

**SECTION
2****Stream and River Deposits****BEFORE YOU READ**

After you read this section, you should be able to answer these questions:

- What types of deposits are caused by streams?
- Why do floods happen?
- How do floods affect humans?

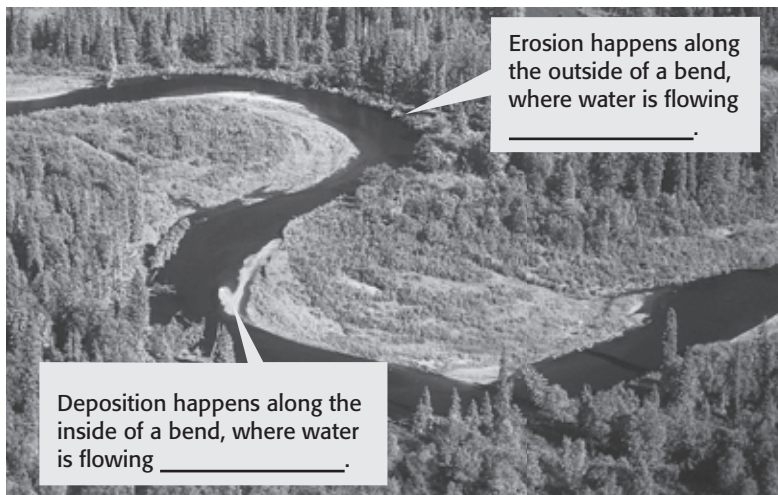
**National Science
Education Standards**
ES 1c

How Do Rivers and Streams Rebuild Land?

Earlier, you learned that rivers and streams erode rock and soil. However, rivers also carry this loose rock and soil to new places. Rivers can help to form new land through deposition. **Deposition** is the process in which material is laid down, or dropped.

The rock and soil that a river erodes from the land move downstream in the river's load. When the flow of water slows down, the river deposits, or drops, some of its load. Material, such as rock and soil, that is deposited by rivers and streams is called *sediment*. ✓

In a river, erosion happens on the outside of a bend, where the water flows quickly. Deposition happens on the inside of a bend, where the water flows more slowly.

**PLACER DEPOSITS**

Heavy minerals, such as gold, can be carried by very fast-moving rivers. In places where the rivers slow down, the heavy minerals may be deposited. This kind of sediment is called a *placer deposit*.

STUDY TIP

Compare In your notebook, create a table to compare the different landforms created by stream deposits.

READING CHECK

1. Define What is sediment?

TAKE A LOOK

2. Identify Fill in the blanks in the figure with the correct words.

SECTION 2 Stream and River Deposits *continued*

What Are Deltas and Alluvial Fans?

Rivers deposit their loads of rocks and soil when their flow of water slows down. When a river enters the ocean, it flows much more slowly. Therefore, it deposits its load into the ocean.

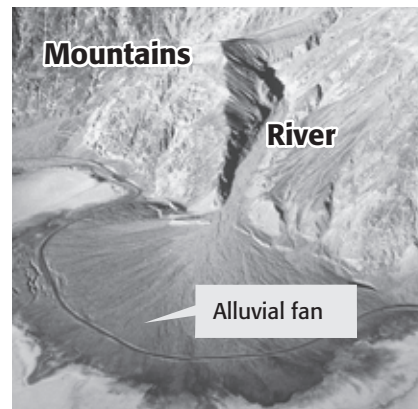
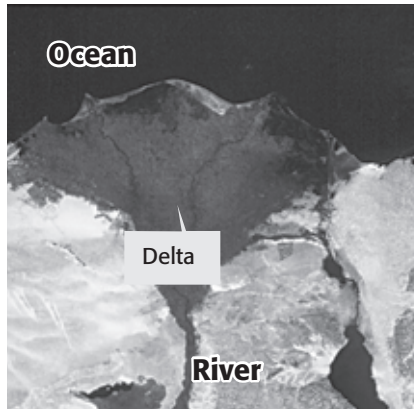


Say It

Investigate Learn about a place in the world where people live on a delta. Give a short talk to your class about the place you studied.

When the river enters the ocean, it deposits its load under the water in a fan-shaped pattern called a **delta**. The river deposits can build up above the water's surface to form new land and build new coastline.

Rivers and streams can also deposit their loads on dry land. When a fast-moving stream flows from a mountain onto flat land, the stream slows down quickly. As it slows down, the stream deposits its rocks and soil in a fan-shaped pattern known as an **alluvial fan**.



Why Do Rivers and Streams Flood?

Rivers and streams are always changing. They may have different amounts of water in them in different seasons. If there is a lot of rain or melting snow, a stream will have a lot of water in it.

Floods are natural events that can happen with the change of seasons. A *flood* happens when there is too much water for the channel to hold. The stream flows over the sides of its channel. ✓



READING CHECK

3. Explain What is a flood?

During a flood, the land along the sides of the stream is covered in water. The stream drops its sediment on this land. This area is called a **floodplain**. Floodplains are good areas for farming because flooding brings new soil to the land.

SECTION 2 Stream and River Deposits *continued*

What Are the Effects of Floods?

Floods are powerful and can cause a lot of damage. They can ruin homes and buildings. They can also wash away land where animals and people live.

In 1993, when the Mississippi River flooded, farms and towns in nine states were damaged. Floods can cover roads and carry cars and people downstream. They can also drown people and animals. ✓

Floods sometimes happen very fast. After a very bad rainstorm, water can rush over the land and cause a *flash flood*. Flash floods can be hard to predict and are dangerous.



Floodwater can flow strongly enough to move cars. These people were trapped in their car in a flash flood.

Humans try to control flooding by building barriers around streams. One kind of barrier is called a dam. A *dam* is a barrier that can guide floodwater to a reservoir, such as a lake or pond. A dam can prevent flooding in one area and create an artificial lake in another area. The water in the artificial lake can be used for farming, drinking, or producing electricity.

Another barrier that people build is called a levee. A *levee* is a wall of sediment on the side of a river. The barrier helps keep the river from flooding the nearby land. Many levees form naturally from sediment that is deposited by the river. People can use sandbags to create artificial levees. ✓

**READING CHECK**

4. List List three ways that floods can be harmful to people and animals.

TAKE A LOOK

5. Explain Why can a flash flood be dangerous to people driving in cars?

**READING CHECK**

6. Identify What do people do to try to protect themselves from a flood?

Section 2 Review

NSES ES 1c

SECTION VOCABULARY

alluvial fan a fan-shaped mass of material deposited by a stream when the slope of the land decreases sharply

delta a fan-shaped mass of material deposited at the mouth of a stream

deposition the process in which material is laid down

floodplain an area along a river that forms from sediments deposited when the river overflows its banks

1. Explain Why do floods happen?

2. Compare Complete the table to describe the features of different kinds of stream deposits.

Type of Deposit	How is it formed?	Where is it formed?
Alluvial fan		
Delta		
Floodplain		

3. Explain How can a flood be both helpful and harmful to people?

4. List Give two kinds of barriers that people use to control floodwater.
