E-Sheet Introduction to Floods
Answer Key

Questions

1. List five reasons for flooding.

   Any of the following responses are appropriate:

   - Heavy, intense rainfall
   - Run-off from a deep snow cover
   - Over-saturated soil, when the ground can't hold anymore water
   - Frozen soil
   - High river, stream or reservoir levels caused by unusually large amounts of rain
   - Ice jams in rivers
   - Urbanization, or lots of buildings and parking lots

2. Describe the two types of floods.
   - 'Regular' river floods
   - Flash floods
3. Why is flash flooding so dangerous?
   - Because of the speed at which they occur. There is no warning.
4. How often can a 100-year flood occur?
   - On average, they occur once every 100 years.
5. Why might an urban area be more affected by heavy rainfall than a rural area?
   - The ground acts as a sponge, absorbing rainfall. When paved over, the rain is channeled into storm drains, intensifying the flow.
6. How are wetlands useful for preventing floods?
   - Wetlands act like a sponge and absorb excess rainfall.
7. What is the best defense against flooding?
   - Understanding how rivers work is our best defense.

Additional questions:

1. Which type of flooding is most likely to affect your community?
   - Answers will vary depending on the region where you live
2. What types of flood control measures are in place along the rivers where you live?
   - Answers will vary depending on the region where you live

E-Sheet Answer Key (cont.)

Floods of Different Sizes

Define the following vocabulary words:

Riverbed: the bottom of a river

Flood plain: flat area on either side of a river which is under water during a flood

Levees: a berm-like structure that acts as a barrier to flood waters

Oxbow lakes: A portion of abandoned stream channel filled with stagnant water and cut off from the rest of the stream. Oxbow lakes are created when meanders are cut off from the rest of the channel because of lateral stream erosion.

Ripple mark: Stream bed deposits found in streams. Ripples are only a few centimeters in height and spacing and are found in slow moving streams with fine textured beds.

Cataracts: A waterfall with a single, sheer drop. Usually with a large volume of water flowing over the falls.

Coulee: A gorge formed by glacial melt waters or a stream that is now dry. A term primarily used in the northwestern United States.

Bar: A mound of gravel and sand deposited by flowing water. Bretz and other geologists identified many large bars in the Channeled Scablands and the Willamette Valley.

Questions:

1. How does a stream or river create its own flood control?
    - It creates levees and flood plains that contain the water
2. How are the features of the Missoula Floods different from those of a regular flood?
    - They are similar to features in normal rivers, but they are enormous. For instance, some ripple marks are 30 feet high.