

Warm Up

Student Worksheet (1 of 5)

Use the word list to fill in the blanks below.

hitchhiking

ballast water

aquatic invasive species

freshwater

planktonic

byssal threads

Zebra mussels were first detected in Lake St. Claire and Lake Erie in 1986.

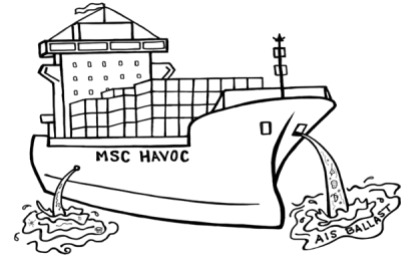
The quagga mussels arrived in Lake Erie three years later. Both of these

_____ hitched a ride to the Great Lakes in

the _____ of cargo ships traveling from the _____ Black and Caspian

Seas. These pesky mussels can attach to surfaces with strong proteins called _____.

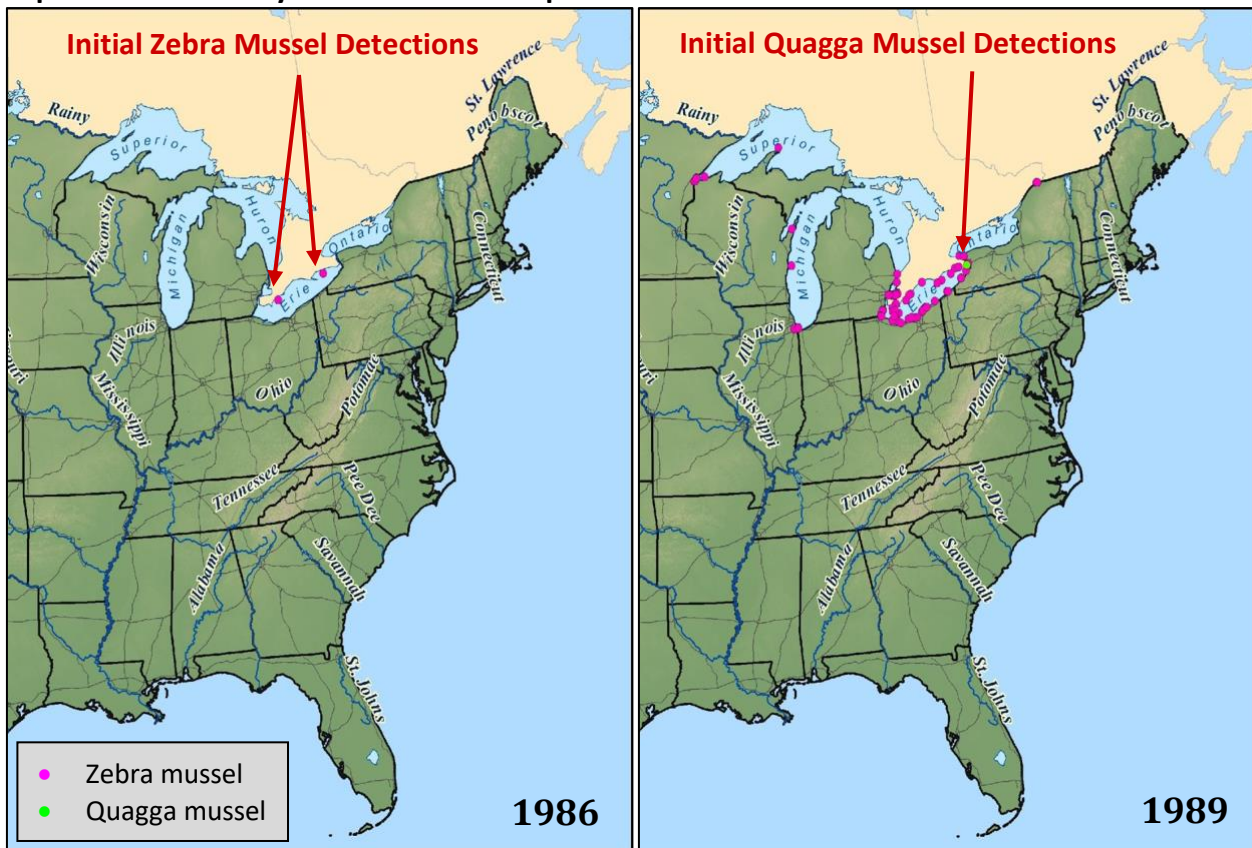
They also have microscopic, _____ larvae that can drift in water for up to one month before they settle onto a substrate. As a result, the mussels quickly spread by traveling downstream from their points of origin or by _____ a ride on or in a man-made object.



Mapping Activity Part I

The maps below represent the invasive zebra and quagga mussel detections as they occurred.

Complete the tasks as you examine the maps.



1. Compare and contrast the 1986 and 1989 maps. Record two observations below.

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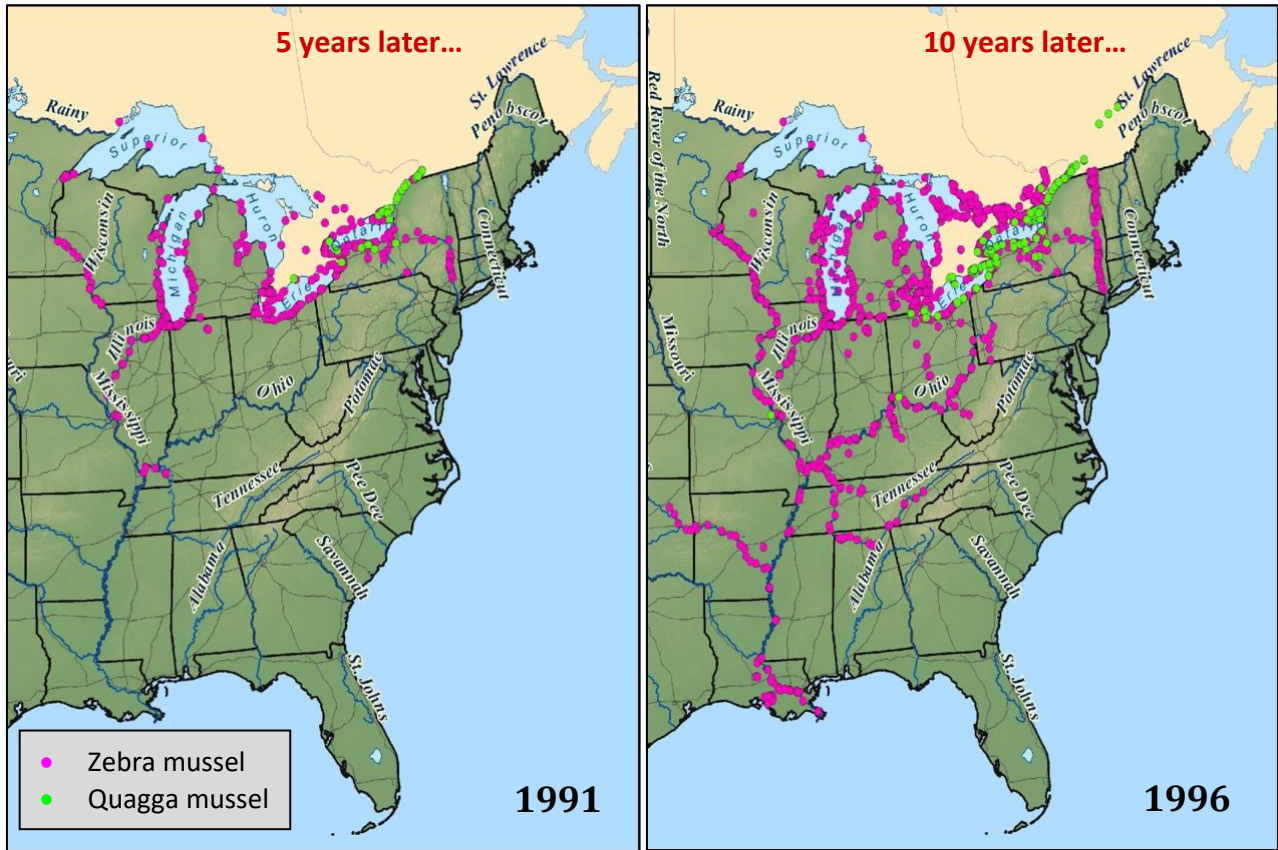
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2. Compare and contrast the 1991 and 1996 maps. Record two observations below.

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3. **Brainstorm...**List the ways in which invasive mussels can move and spread to new areas.
Hint: What could they be moving on and in?

4. What surprised you the most when comparing the first four maps?



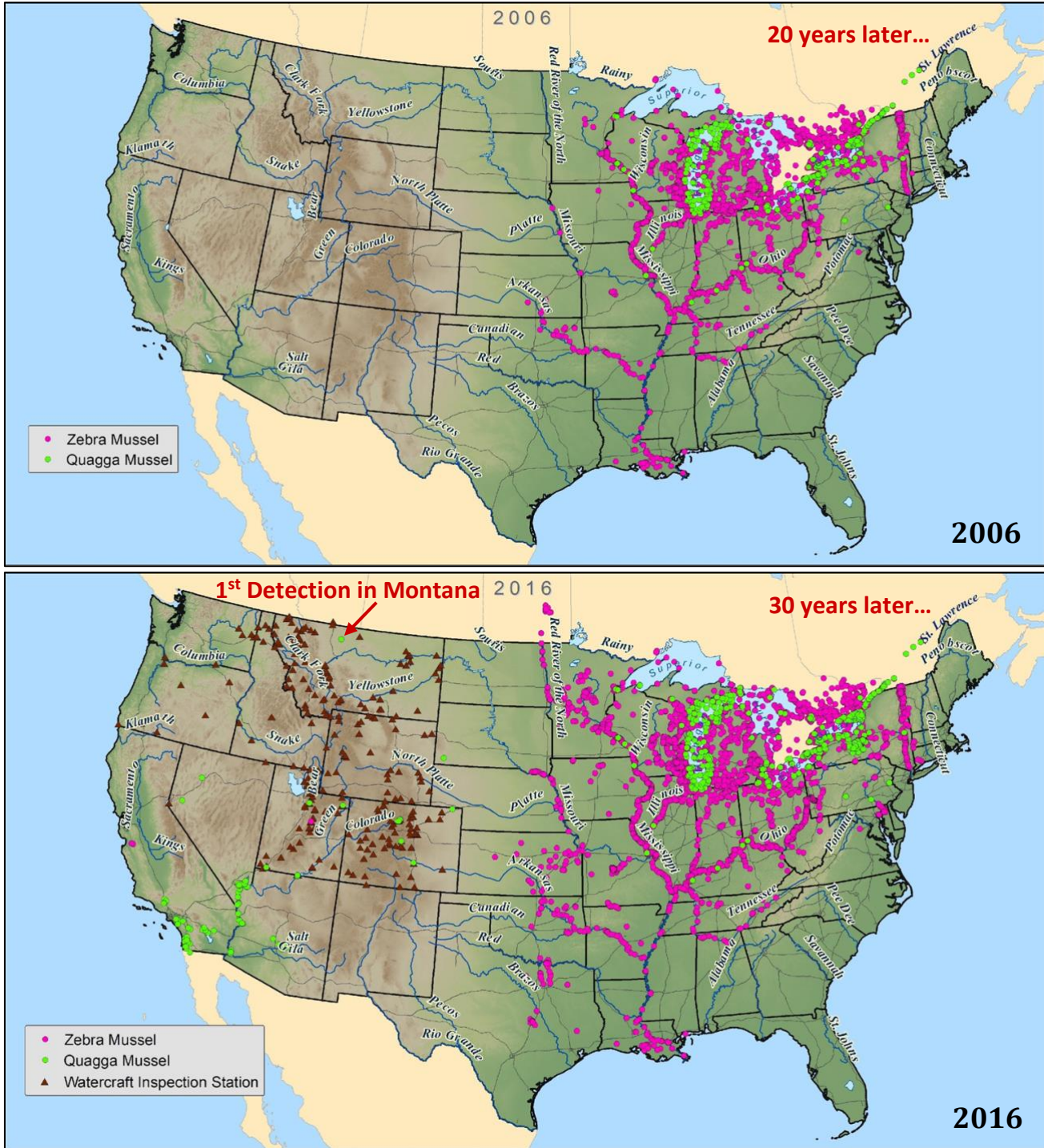
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Mapping AIS Mayhem

Student Worksheet (3 of 5)



5. Compare and contrast the 2006 and 2016 maps. Record two observations below.

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6. How are the Northwest states trying to prevent the spread of invasive mussels? Is it working?



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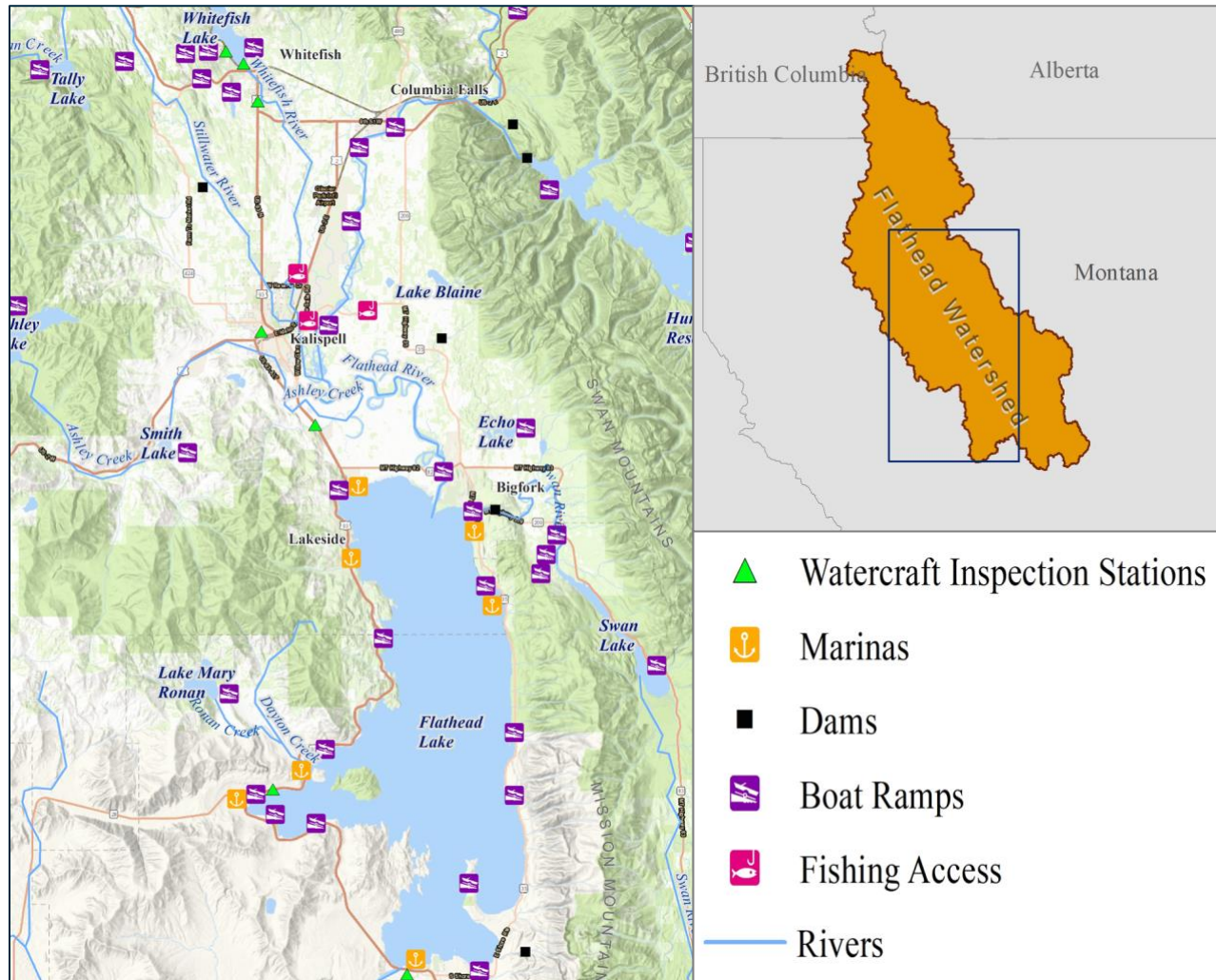
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Mapping Activity Part II

Examine the maps below with and then answer the questions using complete sentences.

Flathead Watershed Map:



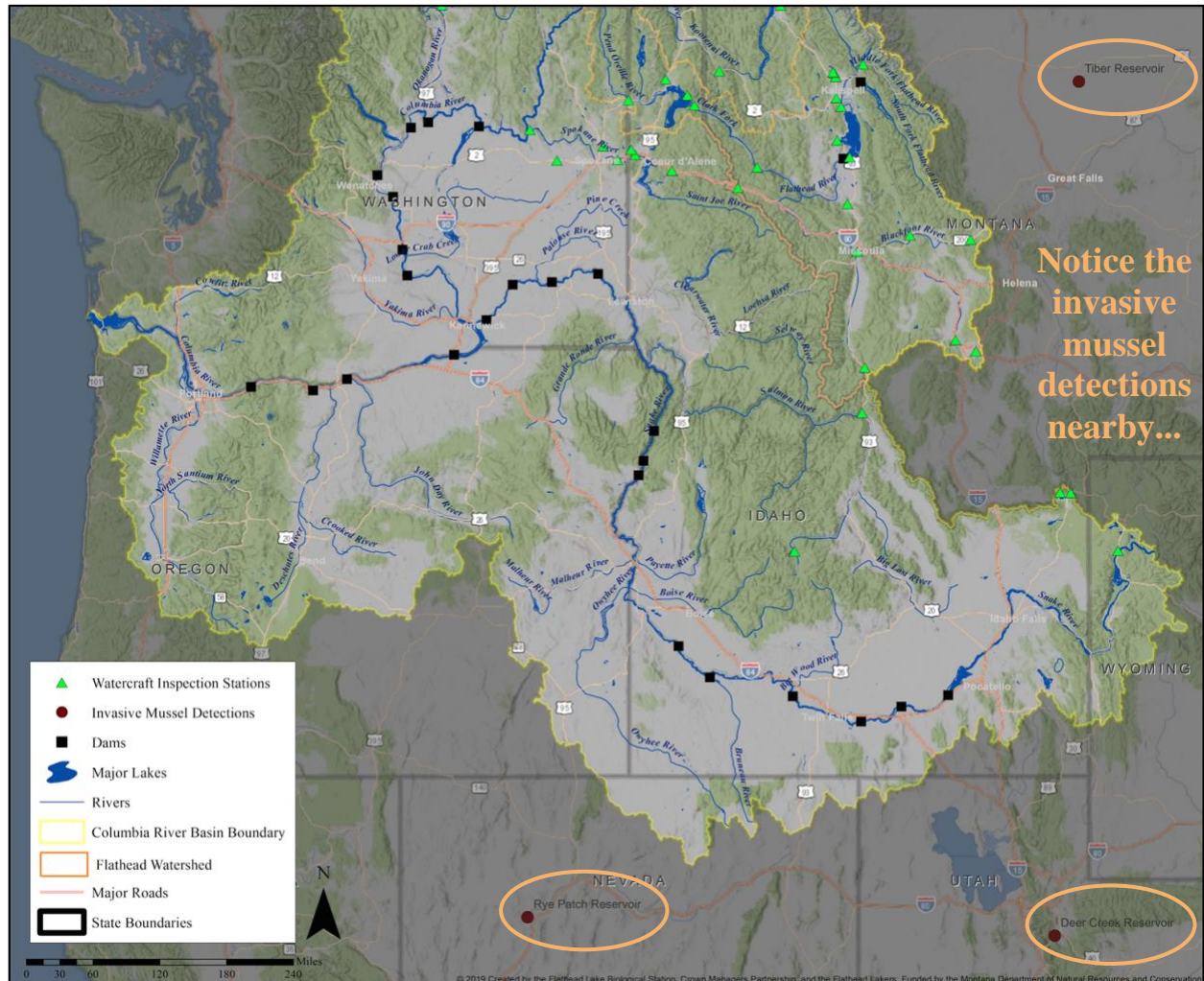
Imagine the invasive mussels have made it to the Flathead River Basin in Montana.

1. Select a point of introduction on the Flathead Watershed map: _____
2. Describe where the mussels would disperse/spread from that location below.
3. Explain (using SPECIFIC details from the map) how the aquatic environment of the Flathead Watershed could be impacted by a mussel invasion.

Mapping AIS Mayhem

Columbia River Basin Map:

Student Worksheet (5 of 5)



How could the Columbia River Basin be economically impacted by a mussel invasion?

4. Select a topic below. Use SPECIFIC details from the map to explain how these Columbia River Basin economy businesses could be impacted by a mussel invasion.

- | | | |
|---|--------------------------------------|---|
| <input type="checkbox"/> Hydroelectric Dams | <input type="checkbox"/> Restaurants | <input type="checkbox"/> Recreation (ex. fishing, rafting, swimming, sailing, boating, camping, etc.) |
| <input type="checkbox"/> Farming/Irrigation | <input type="checkbox"/> Tourism | |
| <input type="checkbox"/> Real Estate | | |

Wrap Up

5. We live near headwaters of the Columbia River Basin. Why should we care about a potential mussel invasion?



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Mapping AIS Mayhem

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