

Agriculture, weed and land management.

Lesson Map: [Click here to open the map](#)

Engage

What is Buffel grass? What is a Landcover map?

- Click on the Lesson Map URL above to open the map.
- The map shows the clustered distribution of Buffel grass (*Cenchrus ciliaris*), Tree Crops and Landcover in Australia.
- ? What is Buffel grass? *[Is a species of grass native to Africa which was introduced to Australia in the mid-19th century and is known for its ability to thrive in arid and semi-arid environments as well as to increase the risk of wildfires in some forest ecosystems].*
- ? What is a Landcover map? *[map that shows types of physical coverage or vegetation present on the Earth's surface within a particular geographic area.]*
- ? Which are the crops displayed in the map? Is there a trend in their distribution? *[avocado, banana, citrus, macadamia, mango, olive, and truffle. They tend to be distributed along coastal areas]*

Explore

Is there any correlation between tree crops, Buffel grass and landcover?

- Be sure that the only visible layer is: Buffel Grass Records. Go to the first bookmark called 1. Australian Continent.
- ? Which of the states has the biggest cluster of Buffel Grass records? *[South Australia with a cluster of 10.007 or 10k features.]*
- Without moving the map from the bookmark, turn on the Sentinel2 10m LandCover layer.
- ? Which is the predominant landcover category in which the biggest Buffel Grass cluster is contained? *[Rangeland.]*
- ? Turn on the Tree Crops layer and turn off the Buffel grass layer. Are there any crops clusters in the rangeland landcover in central Australia? *[puts one small cluster of Mango]*

Download student worksheet [here](#).

Time
30 minutes

Activity

Investigate the relationship between land cover, Buffel grass and tree crops agriculture along Australia.

Learning Outcome

Students will be able to:

- Understand trends of tree crops and Buffel distributions
- Understand the environmental implications of current crop distributions using landcover maps for informative insights and decision making.

ACARA Curriculum Link

[Year 8 Geography – Unit 1: Landforms and landscapes](#)

[ACHGK051](#) | [ACHGS057](#) | [ACHGS058](#)

[Year 10 Geography – Unit 1: Biomes and food security](#)

[ACHGK060](#) | [ACHGK061](#) | [ACHGK063](#)
| [ACHGS065](#) | [ACHGS066](#)

[Senior secondary Curriculum – Geography. Unit 3: Land cover transformations](#)

[ACHGE065](#) | [ACHGE067](#) | [ACHGE071](#)
| [ACHGE072](#) | [ACHGE073](#) |
[ACHGE074](#) | [ACHGE075](#) | [ACHGE076](#)
| [ACHGE077](#) | [ACHGE079](#)

Explain

How does tree cover affect Buffel grass distribution?

- Turn on the Buffel grass layer and turn off the trees layer there any Australian state with any Buffel grass cluster? If so, what makes it different from the rest of Australia.

[Tasmania, it has a considerable Tree landcover]

Extend

Are the tree crops restricted to certain areas?

- ? Having on just the tree crops layer do you observe any trend of the tree crops distribution? (Specific by crop type) *[Olive and Truffle tree crops are restricted to the south of Australian continent, banana crops tend to be in the east coast, finally avocado, citrus, macadamia and mango have a similar trend to be in the northeast coast, and southwest coast].*
- Go to the Bookmark 2. Byron Bay. You will see a high concentration of Macadamia tree crops inland this area. Turn on the landcover layer.
- ? Do you see any pattern that could lead to important environmental impacts? *[There are many clusters located on tree covered zones, this could imply land clearing for having new macadamia tree crops].*
- Go to the last bookmark 3. South Carnarvon Turn repeatedly on and off the layer of Landcover.
- ? What can you observe and conclude from this area? *[Crops are strictly distributed along the Gascoyne River, due to their dependency on the water source. However, the landcover layer shows that there is no water, and everything belongs to another landcover category like crops].*
- ? Which could be the consequences of misinterpretation or misprocessing when obtaining and analysis the landcover maps. *[Answers will vary].*

Next Steps:

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Teacher Feedback:

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