Razorback Conservation without Predator Control: An Obituary

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Minckley's 1990: Native Fish of the Grand Canyon Area: An Obituary?

➢**Spawned of the concept of using Dam Releases to manipulate habitat in favor of natives**

➢**Biological benefits remain illusive**

➢**Native Fishes are being actively managed in some location s to the actual detriment of sport fisheries**

Native Fish Management Corridors

Mainstem River reaches managed exclusively for Native Fish.

➢**Downstream Lee's Ferry**

➢**Lower San Juan River**

Mainstem Predation is Accepted in the Lower Basin

➢ **Mechanical predator removal is not a viable alternative**

　➢ **Technically impossible**

　➢ **Economically impossible**

　➢ **Water quality issues**

　➢ **Failed in Upper Basin**

　➢ **Sport fisher conflicts**

Unique Situation between Davis Dam and Lake Havasu

➢ **Largest river spawning group of razorbacks**

➢ **Reach supports flannelmouth suckers**

➢ **Present range of river and reservoir operations are exercised**

   ➢ **Significantly low winter flows (<1,000 cfs)**

   ➢ **Annual reservoir drop of 10 ft. for maintenance**

   ➢ **BUT never together which minimizes impacts!**

What is Allowing Flannelmouth Recruitment?

➢ **Flannelmouth are in the river channel**

➢ **Predators=less abundant in the channel**

➢ **Flannelmouths don't need backwaters**

➢ **Winter low and fluctuating hydropower limits resident predator communities**

➢ **Excalante River Example**

What is Preventing Razorback Recruitment?

➤ **PREDATION!!!**

➤ **In Winter, predators concentrate in deep backwaters and Havasu's Delta area**

➤ **Razorback spawn much lower and unlike flannelmouths, They do use backwaters**

➤ **However, these areas are filled with resident and seasonally inflated predator communities**

"Backwater Reset" Concept

➢ **Nurseries were 'temporary'**

   ➢ **During low flows they drained**

   ➢ **Refilled during spring runoff**

➢ **NO Resident predator communities**

➢ **Razorback larvae benefited from predator 'free' nurseries**

➢ **Those conditions NO LONGER exist!**

WHAT IF WE??

➢ **Drew down the river and reservoir AT the same time in December?**

➢ **Would it Displace predators from backwaters into the channel?**

➢ **Follow with spike flush**

➢ **Would it Displace them downstream?**

➢ **Would we reduce predator pressure?**

➢ **Could we detect Razorback recruitment?**

Conditions Necessary to Work

- ✓ **Spawning Population**   **YES**
- ✓ **Operational Flexibility**   **YES**
- ✓ **Simultaneous draw downs**   **Possible?**
- ✓ **Flushing Spike Flow**   **YES**
- ✓ **Resource Agency Buy-in**   **Doubtful**

What Options do We Have?

STATUS QUO!

Thanks for considering one more crazy idea!