**Immediate, short, and long-term survival of advanced fingering walleye**

Principle Investigator(s): Michael J. Weber

Graduate Student: Emily Ball (Ph.D.)

Collaborators: Rathbun Hatchery, Spirit Lake Hatchery, & other IA DNR Staff

Duration: January 2015 to May 2019

Objectives:

1. Evaluate stress levels and survival rates of advanced walleye fingerlings <48 hr post-stocking.
2. Evaluate diet shifts of and predation rates on advanced fingerling walleye.

PROGRESS: Emily Ball (PhD student, lower left) stared in January 2015. During spring and summer 2015, a research proposal was constructed and preparation for the upcoming fall field season commenced. Field work began during late-September, approximately 50 fry stocked walleye were collected from East Okoboji, PIT tagged, and dorsal spines were collected so individuals could be aged. Additionally, age-0 walleye predation was assessed in East Okoboji prior to stocking advanced fingerling walleye. Finally, 2,000 advanced walleye fingerlings from Spirit Lake Hatchery were PIT tagged and equally distributed into East and West Okoboji.

In October, 2,000 advanced walleye fingerlings from Rathbun Fish Hatchery were PIT tagged and equally distributed into East and West Okoboji. Assessment of post-stocking predation and diet composition of advanced fingerling walleye began immediately after stocking and continued until November 20 when snow and subfreezing temperatures forced sampling to cease. Predator gastric lavage suggests that predation on advanced fingerling walleye may be high immediately post-stocking but age-0 walleye were still identified in predator stomachs during mid-November. Additionally, blood samples (glucose and cortisol) were collected from walleyes stocked into Rathbun Lake, Big Creek, and East Okoboji. Blood samples will be used in conjunction with survival rates to assess immediate mortality (48 hours post-stocking) and stress associated with the transportation process (lower middle). This fall , 12 undergraduate students in AECL 333 spent a weekend at the Okoboji's assisting with field work for the project while learning about fish collection techniques, data collection, and sample processing (lower right).

IMPACTS: We have spoken twice to local angler groups who made a $1,000 donation to the project. IA DNR has donated a substantial amount of time helping to collect data. A presentation will be made to the IA DNR this winter. Undergraduate students have gained valuable experience collecting and processing fishes.

FUTURE PLANS: Predator and walleye diets and age-0 walleye isotope and lipid samples will be processed during the winter. Sampling will resume in spring following ice-off and over winter survival of age-0 walleye will be assessed. Additional sampling for the effects of transportation, post-stocking predation, and movement patterns will occur during falls 2016, 2017, and 2018.