

## Palm Oil

Lesson Map: <http://esriaustralia.com.au/education/SpatialActivity39>

### Engage

#### Ingredients

- Palm oil is the largest consumed vegetable oil in the entire world. When you walk into a supermarket, nearly half of all the products will contain palm oil.
- ? What are five common supermarket products that contain palm oil?
1. Noodles
  2. Chocolate
  3. Icecream
  4. Soap
  5. Lipstick
- ? It can be tricky to see palm oil on an ingredient list. Look at the list below and highlight which ingredients you think are from palm oil. Hint: look for words derived from the base word 'palm'.

Vegetable Oil, Calcium Silicate, Vegetable Fat, Palm Kernel, Palm Kernel Oil, Monosodium Glutamate, Palm Fruit Oil, Gelatin, Palmate, Soy Lecithin, Palmitate, Modified Food Starch, Palmolein, Glycerol, Stearate, Mannitol, Stearic Acid, Elaeis Guineensis, Palmitic Acid, Palm Stearine, Palmitoyl Oxostearamide, Rennet, Palmitoyl Tetrapeptide-3, Sodium Laureth Sulfate, Sucrose, Sodium Lauryl Sulfate, Sodium Kernelate, Ascorbic Acid, Sodium Palm Kernelate, High Fructose Corn Syrup, Sodium Lauryl Lactylate/Sulphate, Hydrated Palm Glycerides, Vanilla Extract, Etyl Palmitate, Stevia Leaf Extract, Octyl Palmitate, Palmityl Alcohol

### Explore

#### Ten degrees

- Click on the Lesson Map URL above to open the map. In the 'Details' pane, under 'Content', tick the first checkbox to turn on the layer 'Production (1000MT)'. Turn off all other layers.

**Remember:** you can see the Legend by clicking 'Details' > 'Legend'

- ? What two countries had the highest production of palm oil so far in 2018? **Indonesia**

#### Time

30 minutes

#### Activity

Investigate the spatial distribution of palm oil plantations

#### Learning Outcome

Students will be able to:

- Investigate the state of palm oil in supermarkets
- Identify the spatial distribution of plantations
- Analyse optimal conditions for palm oil growth
- Examine global consumption of palm oil

#### ACARA Curriculum Link

Year 9 Biomes and Food Security

[ACHGK060](#) | [ACHGK062](#)

Year 9 Geographies of Interconnection

[ACHGK068](#)

#### Teacher Feedback:

To share your feedback on this, or any Spatial Activity, please contact

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and Malaysia.

- ? What do you notice about the spatial distribution of palm oil? *It is mostly grown near the equator.*
- ? What does that tell you about the climate that oil palm trees need to grow in? *Oil palm need to grow close to the equator in tropic areas, where temperature and rainfall are high.*
- ? Oil palm grows best within ten degrees north or south of the equator. What is problematic about this? *The tropics are known as biodiversity hot spots, where flora and fauna flourish. The monumental growth of palm oil in these areas threatens native species, persons, and has a lasting impact on the environment.*
- ? Turn on the layer 'Area Harvested (1000HA)'. How many thousand hectares was harvested for palm oil? *11,300 thousand hectares.*
- ? Turn on the layer 'Biodiversity threatened species'. What do you notice between the spatial relationship of threatened species and area harvested? *Where there are large scale harvests occurring, there is a higher percentage of threatened species.*

## Explain

### Consumption

- Turn on the layer 'Imports (1000MT)' and turn off all other layers.
- ? Which three countries had the highest imports of palm oil? *India, China and Pakistan.*
- ? Why do Pakistan import so much palm oil? Secondary research may be needed. *Pakistan import a large amount of palm oil for food, in particular the production of ghee, a butter like substance.*
- ? Turn on the layer 'Domestic Consumption'. What country consumes a high amount, but do not import any? Why? *Indonesia, who consume 5800 thousand MT a year. They do not need to import any as they are the world's biggest producer.*

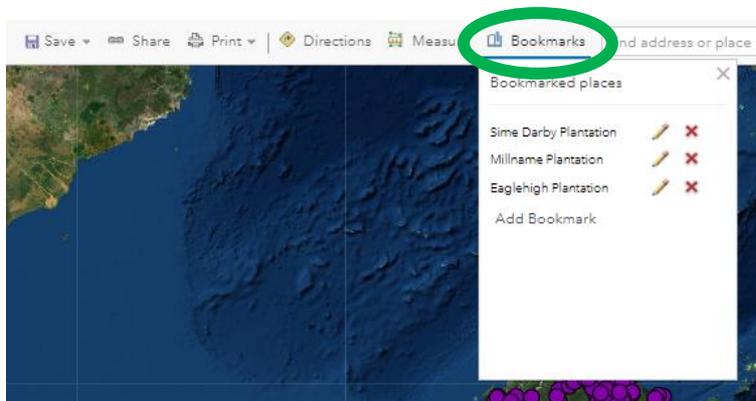
## Extend

### Looking at Indonesia from above

- Turn on the layer 'Palm Oil Mills'. Turn off all other layers. As you can see, most mills are in Indonesia. As a result of these large scale farms, the government have

created palm oil concessions.

- Palm oil concessions are government designated areas, where industrial scale oil palm can be farmed. Currently there are 155,245 square kilometers of land dedicated to palm oil concessions. Some of this land is still to be harvest for oil palms and currently may be inhabited. Turn on the layer 'Palm Oil Concessions' to see this.
- Lets investigate plantations in Indonesia. Turn on the layer 'World Imagery, Wayback' and turn off all other layers.
- Click through the bookmarks to see different plantations in Indonesia.



- You can see the large scale of these plantations. What are some impacts of these wide-scale plantations?
  - Loss of natural habitat
  - Disruption to ecosystems
  - Threaten to species
  - Race for land rights
  - Displacement of populations

## Next Steps:

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