

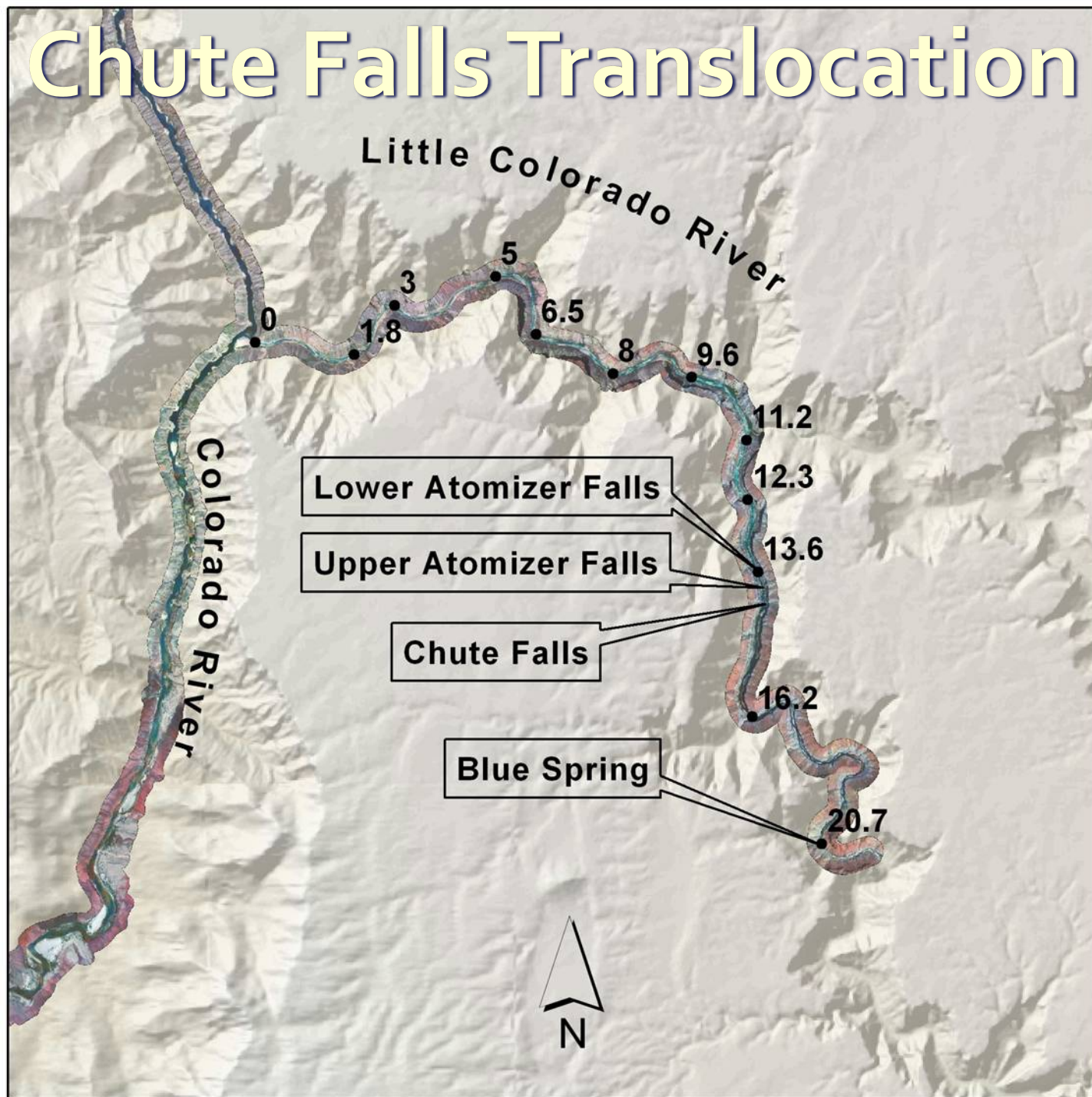
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U.S. Fish and Wildlife Service
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HUMPBACK CHUB TRANSLOCATION AND REFUGE DEVELOPMENT



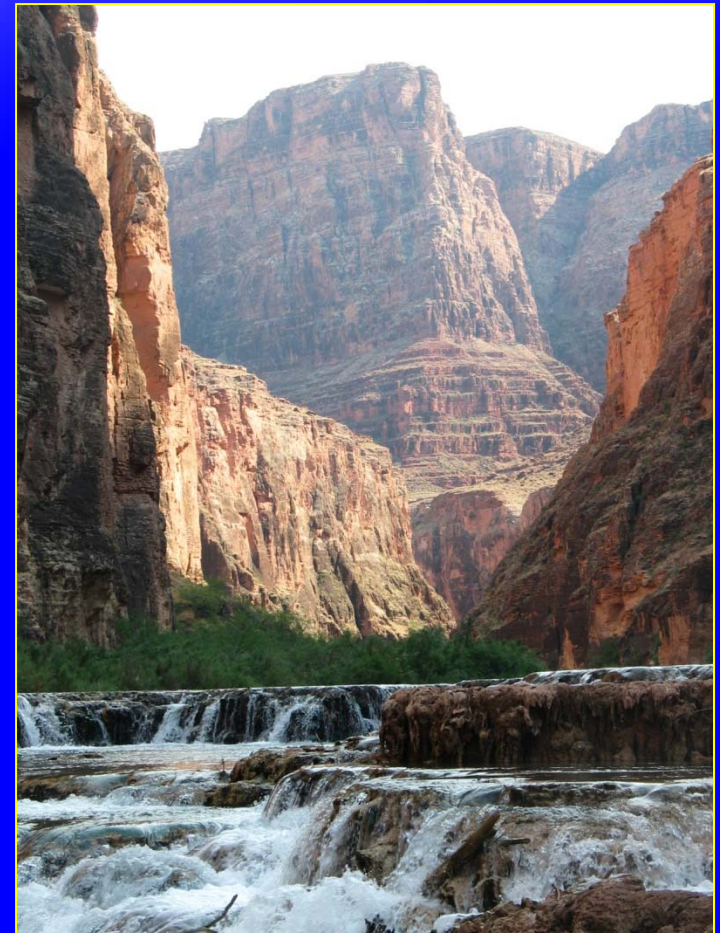
Chute Falls Translocation



Chute Falls Translocation

2003-2009

- ◆ Conservation Measure of 2002/2008 Biological Opinion
- ◆ Improve survivorship of young chubs
- ◆ Increase abundance of HBC
- ◆ Better understanding of life history
- ◆ Translocated 1,643 juvenile humpback chub 50-120 mm TL (2003=283, 2004=300; 2005=567; 2008=299; 2009=194)
- ◆ Marked with elastomer tags 2003-2005, PIT tags in 2008-2009



Chute Falls Translocation Results

- ◆ Fastest growth rates ever recorded in humpback chub, 6-10.4 mm/month; 2yr old fish >200mm (~8 mm/month in 2008/9)
- ◆ Spawning indicated by presence of fish in breeding condition and fry continued to be documented in 2009
- ◆ Movement of marked wild fish from below the falls (n=5), 1 during base flow conditions
- ◆ Increased demographic range by 4km





Chute Falls Translocation 2008-2012

- ◆ Conservation Measure of 2008 BO
- ◆ 299 Juvenile humpback chub translocated 17-21 July 2008
- ◆ 194 Juvenile humpback chub translocated July 23, 2009
- ◆ 80-130 mm TL, all PIT tagged
- ◆ Mean size 117 mm TL in 2008, 118 mm TL in 2009
- ◆ 2010-12 will be dependent on monitoring results
 - ◆ Approximate natural population size and age distribution
 - ◆ Maintain population at a minimum of 200 individuals





Humpback Chub Refuge Development

- ♦ Conservation Measure from 2008 BO
- ♦ FWS goal is to create two refuge populations of 1,000 fish each, based on geneticist recommendations, to represent the genetic diversity of the wild Grand Canyon population and can be used to reestablish the wild population in the event of a catastrophic loss
- ♦ 557 (284 from 2008, 273 from 2009) juvenile humpback chub collected in July and August 2008, July 2009 from near the mouth of the Little Colorado River currently at Dexter National Fish Hatchery and Technology Center
- ♦ Goal is to collect additional humpback chub from the Little Colorado River in 2009 to augment the Dexter NFH refuge population and for translocations to Shinumo Creek
- ♦ Manuel Ulibarri, FWS Hatchery Manager

