

Beneficial Use of Non-Native Fishes Removed from the LCR Reach of the Colorado River

“Proposed Experimental Releases
From Glen Canyon Dam and
Removal of Non-Native Fish”
(USDO I, Sept. 2002)

subsection 2.2.2 “Mechanical Removal of Non-Native Fish”. Subsection 2.2.2 reads as follows:

A second key component of the Proposed Action is assisting native fish through mechanical removal of non-native fish. Non-native fish removal is targeted at reducing adult rainbow and brown trout and other non-native fish in the Colorado River near the confluence of the Little Colorado River.....

*The proposed disposal mechanism for non-native fish would be to transport the fish out of the Grand Canyon. **In response to concerns expressed by tribes, a beneficial use would be sought for the fish thus removed.***

'Beneficial' Use Options

- **Option 1. Live removal and restocking of non-native fishes to other waters.**
- **Option 2. Removal of non-native fishes in a fresh or frozen state for human consumption.**
- **Option 3. Removal of non-native fish biomass for direct land application as agricultural fertilizer.**

‘Beneficial’ Use Options

cont.....

- Option 4. Removal of non-native fish biomass for fertilization of fish rearing ponds at the Hualapai Fish Hatchery.**
- Option 5. Removal of non-native fish biomass for use as a fish emulsion.**
- Option 6. Removal of non-native fish biomass for use as pet food or other animal food supplement.**

‘Beneficial’ Use Options

cont.....

- **Option 7. In Situ disposal of non-native fish biomass to recycle nutrient and energy material in the Colorado River Ecosystem.**
- **Option 8. Land based disposal in a land fill.**

Live removal and restocking of non-native fishes.

- Potentially feasible based on logistics
 - Helicopter and fish transport trucks
 - Holding facilities on river
 - USFWS assistance
- Substantial additional costs and permitting issues
 - \$500,000 1st year, \$420,000 2nd year
 - Helicopter flights, presence on the river, tribal access

Removal of non-native fishes in a fresh or frozen state for human consumption

- Transport by helicopter(LCR) or truck from Diamond Creek
- Issues with USDA and FDA regulations
- No interest expressed by commercial fisheries vendors

Removal of non-native fish biomass for land application as agricultural fertilizer on Native American Reservation(s)

- Concept of community garden plots for use by tribal members to provide food
- Relatively low cost alternative
- Interest expressed by Hualapai Tribe
 - Existing native seed gardening underway
 - Possibilities for expansion
 - Arizona Cooperative Extension Service

Removal of non-native fish biomass for fertilization of fish rearing ponds at the Hualapai Fish Hatchery

- Fertilization of fish rearing ponds is a common hatchery practice
- No interest in this option expressed by Hualapai Tribe

Removal of non-native fish biomass for use as a fish emulsion.

- Commercial industry exists providing fish emulsion as fertilizer for horticultural purposes
- Three commercial vendors contacted were not interested in this option due to quantity and logistics concerns

Removal of non-native fish biomass for use as pet food or other animal food supplement.

- Fish and fish by-products commonly used as protein supplement in commercial feed
- Nestle Purina Inc. contacted relative to this option-no response received

In Situ disposal of non-native fish biomass to recycle nutrient and energy material in the Colorado River Ecosystem.

- Original GCMRC proposal and best ‘science’ alternative
- Concerns over water quality, predation, other species

Disposal of non-native species biomass in a land fill.

- Secondary proposal by GCMRC in response to stakeholder input
- Tribal concerns over ‘wasting’ of life

Remaining Viable Options

- Agricultural fertilizer use on reservation(s)
- Live transport for restocking