

Mystery Landsat Images

Part 1: Making Predictions

Look at the three Landsat Mystery Image pairs carefully. Predict what type of area you think each image represents.

Mystery Image 1: _____

Mystery Image 2: _____

Mystery Image 3: _____

Part 2: Identifying features in natural-color images

A **natural-color composite image** consist of blue, green, and red visible light portrayed in a natural manner. The appearance of the image often resembles a color photograph. Active vegetation appears green, bare soil and fallow (not cultivated) fields are brown, urban structures are white, and clean water is often blue.

Look at the **natural-color image** of **Mystery Image 1**.

1. What types of prominent land cover features can you identify? Support each claim with evidence.

Hint: Remember to think about tone, size, texture, pattern, site, or association in the image.

2. What do you think is the dominant land cover type in this image?

Look at the **natural-color image** of **Mystery Image 2**.

3. What types of prominent land cover features can you identify? Support each claim with evidence.

Hint: Remember to think about tone, size, texture, pattern, site, or association in the image.

4. What do you think is the dominant land cover type in this image?

Look at the **natural-color image** of **Mystery Image 3**.

5. What types of prominent land cover features can you identify? Support each claim with evidence.

Hint: remember to think about tone, size, texture, pattern, site, or association in the image.

6. What do you think is the dominant land cover type in this image?

Part 3: Using false-color images to identify features

A **false-color composite image** consist of green, red, and near-infrared light portrayed in a false-color manner. Active vegetation appears red-pink, bare soil and fallow (not cultivated) fields are green, and urban structures are bluish-white. Clean water bodies appear black.

Residential areas, however, may have a speckled appearance of light blue/white and red. The light blue/white indicates buildings and pavement, and the red indicates the grass and trees that may line the streets and surround places where people live.

Helpful hints to identify features in false-color images:

- Red represents actively growing green vegetation. A large red area could be a forest.
- Black represents water. Black areas may be oceans, lakes, ponds, or rivers.
- Green usually represents fields in agricultural areas.
- Blue-white represents urban areas.

Look at the **false-color image** of **Mystery Image 1**.

7. What is the most dominant color in this image? What do you think this represents?

8. What other colors do you see in this image? What do you think they represent?

Look at the **false-color image** of **Mystery Image 2**.

9. What is the most dominant color in this image? What do you think this represents?

10. What other colors do you see in this image? What do you think they represent?

Look at the **false-color image** of **Mystery Image 3**.

11. What is the most dominant color in this image? What do you think this represents?

12. What other colors do you see in this image? What do you think they represent?

Part 4: Analysis and Conclusions

13. Based on the evidence you have observed from your examination of both natural-color and false-color images, what type of area you think each image represents?

Mystery Image 1: _____

Mystery Image 2: _____

Mystery Image 3: _____

14. How many different land cover types were you able to distinguish in the satellite images? Describe each one.

15. Which land cover types are easiest to identify in the **true-color** images?
16. Which land cover types are easiest to identify in the **false-color** image?
17. What land cover features on the ground do you think are difficult to identify on a satellite image?
18. What other conditions at the time an image was taken might influence your land cover interpretation?
19. What is the dominant land cover type in your school's area?
20. What would this school's area look like in a Landsat **true-color** image? Be specific.
21. What would this school's area look like in a Landsat **false-color** image? Be specific.