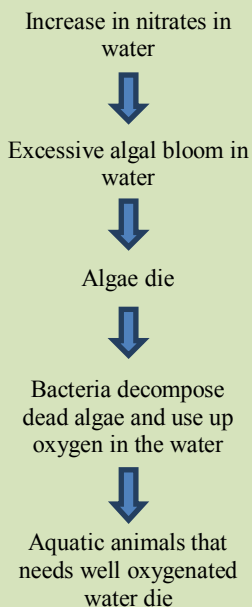
Words to Know

Algae: Single-celled or multicellular plants or plant like organisms that contain chlorophyll, thus making their own food by photosynthesis. Algae grow mainly in water.

Nitrate: A salt or ester of nitric acid, which is a transparent corrosive liquid composed of nitrogen, hydrogen, and oxygen.

Phosphate: A salt or ester of a phosphoric acid, which is any of three acids that are formed when the oxide of phosphorus reacts with water

The Process



EUTROPHICATION

By Zulhelmy

Eutrophication is the enrichment of an ecosystem with chemical nutrients, typically compounds containing Nitrate (nitrogen), phosphorus or both. It is characterized by excessive plant and algal growth due to the increased availability of one or more limiting growth factors needed for photosynthesis.

Sources:

1.) Fertilizers (nitrates and phosphates).

Agricultural practices and the use of fertilizers on lawn, golf courses and other fields contribute to phosphate and nitrate nutrient accumulation. When these nutrients are washed by surface runoff into lakes, rivers, oceans and other surface water, it feeds the plankton, algae and other aquatic plant life and it increases the photosynthesis activity.

2.) Concentrated animal feeding operations.

The concentrated animal feeding operation normally discharges much nutrients to the water resources such as river and lake and it accumulates in high concentrations thereby plaguing the water bodies by recurring cyanobacterial and

algal blooms.

3.) Aquaculture. If the aquaculture is not properly managed, the unconsumed food particles together with the fish excretion can significantly increase the levels of nitrogen and phosphorus in the water which results in dense growth of microscopic floating plants.

4.) Natural events. The flood and natural flow of water like river and streams can also wash excess nutrients of the land into the water systems thus causing the excessive growth of algal blooms.

Effects:

Structural changes to the ecosystem such as; increased production of algae and aquatic plant which commonly known as algal blooms. Besides that, depletion of fish species may happen because the algal blooms limit the amount of dissolved oxygen that is required for respiration by other aquatic animals. Algal blooms upset the delicate natural balance of plant and animal ecosystem in a waterway or wetlands. A high abundance of algae can block the sunlight to underwater bay grass. Moreover, general deterioration of water quality and limits access to safe drinking water.

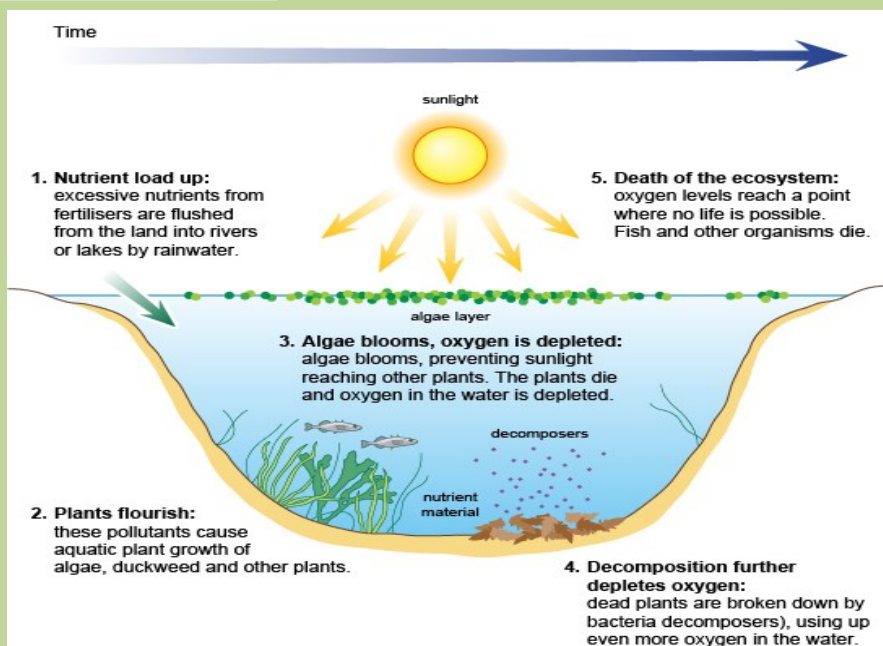
In the coast of Sabah, there were no Harmful Algal Bloom (HAB) case had been reported although *Pyrodinium bahamense* var. *compressum* had been reported a decade ago. It was reported in the coastal water of Sabah in 1976 and many human illnesses have been recorded.

One of the worse eutrophication



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happened in Hong Kong in 2016. The algal blooms such as *Karenia papilionacea* or *Karenia mikimotoi* species have been reported which both are harmful to fish, with the latter a proven killer due to its effects on the gill tissues of fish and their breathing systems. The situation has been serious enough to prompt the government to launch an emergency relief fund for marine culturists affected. Besides the red tide killed 80 percent of the stock at fish farms across Hong Kong. (South China Morning Post, 2016)



Reference:

- Roy R. N. 1977. Red tide and outbreak of paralytic shellfish poisoning in Sabah. Med. J. Malaysia, 31: 247-251.
- Schindler, D. W. Recent advances in the understanding and management of eutrophication, Limnology and Oceanography 51, 356-363 (2006)
- Ting, T.M. and T.S.W. Joseph, 1989, Summary of Red Tide and Paralytic Shellfish Poisoning in Sabah, Malaysia. In: Biology, Epidemiology and management of *Pyrodinium* Red tide, Hallegraeef, G.M and J.L. Maclean (Eds). The World Fish Centre, Manila, Philippines, ISBN-13: 97897110222648, pp: 19-26.



Volunteering for KK Wetlands can be a great fun! If you have passion for the environment or just want to gain more outdoor experiences, this is the appropriate channel. Do not miss the chance! Lets care for our wetlands.

All you need to do is to sign up as volunteer. Please contact us for further information.

✉ Send us an email swcs@sabahwetlands.org



Let's Clean up the Wetlands



Other voluntary activities: Nursery work and mangrove tree planting

If you have an old laptop or PC (in working condition) which you no longer need, please donate to us.

**Contact us at
088 - 246 955**

Kota Kinabalu Wetlands

This is a 24-hectare mangrove forest reserve right in the heart of the city of Kota Kinabalu that has been designated as a State Cultural Heritage site since 1998. It is managed by SABAH WETLANDS CONSERVATION SOCIETY.

This environmental education centre on the site has been in operation since 2000. It has an administrative building with an exhibition hall, a 1.5 km boardwalk, a bird hide, observation tower and outdoor class room.

Benefits of Being Our Member



What Can You do to Help?

- Be a member
- Be a volunteer
- Perform Environmental Voluntary Work
- Carry out Corporate Social Responsibility

- As a member, you will be able to participate in members' events, enjoy free entry to Kota Kinabalu Wetland.
- Eligible for 50% discount for binocular rental*.
- Most importantly, you know you are helping this ecosystem to survive and provide essential services to it.

*Subject to change without further notice

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SUPPORT US BY JOINING OUR PROGRAMMES:

Environmental Educational

Programmes:

- KK Wetlands Mangrove Experience Programme
- Mangrove Conservation Experience Programme (includes tree planting in Tuaran)
- Handcrafting from Mangrove

Environmental Voluntary Work

(* Contact us for activity booking form)

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We are fighting none other than our own greed...