

Washington State

Notable Dam Failures and Incidents

1. Masonry Dam (Boxley Burst) – December, 1918

- **Location:** King County near North Bend
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Excessive seepage through glacial moraine abutment caused mud flow about 1 mile from reservoir. Destroyed RR line and village of Eastwick.

2. Eastwick RR Fill Failure – February, 1932

- **Location:** King County near North Bend
- **No. of Lives Lost:** 7
- **Nature of Failure and Damage:** Blockage of culvert by slide caused RR Fill to back up water and fail. Destroyed RR line and village of Eastwick.

3. Loup Loup Dam – April, 1938

- **Location:** Okanogan County near Malott
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** 50 foot high hydraulic fill dam failed when emergency spillway was undercut during a flood. Destroyed 25 homes and left 75 people homeless. Destroyed ½ mile of state highway.

4. Lake Dawn Dam – February, 1950

- **Location:** Clallam County near Port Angeles
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Heavy rains caused overtopping and failure of earthen dam. 1 home was destroyed, \$4000 damage.

5. North Star Sand & Gravel Dams – December, 1967

- **Location:** Snohomish County near Everett
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** 40 foot high dam washed out by overtopping due to lack of spillway. 25 foot high dam rebuilt, also failed, washed out GN railroad tracks, derailed passing train.

6. Pillar Rock Dam – January, 1970

- **Location:** Wahkiakum County
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Logging roadfill culvert blocked by debris, overtopped and failed, caused 25 foot high concrete gravity dam to fail. 3 homes and fish cannery destroyed.

7. Sid White Dam – May, 1971

- **Location:** Okanogan County near Omak
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Earthen dam failed due to seepage through animal burrows. Caused second dam to fail and dumped debris into town of Riverside.

8. Horseshoe Lake Blowout – May, 1974

- **Location:** Stevens County near Chewelah
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Outlet tunnel through 50 foot high natural ridge collapsed causing ridge to fail. Drained 20 foot deep lake. Extensive flood damage and debris deposits on cropland in downstream valley.

9. White River Incident – July, 1976

- **Location:** Pierce County near Auburn
- **No. of Lives Lost:** 2
- **Nature of Failure and Damage:** Surge in flow caused by increased discharge from Mud Mountain Dam and removal of flashboards at PP&L Diversion Dam. Killed 2 children playing in White River.

10. Alexander Lake Dam – December, 1982

- **Location:** Kitsap County near Bremerton
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Spillway undermined and failed during heavy rains. Caused damage at fish hatchery and homes in Gorst.

11. Upriver Dam – May, 1986

- **Location:** Spokane County near Spokane
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Hydropower facility failed by overtopping. Lightning struck system, turbines shut down. Water rose behind dam while trying to restart. Backup power systems failed, could not raise spillway gates in time. Caused \$11 million damage to facility.

12. Chinook Dam – November, 1990

- **Location:** Pacific County
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Heavy rains overtopped the embankment and undermined the spillway, leading to failure of dam. Approximately \$100,000 damage to facility.

13. Seminary Hill Reservoir City of Centralia – October, 1991

- **Location:** Lewis County near Centralia
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Failure along weak rock zone in hillside caused massive slide which breached reservoir. 3 million gallons of water drained from reservoir in 3 minutes. 2 homes destroyed, many homes damaged, \$3 million in damage.

14. Iowa Beef Processors Waste Pond Dam No. 1 – January, 1993

- **Location:** Walla Walla County near Richland
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Failure of 15-foot high embankment released 300 acre-feet of waste water. Failure attributed to high reservoir levels due to snowmelt, entering animal burrows near embankment crest, and eroding dam. Washed out Union Pacific RR tracks, derailed 5 locomotives. \$5 million in damage.

15. CSC Orchards Failure – July, 1995

- **Location:** Grant County near Royal City
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Breached 20-foot high frost pond emptied into surrounding orchard. Failure attributed to a network of voids that developed around outlet pipe. Seepage through voids caused rapid failure. Washed out 3 acres of trees and inundated a 2-story residence. \$100,000 damage.

16. Olufson Dam – December, 1996

- **Location:** Pierce County near Gig Harbor
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** A sinkhole in the 18-ft high embankment was created due to a failing pipe that was poorly constructed. Emergency response prevented total dam failure. There was environmental damage to downstream Dickson Creek and the salmon population from discharge and debris. The dam was removed as part of the emergency response.

17. N. Boeing Creek Dam – January, 1997

- **Location:** King County near Shoreline
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Dam failed due to excessive seepage, poor hydraulics and no emergency spillway during large storm event. Embankment washed out a city intersection, utilities and detention pond.

18. Broetje Orchards Block 96 Reservoir – April, 2000

- **Location:** Walla Walla County
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Failure of 26-ft high embankment released 11m gallons of water; impacted residential youth camp and Blue Mt. Railroad line. Failure due to leak in PVC liner and internal erosion along pipeline through the embankment.

19. Mill Creek Pond – November, 2008

- **Location:** Grays Harbor County near Cosmopolis
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Dam gave way during heavy rains from impact of falling trees; dislodged roots also dislodged a buried sheet pile at the right abutment. Pedestrian bridge washed out; residential areas flooded, about 12 homes damaged in 1-2 feet of water.

20. French Slough Bartelheimer Dairy Waste Pond – April, 2010

- **Location:** Snohomish County
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Breached manure lagoon emptied some 27 million gallons on to adjacent farmland and into French Slough (an arm of the Snohomish River). Caused WQ problems. Cause of Breach: Failure to remove cedar drain field beneath the pond during construction allowed internal erosion through the embankment foundation.

21. Hawkins Dam – August, 2014

- **Location:** Okanogan County
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Failed due to spillway erosion. Area burned in 2014 wildfires and then hit with heavy rains. Erosion in spillway over about 2 ½ hours scoured a channel 360 ft long with est. volume of 6,600 cu. yds. Spillway was repaired in 2017. See Ecology Publications 14-11-011: “Benson Creek Flood, August 2014”, 15-11-019: “Benson Creek Rainfall-Runoff Model Results” and 15-11-002: “Computerized Rainfall-Runoff Model for Benson Creek”.

22. Bonasa Breaks Ranch Dam – April, 2017

- **Location:** Asotin County near Anatone
- **No. of Lives Lost:** 0
- **Nature of Failure and Damage:** Unpermitted dam with poor design, construction, and maintenance. Heavy rain caused dam overtopping due to an undersized spillway. Other failure mechanisms such as piping may have contributed. See Ecology Publication 17-11-008: “Bonasa Breaks Ranch Dam Failure and Hydrologic Report”.