Work Task C46: Physiological Response in BONY and RASU to Transport Stress

FY13 Estimate	FY13 Actual Obligations	Cumulative Expenditures Through FY13	FY14 Approved Estimate	FY15 Proposed Estimate	FY16 Proposed Estimate	FY17 Proposed Estimate
$70,000	$72,730.42	$288,495.92	$0	$0	$0	$0

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Start Date: FY11

Expected Duration: FY13

Long-term Goal: To maintain an effective fish augmentation program.

Conservation Measures: BONY3, BONY4, BONY5, RASU3, RASU4, and RASU6.

Location: SNARRC and Achii Hanyo Rearing Facility.

Purpose: Characterize the physiological stress response of BONY and RASU during pond harvest, tagging, and before, during, and after transport, and discern levels of recovery and post hauling mortality to develop an effective transport protocol.

Connections with Other Work Tasks (past and future): This work is related to Achii Hanyo Rearing Station (B3), SNARRC (B4), Razorback Sucker Rearing Studies (C10), and Bonytail Rearing Studies (C11).

Project Description: This three-year study will characterize the physiological stress response of BONY and RASU before, during, and after a 12-hour transport. Results will be used to develop and test revised hauling procedures to minimize such stress.

Previous Activities: Blood sample collection of BONY and RASU was completed during each handling event that occures prior to stocking: pond harvest, tagging, and before, during, and after transport. The detection of largemouth bass virus (LMBV) at SNARRC prohibited the transport of fish to Achii Hanyo Rearing Facility. The first group of BONY were transported for 12 hours simulating a stocking run before returning to Dexter. Afer testing negative twice for LMBV the second group of BONY were able to be tranported to Achii Hanyo, exposing BONY to water quality conditions more representative of the Colorado River. Blood sampling was completed to discern levels of plasma cortisol, glucose, chloride, and osmolality in RASU before, during, and after a 12-hour transport from SNARRC to Achii Hanyo Rearing Facility.

FY13 Accomplishments: Assays and analysis of plasma cortisol, glucose, lactate, chloride, and osmolality levels in BONY and RASU were completed. An increase in

plasma cortisol, glucose, and lactate levels were reported after each handling event. Plasma chloride levels and osmolality fluctuated among all sampling times. A 48-hour recovery period between multiple handling events is suggested as a minimum to reduce blood chemistry stress indicators to acceptable levels. As an added precaution, SNARRC has employed a 5-7 day period to provide additional time for recovery.

FY14 Activities: Closed in FY13.

Proposed FY15 Activities: Closed in FY13.

Pertinent Reports: A final report will be posted to the website when available.