**PHYSICAL GEOLOGY LAB**

**10B DESERTS**

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**QUIZ**

**White Sands National Monument**

Go to <http://www.greggwilkerson.com/quiz-for-deserts.html>

Download

A-Generalized Dune Map for White Sands National Monument

B-Geologic Brochure for White Sands National Monument

C-Geologic Map of White Sands National Monument and Surrounding Area

D-Geologic Map of White Sands National Monument with location of the Heart of the Sands viewing area

E-Geologic Report for White Sands National Monument

Watch the video at

<https://youtu.be/FXu4NssqvGQ>

Read the Brochure “B-Geologic Brochure for White Sands National Monument”

Scan through the Geologic Report

A picture containing text, map

Description automatically generated

Figure 1. Topographic map of White Sands National Monument.

A close up of a map

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Figure 2. White Sands overview map

A close up of a map

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Figure 3. Geologic map of White Sands National Monument dune field.

A close up of a map

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Figure 4 Shaded relief map of White Sands National Monument.

A close up of a rug

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Figure 5. Aerial photo of Heart of the Sands viewing area.

A picture containing food

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A close up of a piece of paper

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A close up of a piece of paper

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A snow covered mountain

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Figure 6. White Sand dunes with San Andreas Mountains in background.

A beach covered in snow

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Figure 7. White Sands dunes looking west toward the San Andreas mountains.

A view of a snow covered mountain

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Figure 8. Sand Dune.

A snow covered mountain

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Figure 9. Partly stabilized sand dunes.

A person with a sunset in the sand

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Figure 10. Sand dunes at sunset.

A close up of a snow covered field

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Figure 11. Sand dune with lone yucca plant.

A snow covered mountain

Description automatically generated

Figure 12. Sand dune face at sunset.

A snow covered mountain

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Figure 13. Bilateral sand dune.

A view of a snow covered slope

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Figure 14. Sand dune with steep windward face.

QUESTIONS

1-How did the dunes form at White Sands National Monument?

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2-Why are the dunes white?

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3-Look at Figure 1. Print out Figure 1. Use the scale at the bottom of the map in figure 1 to estimate the east-west and north-south dimensions of the White Sands dune field. What are the dimensions?

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4-Look at Figure 2. List the varieties of sand dunes illustrated on this map

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5-Look at Figure 3. The geologic symbol for the dune field is Qega. Now open up the file for C-Geologic Map of White Sands National Monument and Surrounding Area. Zoom in and pan over to the legend on the right side of the map. Explain what the symbol Qega means

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6-Look at Figure 4. Why is Alkali Flat between the dunes and the mountains?

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7-Look at Figure 5. Print out Figure 5. Use the scale to determine the average size of the sand dunes. Your answer should be in feet.

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8-Look at Figure 6. Why are there no dunes on the mountains?

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9-Look at Figure 7. Explain where vegetation is located

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10-Look at Figure 8. Look at the left side of the sand dune. Is this part of the dune moving toward the camera or away from it?

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11-Look at the right side of Figure 8. It this part of the sand dune moving to the right or to the left?

PUT YOUR ANSWER

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12-Look at Figure 9. What is stabilizing the dune field?

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13-Look at Figure 10. Which way is the dune moving? To the left or to the right?

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14-Look at Figure 11. Look at the diagrams of sand dune types between Figures 5 and 6, above. Is the sand in Figure 11 moving to the left or to the right? (Hint, which side of the sand ripples is steep and which is gradual?)

PUT YOUR ANSWER

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15-Look at Figure 12. Is the sand dune in the foreground moving to the west or to the east (Hint, the photo is taken at sunset. Where does the sun set, in the west or in the east?).

PUT YOUR ANSWER

HERE

16-Look at Figure 13. Is the left part of this sand dune moving toward the camera or away from it?

PUT YOUR ANSWER

HERE