Drought forged this group and created current water plans. Is this an abundant water cycle since the plan has been in effect or is it more?
The reservoir and its management is vital to the nation. It serves many purposes including: flood control, power production, irrigation, fisheries, and recreational opportunities.
FWP Fisheries Management Objective

- Provide for the Stewardship of the Bighorn River and Reservoir fisheries while contributing to the quality of life for present and future generations.

- The Bighorn River Fishery is a world-class wild trout fishery.
  - The goal is maintain the fishery as a world-class fishery
    - Flow recommendations
    - Habitat enhancing activities
    - Regulations

Water management is the largest contributor to the success or failure of the tailwater fishery. Dibble in print, states, “....rainbow trout recruitment was primarily correlated with high winter flow combined with low spring flow, whereas brown trout recruitment was most related to high water velocity.

This study was a review of 29 dams with tailwater trout fisheries with as many as 19 years of data including 17 years of data from the Bighorn River.

This work supports historic management plans, studies, and the current Management Plan as detailed in the Montana State-Wide Management Plan
Objective’s Continued

- Bighorn Reservoir
  - Walleye and rainbow trout managed with wild and hatchery production-continue with walleye triploid stocking. Stocked Girard rainbow in 2015 and other strains as available.
  - Sauger, ling, catfish, brown trout, crappie, yellow perch, smallmouth bass dependent on wild production.
  - Regulation changes increased limit of smallmouth bass 10 daily and 20 possession.
Channel Catfish Catch Rate by Size Category

- **Sub Stock < 11"**
- **Stock 11" to 16"**
- **Quality 16" to 24"**
- **Preferred 24" to 28"**
- **Memorable 28" to 36"**
- **Trophy > 36"**

CPUE (No./net-night)

Year

- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
Sauger Catch Rate by Size Category

- **Sub Stock < 8"**
- **Stock 8" to 12"**
- **Quality 12" to 15"**
- **Preferred 15" to 20"**
- **Memorable 20" to 25"**
- **Trophy > 25"**

CPUE (No./net-night)

Year:
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
Smallmouth Bass Catch Rate by Size Category

- Sub Stock < 7"
- Stock 7" - 11"
- Quality 11" to 14"
- Preferred 14" to 17"
- Memorable 17" to 20"
- Trophy > 20"
Bighorn River
BIGHORN FLOW RECOMMENDATIONS

- Flushing flows 6,000 to 8,000 CFS
- Best Fisheries Flow - Greater than 2,500 cfs
- Preferred Minimum Fisheries Flow – 2,500 cfs has maintained the strong Bighorn Fishery
- Water Savings Minimum Flow – 2,000 to 2,500 cfs
- Absolute Minimum Flow - 1,500 to 2,000 cfs
Side Channel at 1,500 CFS
DROUGHT
Side Channel at 1,900 CFS
LESS DROUGHT
Flooded trees and islands don’t support spawning habitat for trout.
Flood plains do provide habitat and space for fish and spawning habitat for some fish.
Can increase productivity and increase survival rates of fish.
June 1st to September 30th Bighorn Reservoir 1967-2008 Pre and 2009 to 2016 Post Elevation Comparisons.

<table>
<thead>
<tr>
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<th>Pre</th>
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<td>26%</td>
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<td>3620 to 3640</td>
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<tr>
<td>&gt;3640</td>
<td>12%</td>
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Bighorn River 1967-2008 Pre and 2009 to 2016 Post Flow Comparisons
June Through September.

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<tr>
<td>&gt;=8000</td>
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2016 Estimate
1,536 brown trout
1,485 rainbow trout
2,542 Combined all sizes
Bighorn River Upper Trout Section Population Estimate for Trout Greater Than Eight Inches

Fish Per Mile

Year

Brown
Rainbow
Combined

Brown Trout
Brown Trout Upper Section Estimate Per Mile with 95% CI

Fish per Mile vs. Year

- Brown Trout All Sizes
  - upper
  - lower
- Brown Trout > 8"
  - upper
  - lower

- estimate
BROWN TROUT-UPPER SECTION LENGTH FREQUENCY

![Bar chart for 2015 (n=2,927) with categories: recap, 2nd, 1st.](image)

![Bar chart for 2016 (n=2,535) with categories: recap, 2nd, 1st.](image)
Bighorn River Upper Section Annual Estimate with 95% CI for Rainbow Trout

Rainbow Trout Per Mile

Year

Rainbow Trout, All Sizes

Rainbow Trout > 8”
RAINBOW TROUT-UPPER SECTION LENGTH FREQUENCY

2016

2015

Number

Inches

Number

Inches

recap
2nd
1st
2016 Estimate
851 brown trout
351 rainbow trout
1,210 Combined
all size
Brown Trout
Brown Trout Lower Section Estimate Per Mile with 95% CI

Fish per Mile

Year

Fish per Mile

Brown Trout All Sizes

upper
lower
estimate

Brown Trout >8”

upper
lower
estimate

Year
Rainbow Trout
Rainbow Trout Lower Section Estimate Per Mile with 95% CI

Rainbow Trout All Sizes

Rainbow Trout > 8”
Rainbow Trout Lower Section Length Frequency

2016

n=533

2015

n=594

Inch Group
Thank-you

Happy Fishing
Montana, Bighorn River Trout Section
Angling Pressure
by MTFWP Mail Survey

Year

1989  1991  1993  1995  1997  1999  2001  2003  2005  2007  2009  2011  2013  2015

Angler Days Bar's

Bighorn FAS to Afterbay
Little Bighorn to Bighorn FAS

<table>
<thead>
<tr>
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<th>Post (%)</th>
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<tbody>
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<td>&lt;1500</td>
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**Legend:**
- **Pre**
- **Post**

<table>
<thead>
<tr>
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<td>48%</td>
<td>78%</td>
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<tr>
<td>&gt;3640</td>
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