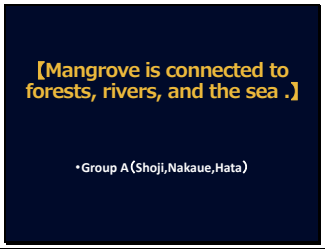
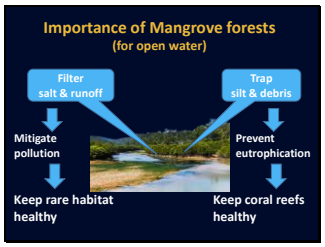
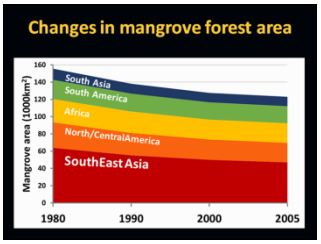
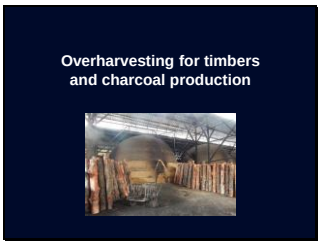
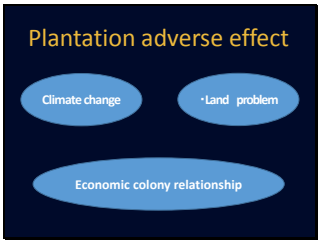
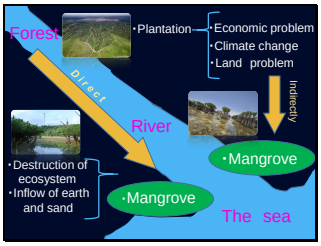
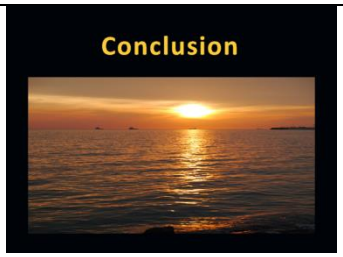
Ａ：　「マングローブと自然環境の繋がり」
～Mangrove is connected to forests, rivers, and the sea～

小路昌秀、中植健太、畑朝飛

（1）		We'd like to talk about the connection between mangroves and forests, rivers, and the sea.
（2）		So, What is a mangrove? Mangroves include several tree species that grow in brackish water, in the tropics and subtropics.
（3）		Mangrove trees can filter the salt of the seawater and the water pollutants such as heavy metals, so that provide and keep rare habitats for brackish water organisms. Mangroves can also regulate eutrophication that causes negative impacts on coral reefs.
（4）		Mangroves are important not only for water organisms but also for land safety because their complex root system can protect the land from soil erosion and wave action. It is reported that, in the Sumatra earthquake, the Tsunamis damage was less in mangrove forests than other areas where mangrove trees had been cut down.
（5）		However, mangrove forests have been decreasing year by year.
（6）		Please look at this chart. It is shown that Southeast Asia has a 25% reduction over 25 years in mangrove area. It is because of the large scale exploitation by human beings.

(7)		The biggest cause of the mangrove deforestation is the development of shrimp aquaculture. Which threaten mangrove forest. Southeast Asian countries are the world's leading countries in exporting shrimp. It will cause a great threat to the future of mangrove forest.
(8)		The second biggest cause is overharvesting for timbers and charcoal production. We visited a charcoal factory in Perak. What a big scale ! I thought. Mangrove charcoal burns at a higher temperature and lasts longer than charcoal of terrestrial trees. In recent decades, mangroves have been cut and processed by global companies to be exported worldwide. The large-scale cutting will cause serious damage to the coastal ecosystem.
(9)		The effect. Large scale plantations will cause some problems. Firstly, they destroy the ecosystem in the area. Secondly they change the climate. Thirdly, they cause economic problems for colony relationship between the local inhabitants and foreign companies.
(10)		Do you all know what the threat to mangrove forest are ? Let me explain. First, deforestation is obviously a threat to mangroves. Other than that, large scale plantation of commercial crops are also one of the threats. For example oil palm plantation that has been produced in large scale areas .It will cause climate change and economic problems and will directly spread to the downstream mangrove.
(11)		In recent years, people realized the importance of mangrove forests, and mangrove conservation activities such as protection, silviculture, and planting are increasing. However, the planting area is still only a fraction of mangrove areas and doesn't help much.
(12)		For the conclusion , I would like to recommend to all people that we should change our attitude toward the natural environment. We can surely find the knowledge and means to solve problems with traditional wisdom and skills. This is a model to solve other problems in the world.