

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

FY11 Estimate	FY11 Actual Obligations	Cumulative Expenditures Through FY11	FY12 Approved Estimate	FY13 Proposed Estimate	FY14 Proposed Estimate	FY15 Proposed Estimate
\$120,000	\$103,992.63	\$56,680.51	\$120,000	\$70,000	\$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: Dexter NFH 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), Dexter National Fish Hatchery (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: This effort is building upon research conducted under Razorback Sucker Rearing Studies (C10) and Bonytail Rearing Studies (C11).

FY11 Accomplishments: The handling and hauling portion of this study for BONY has been completed. Initial handling stress responses and subsequent recovery levels are to be obtained through blood plasma cortisol, glucose, lactate, chloride, and osmolality levels. Blood samples were taken from subsets of BONY prior to, immediately after, and 12, 24, and 48 hours post-handling, and prior to, during, and after, 0, 24, and 48 hours, and 7, 14, and 21 days post-hauling. Assays to measure plasma cortisol, glucose, lactate, chloride, and osmolality levels in BONY are being completed.

FY12 Activities: The second year of the study will measure and record levels of plasma cortisol, glucose, chloride, and osmolality in RASU before, during, and after a 12-hour transport from

Dexter NFH to Achii Hanyo Rearing Facility. RASU are to be netted from the truck and held in 500-liter circular tanks for three weeks to monitor for disease and mortality. Assays measuring plasma cortisol, glucose, lactate, chloride, and osmolality levels in BONY will be completed.

Proposed FY13 Activities: Data are to be analyzed and compiled into a final report including recommendations to improve handling and hauling protocols for BONY and RASU.

Pertinent Reports: N/A