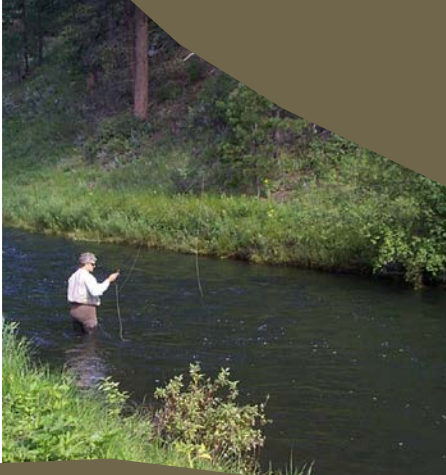


South Dakota

# GAME, FISH and PARKS

John Carreiro, Fisheries Habitat and Access



# Rapid Creek – Pactola Basin

# Rapid Creek Habitat Restoration



- History
- Limiting Factors
- Objectives of the Habitat Project
- Project Timeline
- Construction Photos
- Current Status of Fishery
- Future Projects

# History



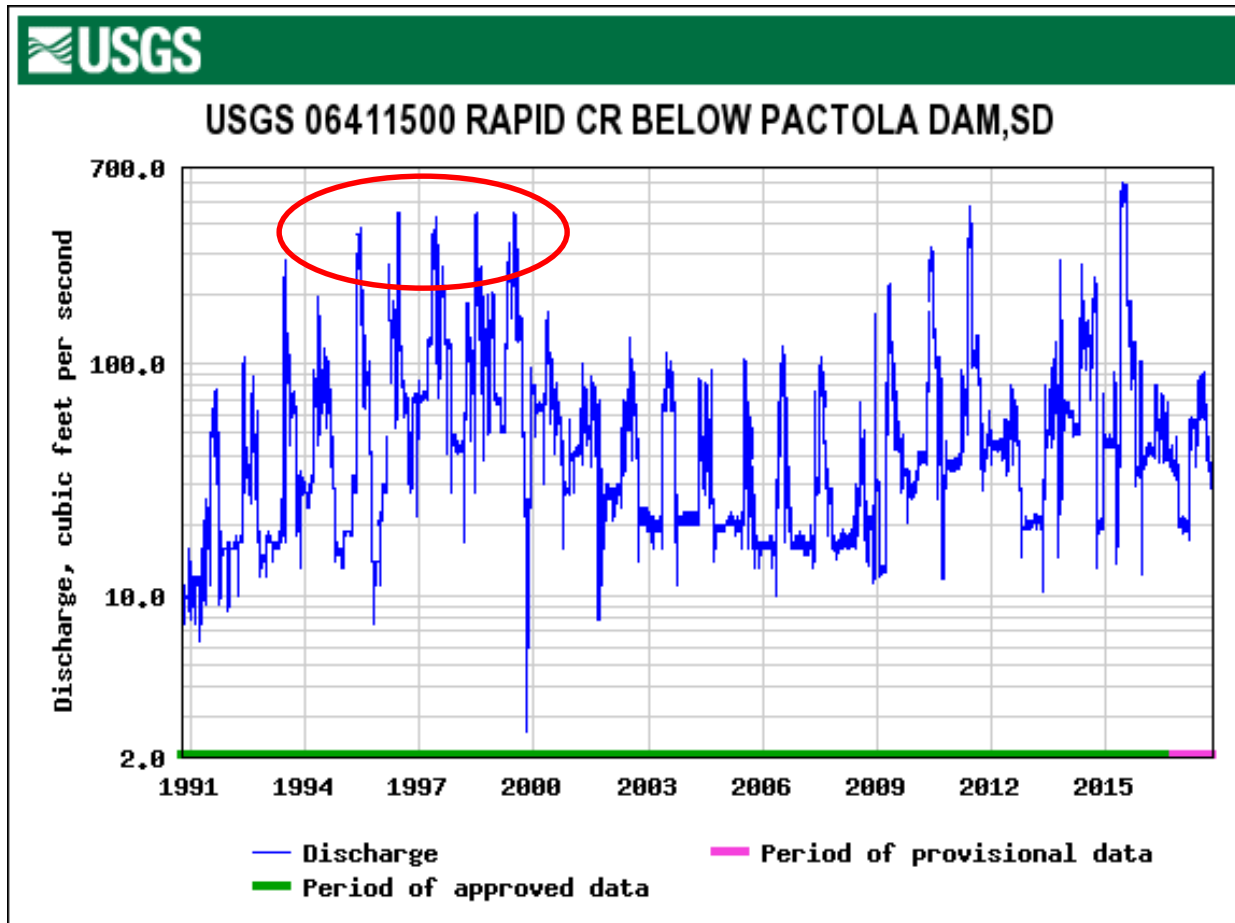
# Rapid Creek Habitat Restoration



# Limiting Factors



- Extreme Flows





# Limiting Factors

- Decrease in macrophyte abundance
- Cover
- Complexity
- *Didymosphenia geminata*



# Dewatering Conditions







# Objectives of Improvements

- Increase habitat complexity through the use of engineered large woody debris and rock placements
- Increase pool depth and cover for sport and native fish
- Increase survival and recruitment

# Rapid Creek Habitat Restoration





# Project Timeline

- **2004** – Initial planning and design for catch and release area below Pactola
- **2005** – Large outbreak of Didymo
- **2011** – Update of Survey and Design
- **2013** – Storm Atlas
- **2014** – High water event



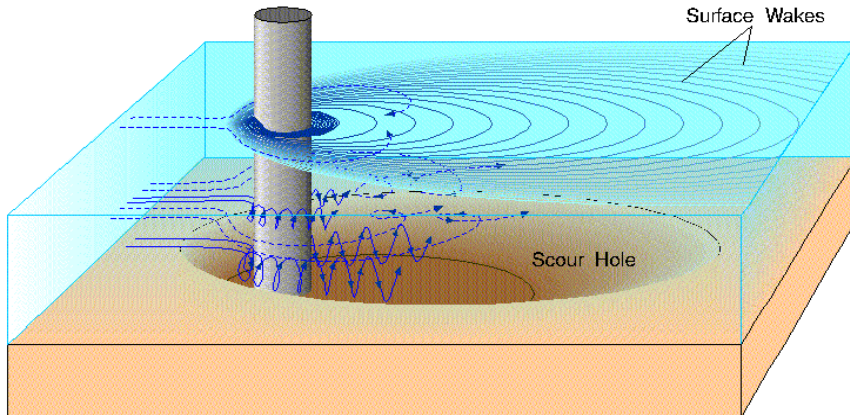
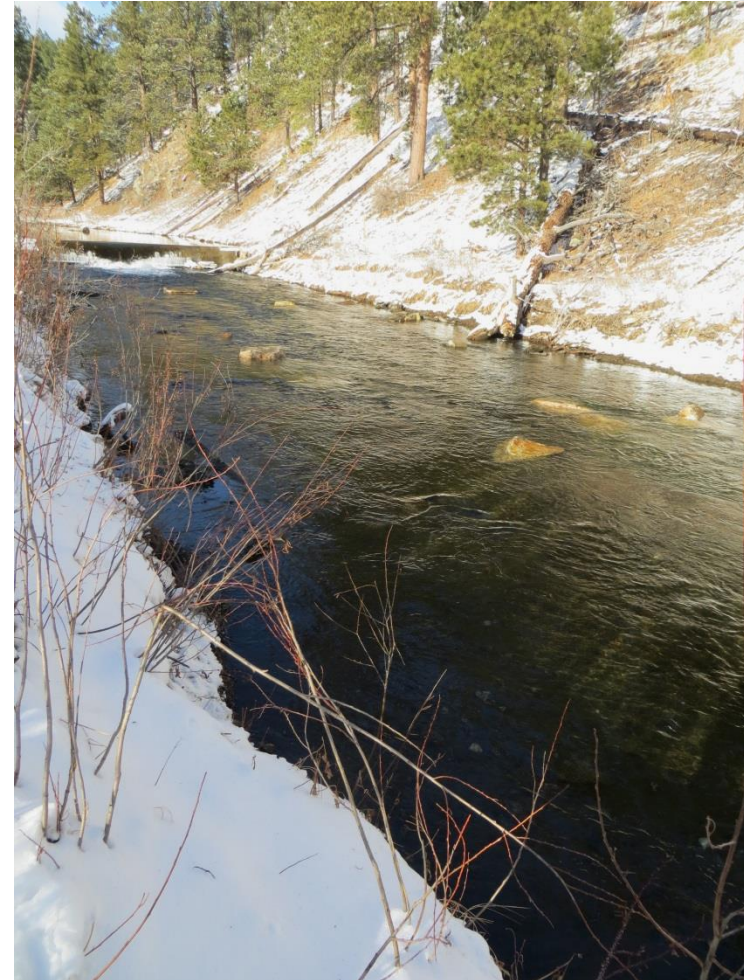
# Timeline cont.



- **2015 – Construction began December 2015**
- **Use of Large Woody Debris (LWD), Fabric Encapsulated Lifts and Boulder Placements to improve complexity of stream**
- **2016 – Project completion February 2016**

# Rapid Creek Habitat Restoration

## Boulder placements



# Rock Placements



# Large Woody Debris









# Bank Protection



# Floodplain wood





# Fabric Encapsulate Lifts



# Rapid Creek Habitat Restoration



# Rapid Creek Habitat Restoration Time Lapse



PLOTWATCHER PRO 1 12/15/2015 11:43:24AM 83% 3F )

# Rapid Creek Habitat Restoration Time Lapse



PLOTWATCHER PRO 1 12/17/2015 10:09:07AM 83% -2F ▶



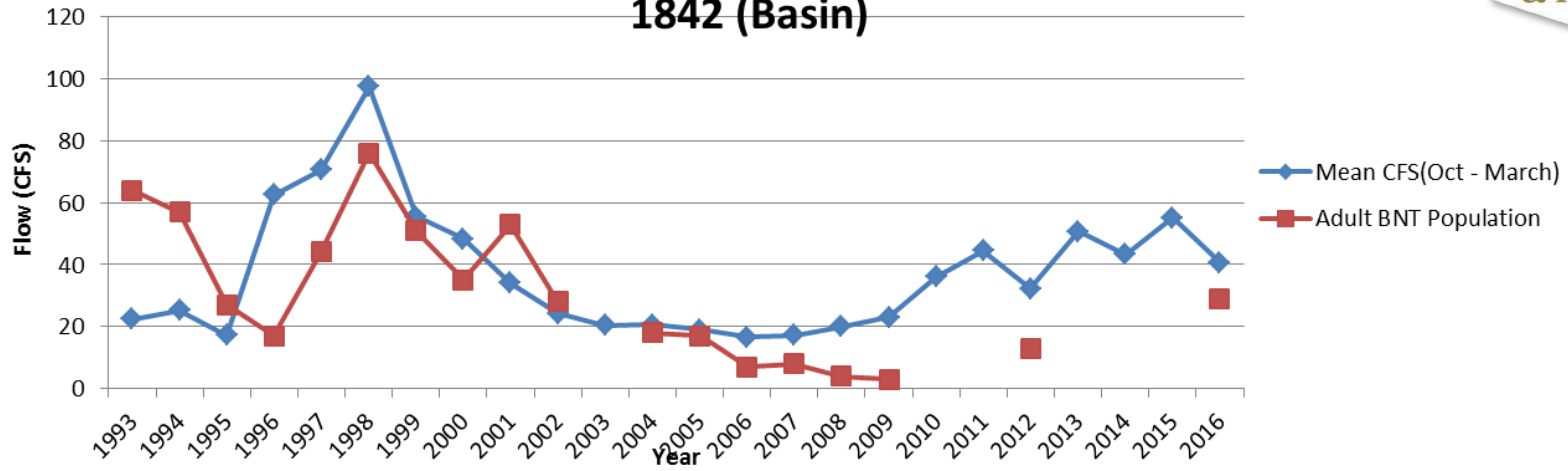
# Rapid Creek Habitat Restoration Time Lapse



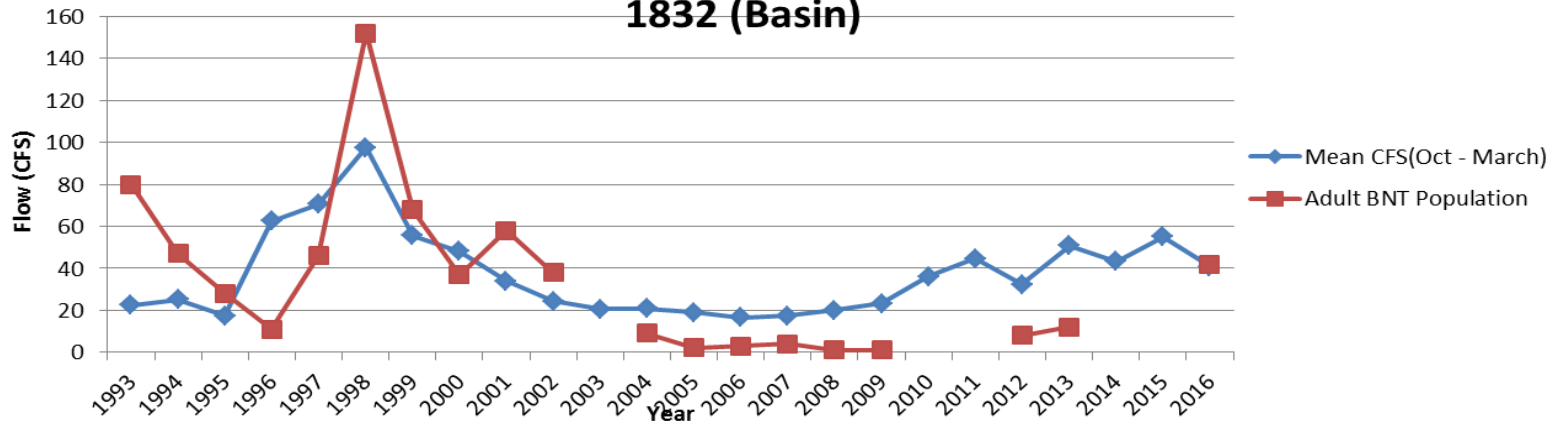


# Current Status of Fishery

## Adult Brown Trout Population and Mean Winter Flow at Site 1842 (Basin)



## Adult Brown Trout Population and Mean Winter Flow at Site 1832 (Basin)



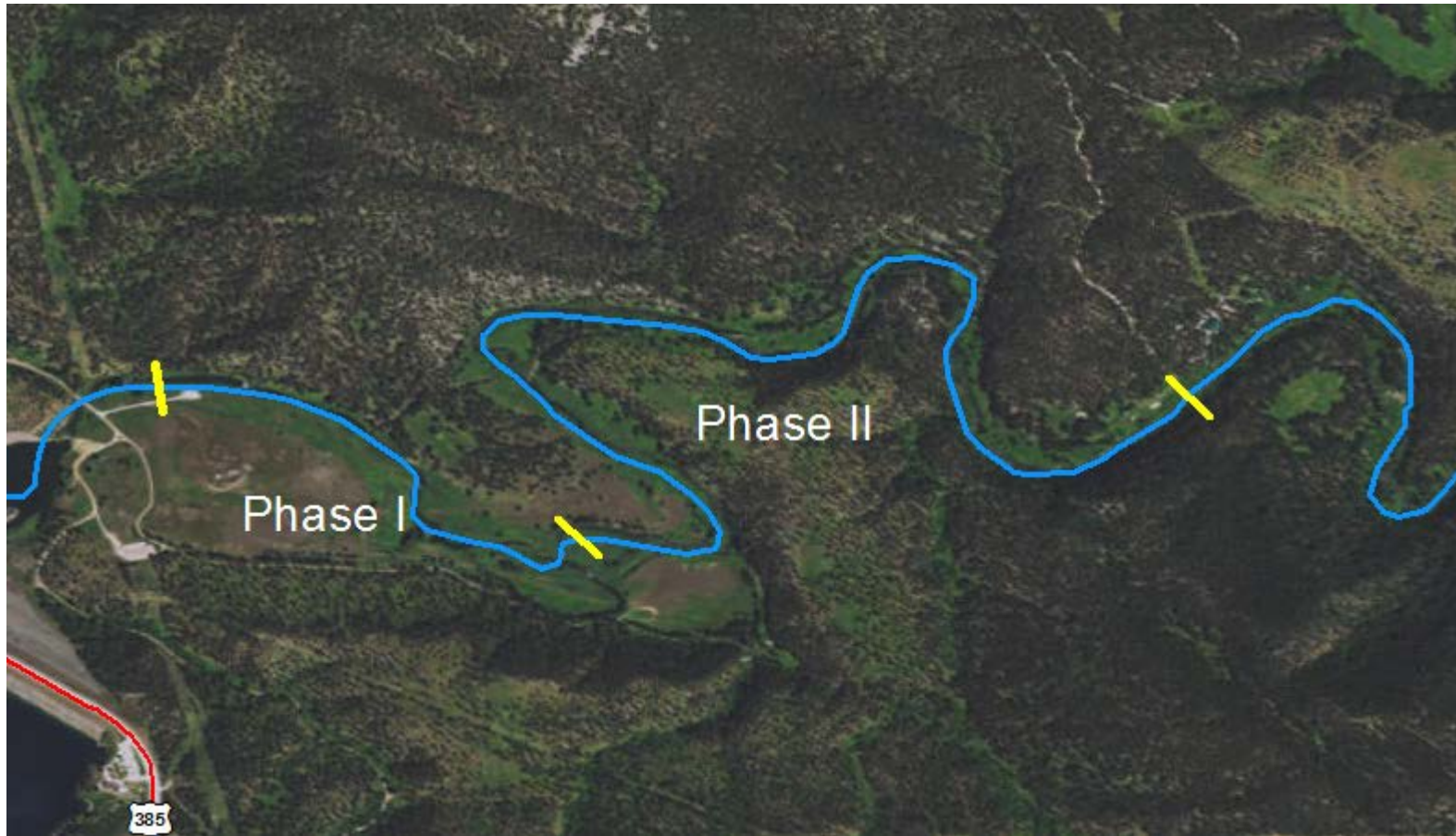


# Future Projects

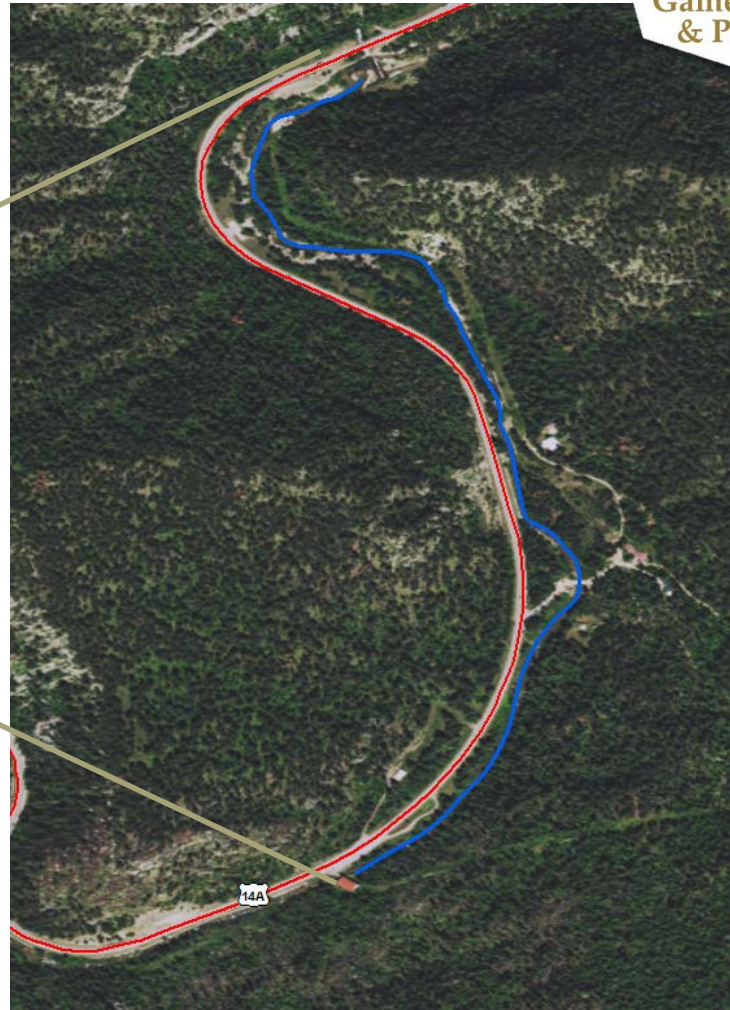
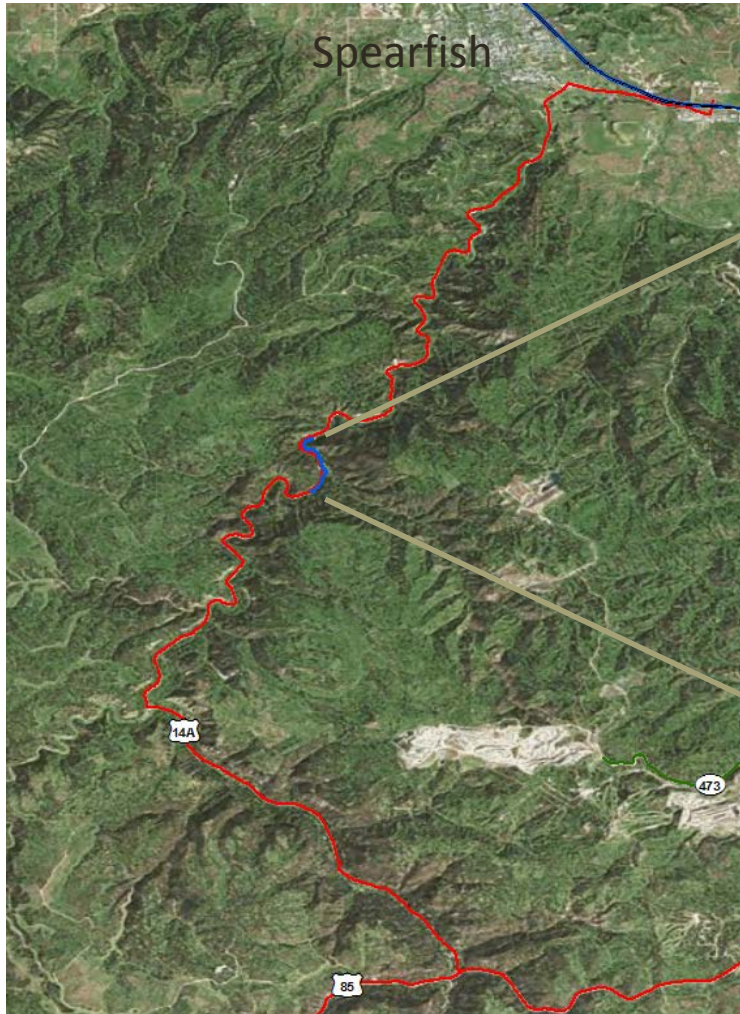
# Rapid Creek



- Phase II of Rapid Creek Restoration



# Spearfish Creek





SOUTH DAKOTA

Game, Fish  
& Parks