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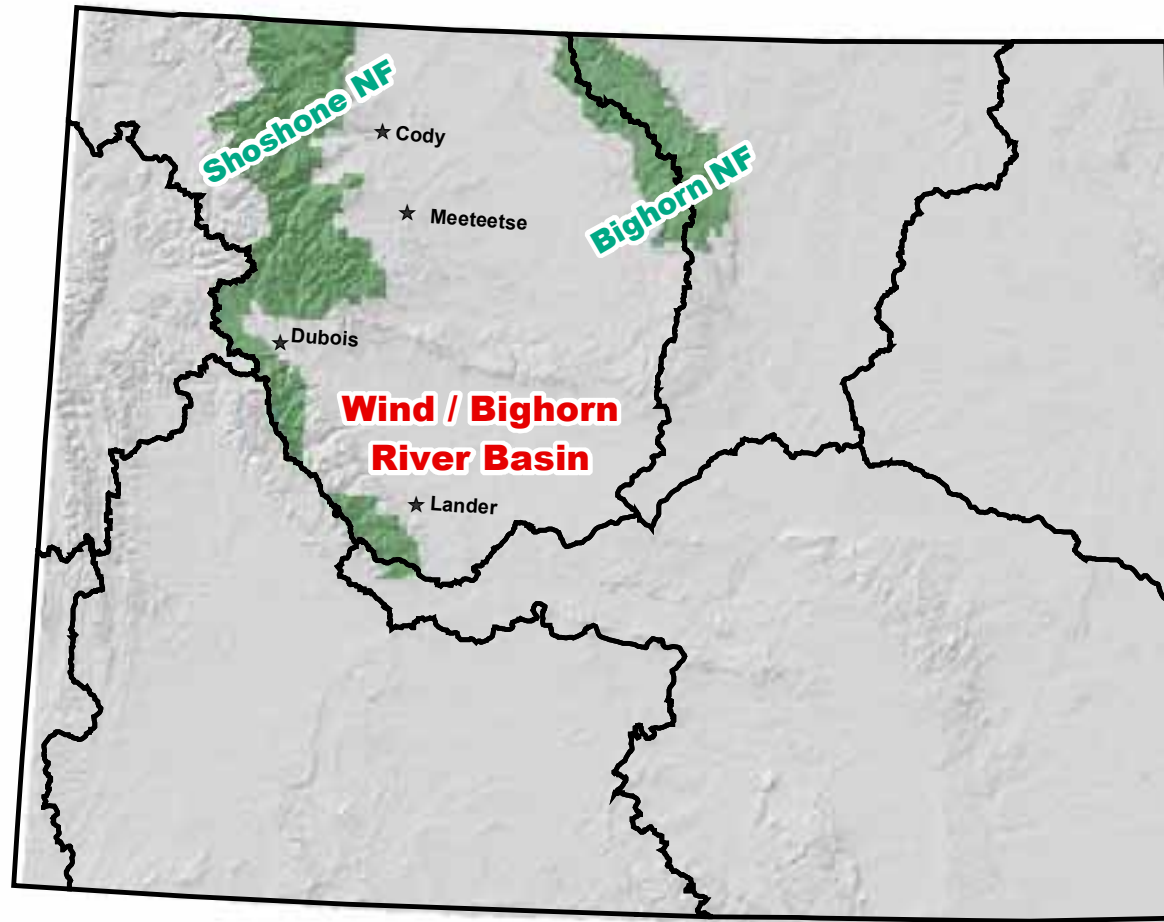
# Watershed Management Program

Soil, Water, Air and Hazardous Materials

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**Shoshone National Forest, Wyoming**

# National Forests within the Planning Area

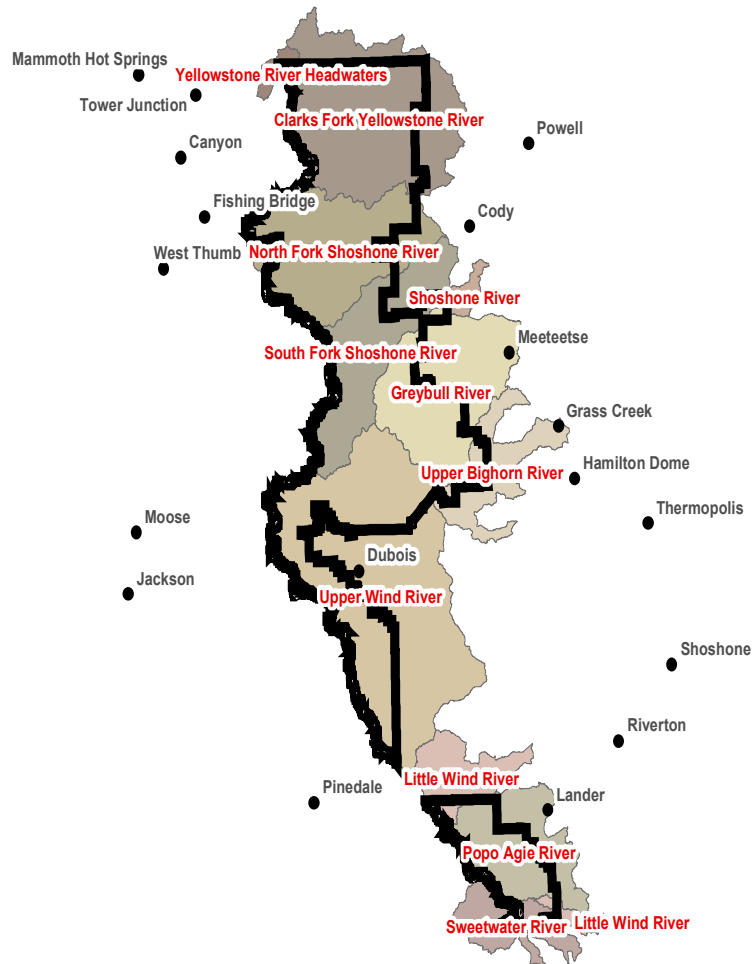


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# Shoshone and Bighorn National Forests

- Established under the 1897 Organic Act
    - Primary Purpose
      - Secure favorable conditions of water flows
        - ...watersheds must be cared for to sustain their hydrologic function as “sponge-and-filter systems that absorb and store water and naturally regulate runoff...
    - Primary Goals
      - Good vegetation and ground cover
      - Streams in dynamic equilibrium with their channels and flood plains
      - Natural conveyance of water and sediment
-

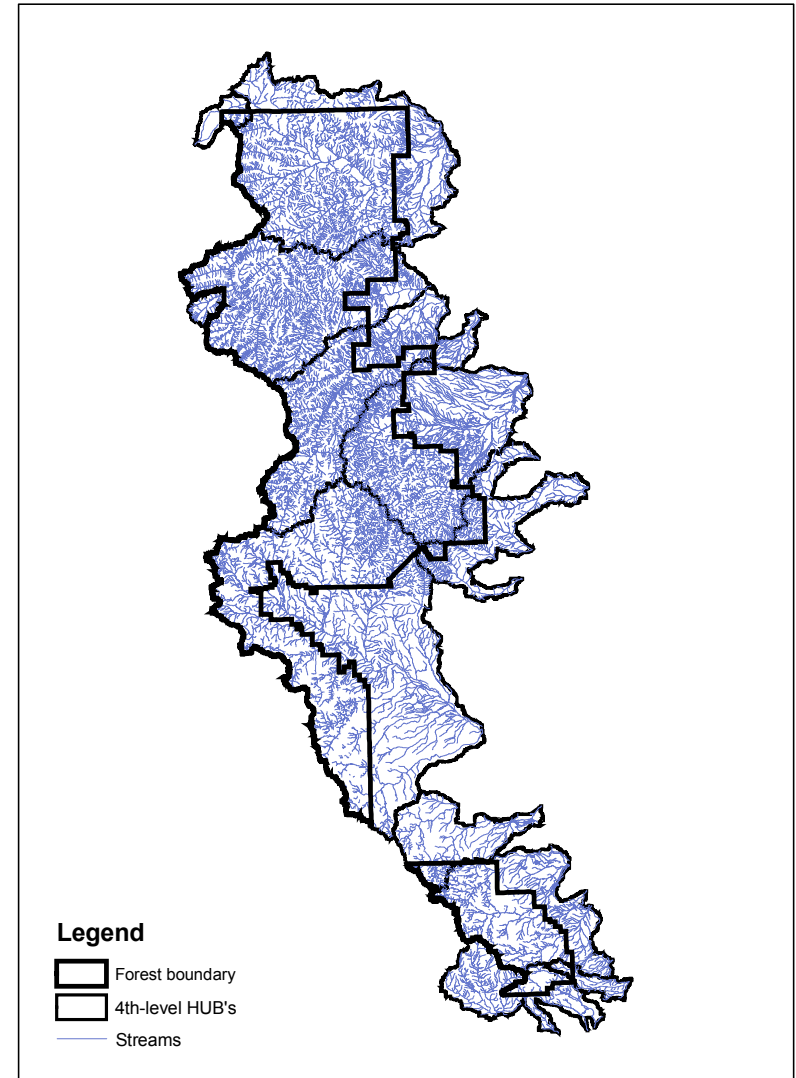
# Shoshone National Forest Watersheds



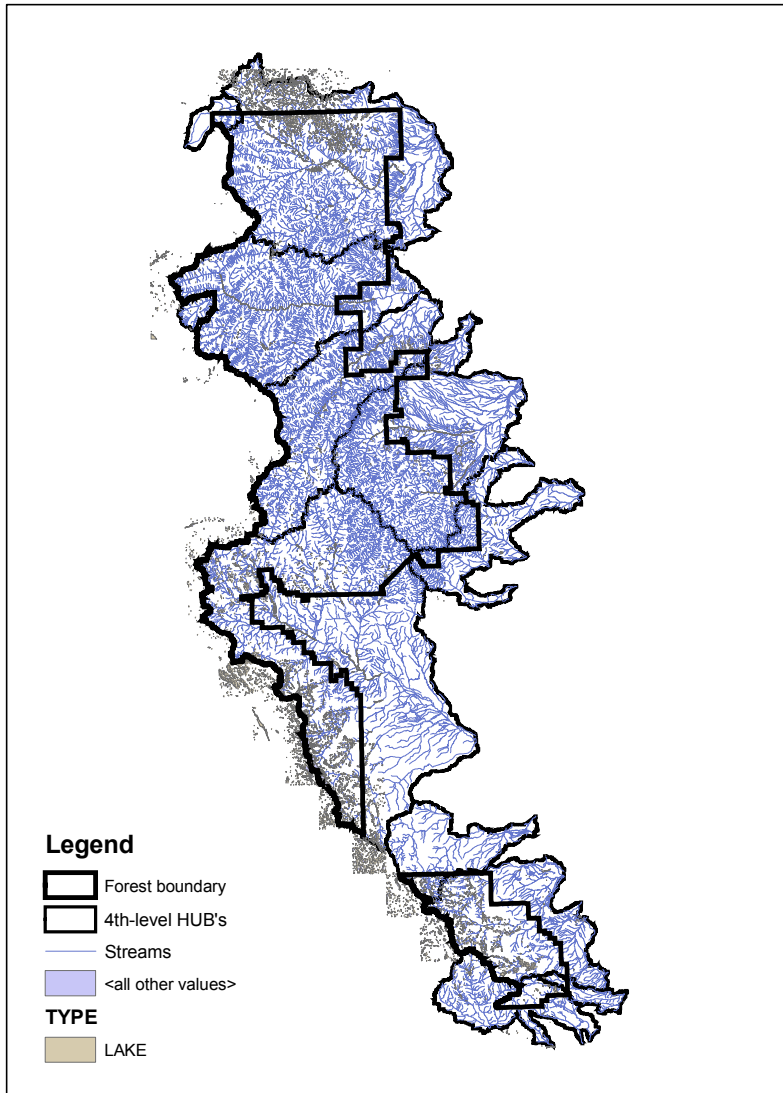
- Headwaters for:
  - ❑ Yellowstone River
  - ❑ Clarks Fork Yellowstone River
  - ❑ North Fork Shoshone River
  - ❑ South Fork Shoshone River
  - ❑ Greybull River
  - ❑ Upper Bighorn River
  - ❑ Upper Wind River
  - ❑ Little Wind River
  - ❑ Popo Agie River

# SNF Streams

- 19,087 miles of channel
  - 4,217 miles perennial stream (22%)
  - 4,551 miles intermittent stream (24%)
  - 10,319 miles ephemeral stream (54%)



# SNF Waterbodies



- 2,100 lakes
  - 500 are a fishery
- 50,000+ acres of wetland and riparian area
  - Majority are rated fully functioning
  - Some are rated functioning at-risk or non-functioning

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# SNF Watershed Management Staff

- Staff Officer – Dave Cawrse
    - Program Manager – Greg Bevenger
      - Hydrologist – Brad Higginson
      - Hydrologist – Liz Oswald
      - Hydrologist Trainee – Karri Meador
      - Soil Scientist – Kent Houston
      - Soil Scientist – Kathy Emerson
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# SNF Key Watershed Management Program Areas

- Support to Other Programs
    - Timber, Range, Fire, Engineering, Wildlife/Fisheries, Recreation
  - Watershed Assessments
  - Watershed Improvement Projects
  - Water Uses/Water Rights
  - Base Inventory/Monitoring
  - Burned Area Emergency Response (BAER)
  - Hazardous Materials
-



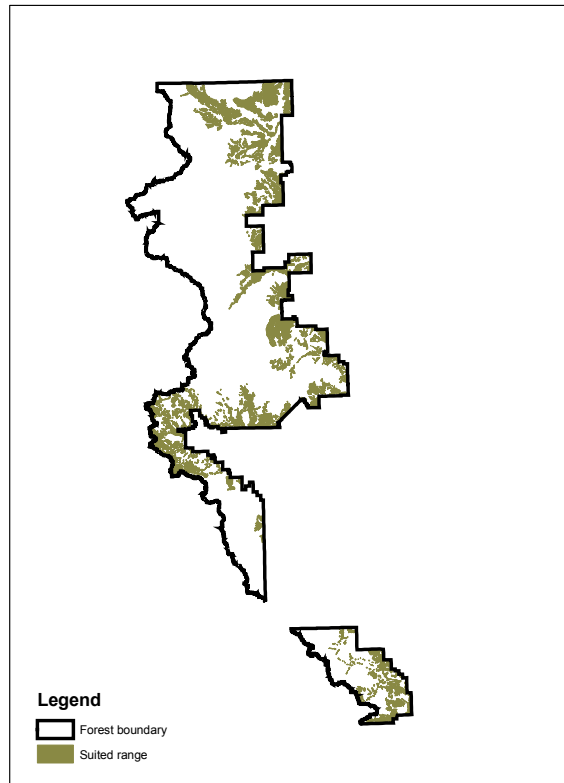
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# Support To Other Programs

- Environmental Assessment (NEPA)  
Interdisciplinary Team Members
    - Soil, Water and Air Effects Analysis
    - Mitigation Development
  - Project Monitoring
    - Formal Interdisciplinary Best Management Practices (BMP) Reviews
    - Informal BMP Reviews
-

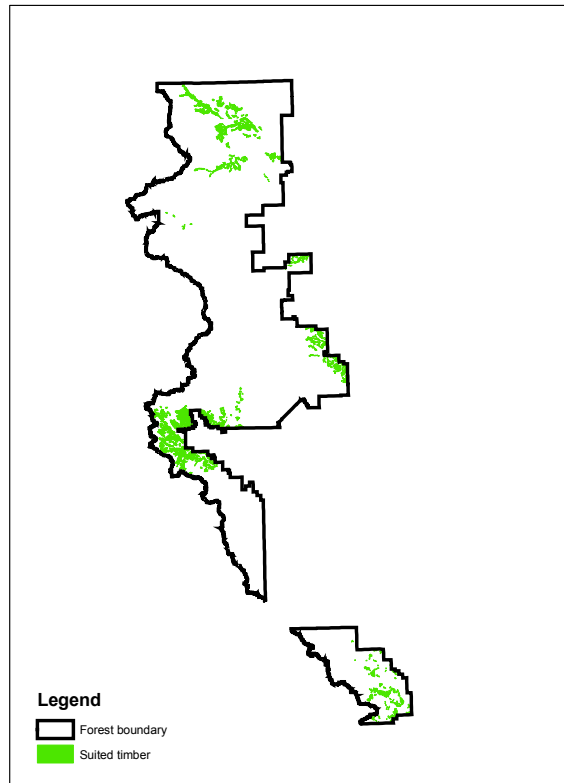
# Livestock Grazing BMP Review

- [union\\_pass allotment  
bmp\\_review.doc](#)



# Timber Sale BMP Review

- [west\\_goose\\_sale\\_bmp\\_review.doc](#)



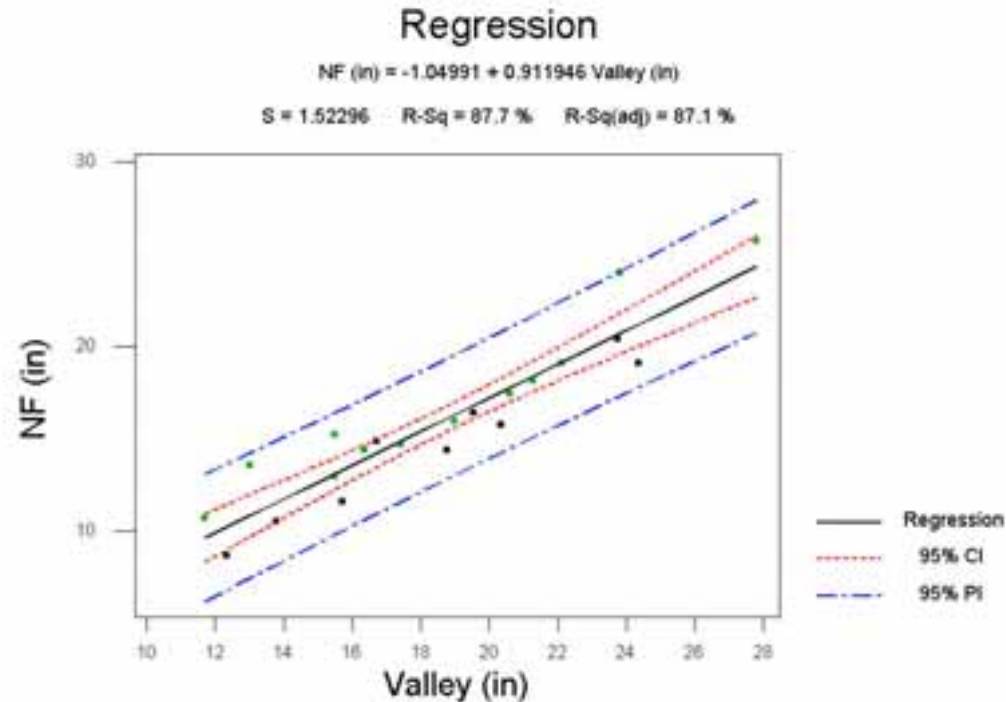
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# Watershed Assessments

- Ecosystem Analysis at the Watershed Scale – Federal Guide to Watershed Analysis
    - Watershed Characterization
    - Issues and Key Questions
    - Current Conditions
    - Reference Conditions
    - Synthesis and Interpretation
    - Recommendations
  - Watershed Scale is the 5<sup>th</sup>-Level HUB
  - Ten-year Cycle
    - One to two watersheds per year
-

# North Fork Shoshone

- Water yield increase in the downstream direction
  - 20-25% (5.4 inch) increase in flow from Clover-Mist Fire in Upper North Fork
  - Increase (0.7 inch) undetectable at USGS gage 30 miles downstream



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# Little Popo Agie River

- Stream flow change over time
    - Changes in climate
    - Changes in vegetation
  - Results
    - [porth lpwa results.doc](#)
-

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# Watershed Improvement Projects

- Purpose

- Erosion Control
- Water Quality Improvement

- Projects

- 5-Year Action Plan
-

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# Water Uses/Water Rights

- Water Rights Investigations
    - Bighorn Adjudication
  - New applications
    - Internal
      - Stock
      - Recreation
      - Fisheries
    - External
-



# Base Inventory/Monitoring

- Integrated Resource Inventory

- Common Land, Vegetation and Water Units

- Next presentation

- Reference Streams

- Reach Inventory

- ..\reference\_reaches\sheep\_creek\_vs\_1302\sheep\_creek\_vs\_1302.xls

- Regional Database

- ..\assessments\Merged Pebbles.xls
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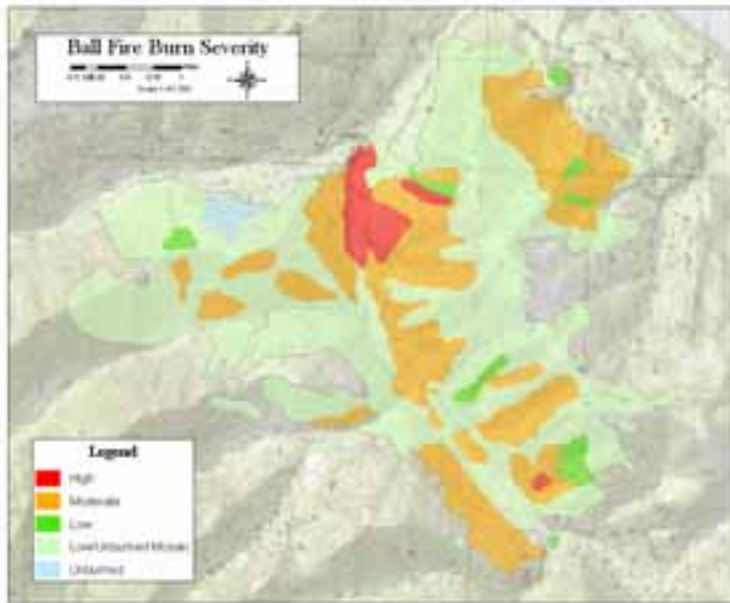
# Base Inventory/Monitoring

## Air Quality

- ❑ National Atmospheric Deposition Program (NADP) site at South Pass
- ❑ Visibility site at Dead Indian Pass
- ❑ Acid deposition monitoring at Ross and Saddlebag Lakes

# Burned Area Emergency Response

- ..\baer\blackfoot lake fire complex\blackfoot lake fire complex 25008 final.doc



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# Hazardous Materials

- Cleanup, storage and handling
  - Employee training
  - Emergency response
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