Directions
Answer the guide as you travel through Exploring Michigan.

1. Michigan’s Environment
How has the environment of Michigan changed over time?

2. Find the “Jack pine” diorama
Locate the non-serotinous cone and the serotinous cone. What is the difference between the two?

What can cause the prevalence of one over the other in the future?

7. Find the “River” diorama
How do people rely on rivers in Michigan?

What are some of the ways humans have negatively impacted the waterways and the organisms living in the environment?

What are some ways to reduce the impacts of human activities on rivers?

8. Find the “Fish wall”
What are non-native species? What are invasive species?

How have people played a role in affecting or changing an ecosystem?

What are some ways to reduce the impacts of human activities on rivers?

U-M Museum of Natural History
3. **Find the “Oak-hickory” diorama**
   How can the composition of this forest change over time? How might this affect the other living organisms in the ecosystem?

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4. **Fire and Forest Management**
   Both the jack pine and the oak-hickory ecosystems would utilize fires to regulate the environment. How has the lack of forest fires changed the oak-hickory ecosystem?

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   Why are forest fires more vital to the jack pine ecosystem?

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5. **Find the “Wetlands” diorama**
   Other than being home to plants and animals, why are wetlands an important ecosystem?

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   What is the main impact humans have on wetlands?

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6. **Find the “Coastal Dunes” diorama**
   How have glaciers created some of the features of Michigan?

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   How does the water continue to create and maintain these features?

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