Glacier Retreat

The Eyjabakkajökull Glacier is an outlet glacier of the Vatnajökull ice cap in Iceland. It has been retreating since a major surge occurred in 1973. This true-color Landsat-7 image shows the glacier terminus in September 2000. The light- and dark blue, or outer and inner, outlines show the terminus extent in 1973 and 1991 as labeled.

Student Directions

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Eyjabakkajökull Glacier
Image Credit: NASA
https://mynasadata.larc.nasa.gov/sites/default/files/inline-images/glacier%20retreat%20cropped.png

Steps

Refer to the image to answer the questions. Check with your instructor on how to submit your answers.

1. Each box on the image represents 1 km². Using the conversion 1 kilometer = 0.62137 miles, what is the area of each box in square miles?
2. The change in shape is not the same everywhere. Use the locations shown by the black line on the image to estimate the answer to the question.
3. From your answers to Problem 2:
   - What is the average rate of retreat in meters per year between 1973-1991 and 1991 to 2000?
4. Is the retreat of the glacier speeding up or slowing down?
5. What possible explanation do you have for your answer to question 4?

Sources:


Teachers, these mini lessons/student activities are perfect "warm up" tasks that can be used as a hook, bell ringer, exit slip, etc. They take less than a class period to complete. Learn more on the "My
Teachers who are interested in receiving the answer key, please complete the Teacher Key Request and Verification Form. We verify that requestors are teachers prior to sending access to the answer keys as we've had many students try to pass as teachers to gain access.