Bonneville Spillway Rock Removal

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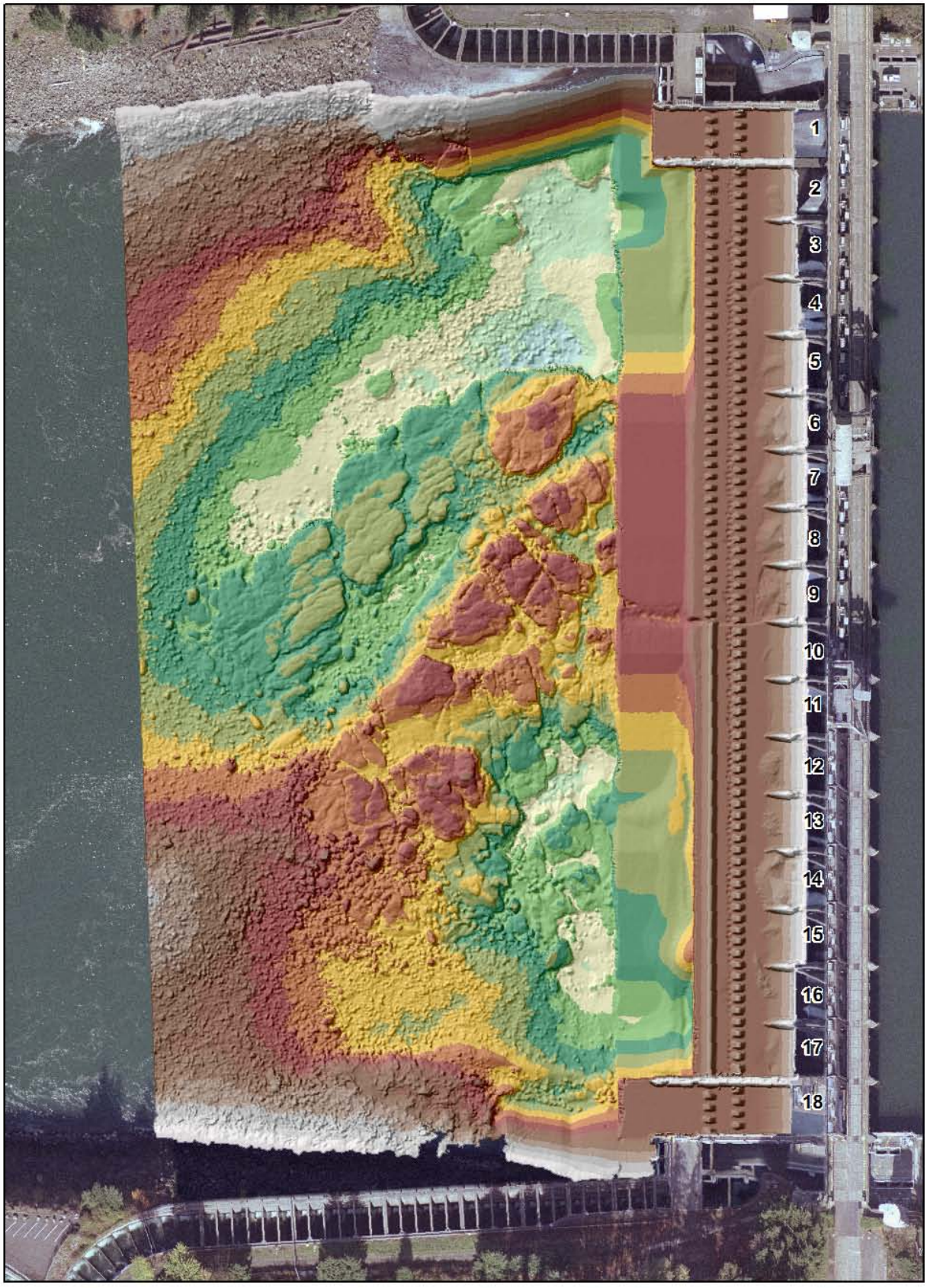
Bonneville Spillway Rock Removal

Tasks

- Spillway Contingency PDT – Growth in Scope
- Develop interim spill patterns
  - For use until rocks are removed
- Plans and Specs PDT
  - Develop SOW for rock removal
  - Suggest working with Elizabeth Smock and Operations to expedite P&S
- Award Contract/Modification
  - Remove Rocks
- Develop new spill patterns
  - Minimize rocks being deposited in stilling basin
  - Done with regional participation

Rocks

Bonneville Dam Spillway Stilling Basin



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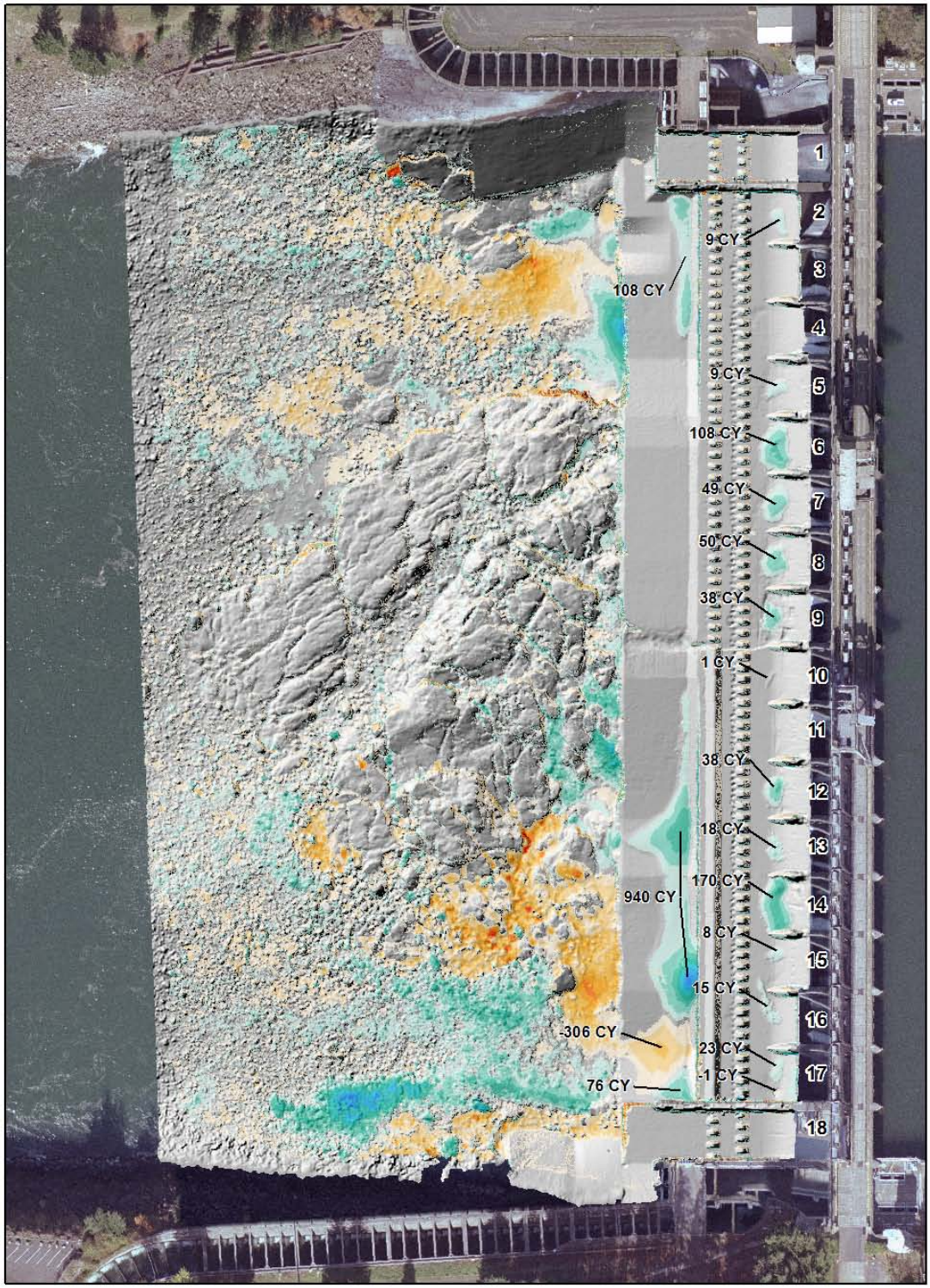
Bonneville Dam Spillway Stilling Basin



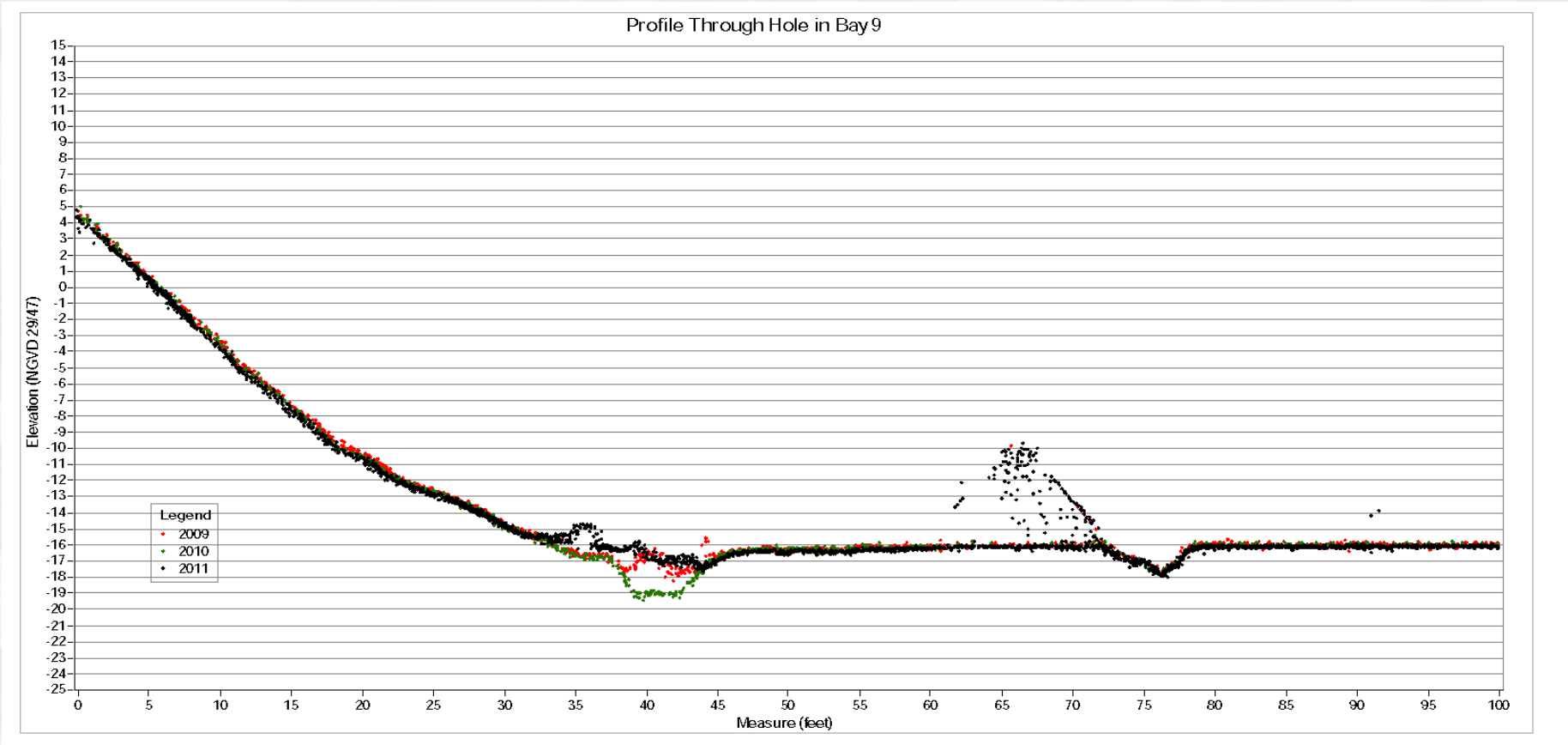
Difference Plot 2011 vs. 2010

Change in surface elevations between September 2010 and October 2011. Warm colors show a loss in elevation, cool colors show a gain in elevation. During this time period, there was approximately 11,600 cubic yards of cut and 10,300 cubic yards of fill for a net flux of -1,300 cubic yards through the study area. 536 cubic yards of material has been recruited into the stilling basin (upstream of the baffle blocks), 1,166 cubic yards of material has been recruited onto the apron, and a 306 cubic yard pile of material on the apron downstream of bay 17 has been removed.

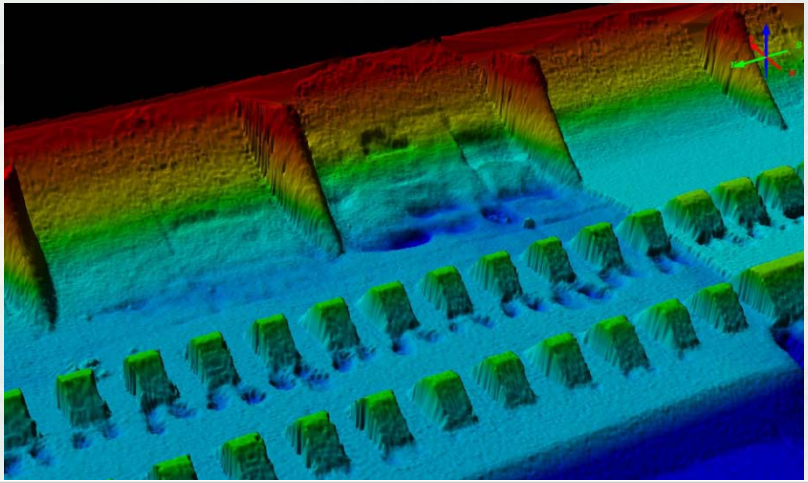
Why is Rock Removal Critical?

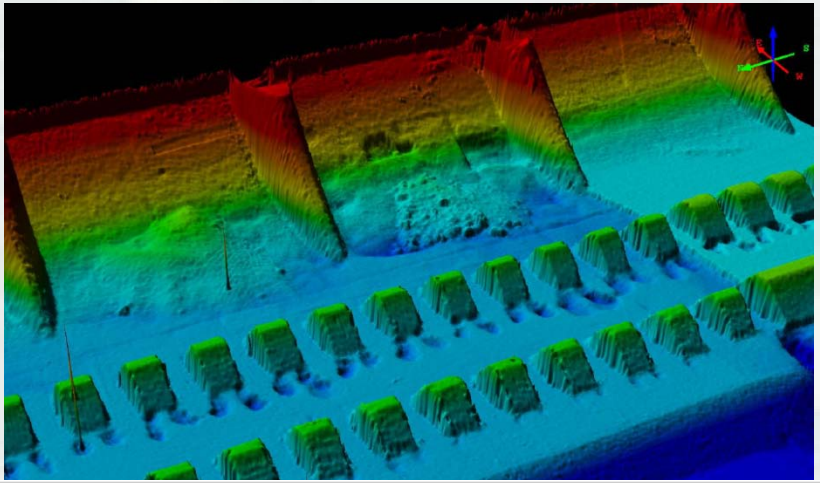
- Ball Milling
  - Ball milling occurs when foreign debris enters a stilling basin and continually “churns up” the concrete as it sees flow
  - Major problem at many dams although not likely to cause a failure unless damage remains unchecked
  - Importance of routine inspections
- History of Ball Milling
  - Dworshak
  - Lo Mo
  - Bonneville

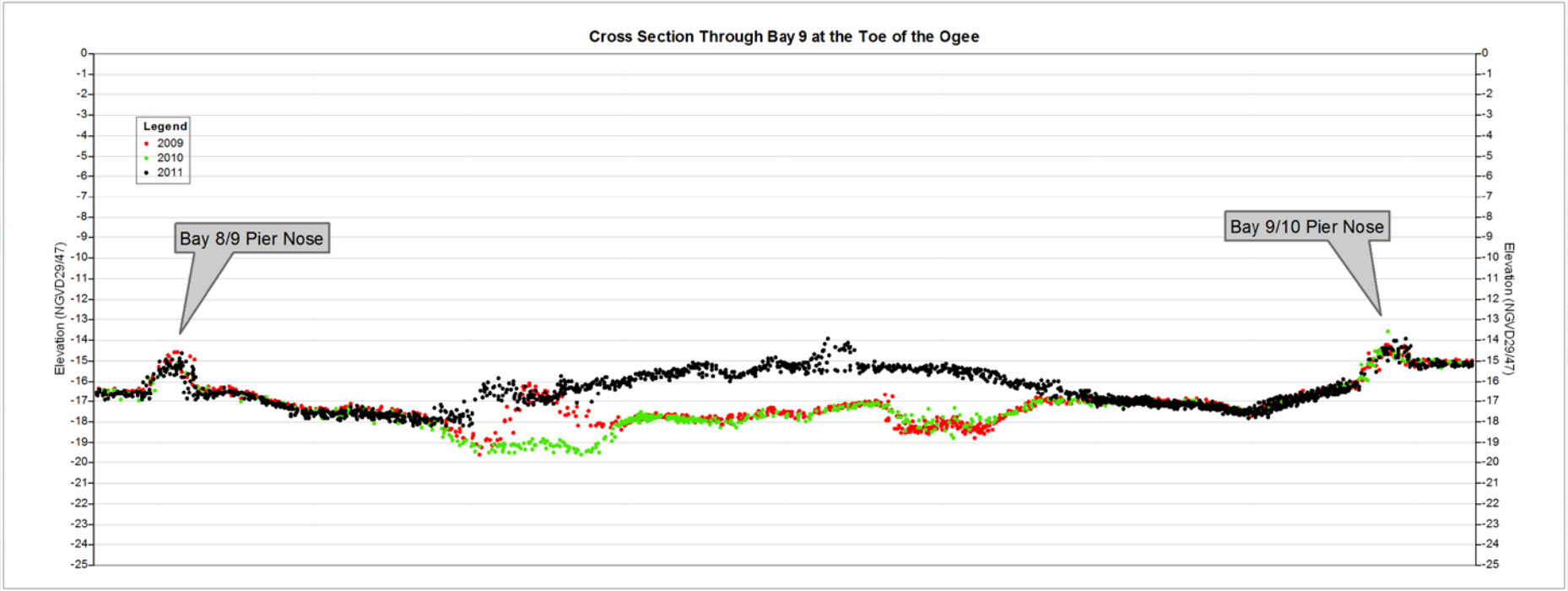
Cross Section Bay 9



Bay 9






Cross Section Through Bay 9 at the Toe of the Ogee
Legend
2009
2010
2011
Bay 8/9 Pier Nose
Bay 9/10 Pier Nose
Elevation (NGVD29/47)
Elevation (NGVD29/47)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
-17
-18
-19
-20
-21
-22
-23
-24
-25

Cross Section Center Line Bay 14

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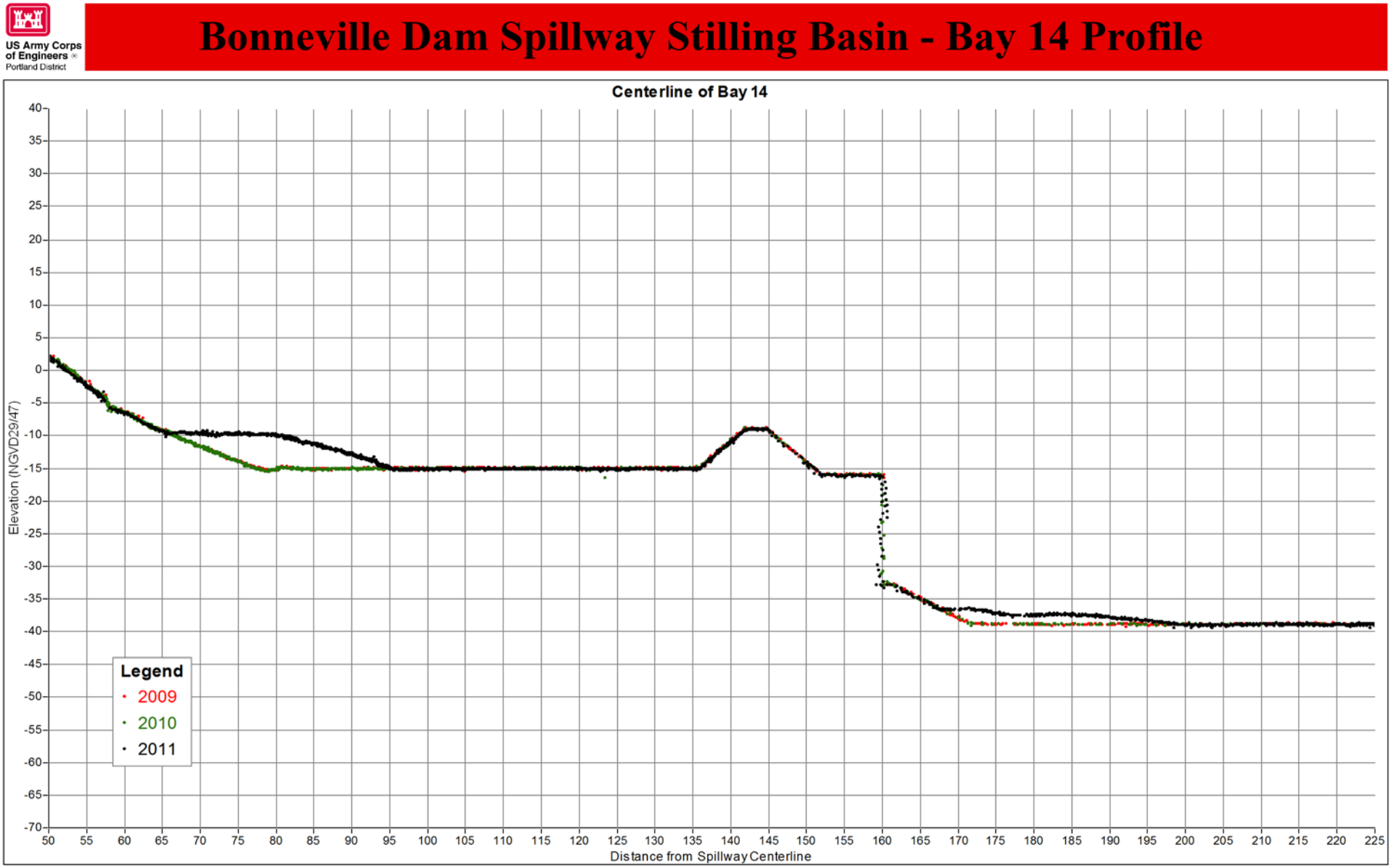

Cross Section Center Line Pier 12/13

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Bonneville Dam Spillway Stilling Basin - Pier 12/13 Profile