**Dam Safety**

**Possible Causes of Dam Failures**

- Trees and brush
- Rodent activity
- Low area in crest of dam
- Cracking
- Concrete failure
- Seepage at abutment contact (groin)
- Slump
- Boil
- Erosion at outlet (scour hole)
- Stability failure (internal)

**Outlet Structures**

- Principal spillway
- Gate valve
- Emergency spillway (auxiliary)
- Principal spillway (drop inlet riser)

**Dam Diagram**

- Reservoir
- Crest
- Upstream slope (face)
- Downstream slope (face)
- Abutment contact (groin)
- Toe drain
- Outlet works
- Emergency spillway (auxiliary)
- Principal spillway (drop inlet riser)

**For more information, contact:**
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**View the Online Training and the Pocket Safety Guide:**
http://www.fs.fed.us/eng/dams