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Managing Water in the West

Lower Portal Road Spring Habitat Improvement Summary



U.S. Department of the Interior
Bureau of Reclamation

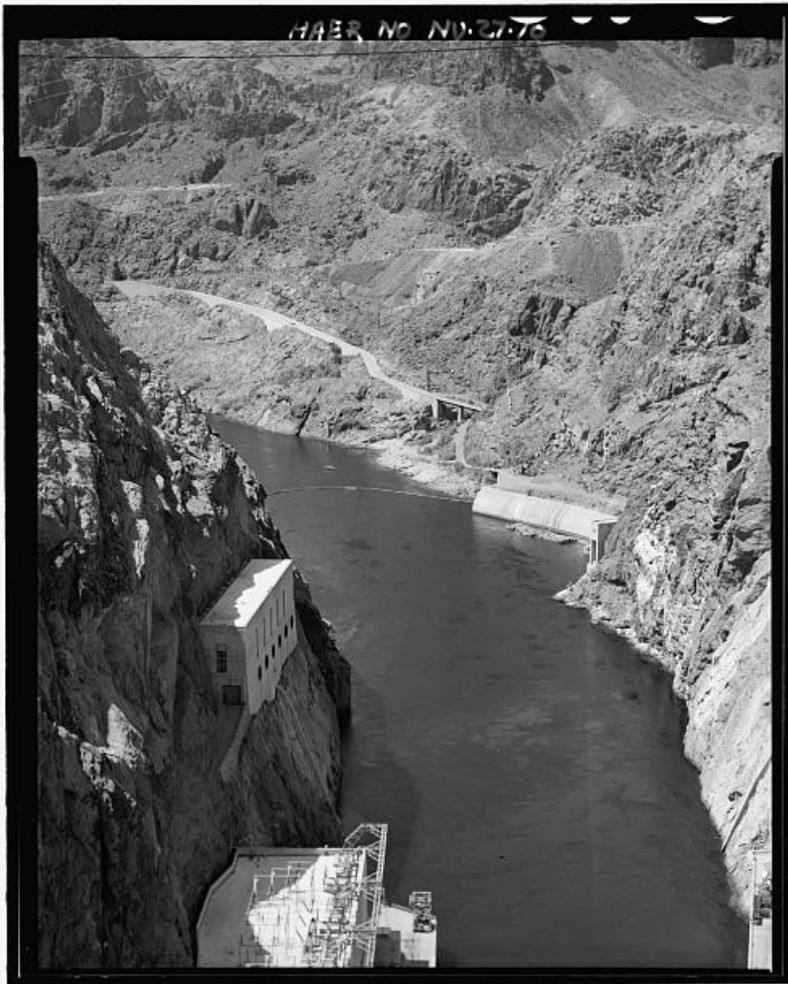
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- General Overview & History
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- Early Project Photos
- Progressive Project Photos



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History



- Lower Portal Road was constructed by Six Companies, Inc. as part of the overall construction of Hoover Dam.
 - Provided access to Black Canyon
 - Access to construction of diversion tunnels
 - Initial construction - 1931

Photo courtesy of Library of Congress:
<http://www.loc.gov/pictures/resource/hhh.nv0244.photos.365991p/>

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General Overview

- **Lower Portal Road commonly referred to as the Hoover Dam Pupfish Refuge**
 - Refuge constructed in 1974 to create a secondary refuge for endangered Devil's Hole Pupfish
 - Fed by a warm spring originating out of the canyon wall
 - Concrete dam at the top creates pools
 - Created habitat for both pupfish and Relict Leopard Frogs
 - Prime tamarisk habitat

General Overview

- **Multi-use area**
 - Lower access into Hoover Dam
 - Colorado River adventure tours
 - Kayak
 - Pontoon
 - Species reintroduction
 - Relict Leopard Frog
 - Pupfish

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Purpose

- Tamarisk removal proposal initiated as a fire management funded project
 - Excess fuel as a result of tamarisk densities
 - Provide potential habitat for relict leopard frogs (*Rana Onca*)
 - Re-vegetate with native plants
- Began in 2009 with assistance from National Park Service crews

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Aerial View - Upper Portion



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Aerial View - Lower Portion



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Phase 1- Upper Portion

2009- Pre removal



2011- Re-treatment



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Upper Portion Photos

2012



2013



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Phase 1- Upper Portion

- **Removed two 40-yard dumpsters full of tamarisk cuttings**
 - Upper ponds
 - Waterfall
 - Pupfish enclosure
 - Ledge
- **Cleared the drainage along the road for introduction of relict leopard frogs.**
- **Two years- Approximately 160 cubic yards of debris removed.**

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Phase 2- Lower Portion

2011- Pre removal



Progress



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Phase 2- Habitat Improvement

Creation of ponds



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Phase 2- Habitat Improvement

Stream Channel



Planting of Coyote Willow



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Lower Portion - Overview

2009 – Pre work



2011 – pre-removal



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Lower Portion- Then & Now

2011- Post removal

2012



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2012 – Post re-treat



2013



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Phase 3- Old Building Foundation

2011- Pre removal

2011



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Old Building Foundation

- 2011 – Initial removal



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2011- Pre removal



2011 – Post removal



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Phase 4- Monitoring & Maintenance

- Check the site at least 2 times a month
- Hand water mesquite trees as needed from the spring
- Monitor willow clipping growth
 - Big Horn Sheep predation
 - Deer Out?
- Future habitat improvement opportunities?

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Mesquite Success

2012 - April



2012- August



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2012 - December



2013 - August



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Future Improvement Opportunities

- Re-treatment of tamarisk regrowth as needed.
- Planting of additional mesquite trees
- Planting of additional coyote willow clippings
- Spring head clean-up/pond improvement
- Wildlife survey



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Questions?

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