2022 COOPERATIVE SUMMER FELLOWSHIP PROGRAM – PROJECT PROPOSAL

APPLICANT TYPE: GIS;ANY;ESA;

PROJECT TITLE: KOOTENAI RIVER HYDRAULIC DEVELOPMENT AND SIMULATION

Ryan Fosness,

Discipline: Surface Water;Modeling;Ecology;Field Mapping;

PROJECT DESCRIPTION

BACKGROUND

We will be collecting updated bathymetric data to update and develop two-dimensional streamflow models for specific reaches of the Kootenai River near Bonners Ferry, Idaho. The models will ideally be setup to run on an automated frequency for multiple reaches. At a minimum, the models will be used to simulate select periods (2011-2019) that overlap with spawning fishes (burbot and sturgeon).

INTERN TASKS

The ideal candidate for this position will be familiar with coding (python preferred) and use that ability to interrogate the two dimensional flow model using automated methods (windows task manager coupled with Python routines). Additional and alternative tasks may include multibeam sonar data collection and data processing, assisting with model development, performing model simulations, summarizing model results, publishing model archive as a USGS data release.

BENEFITS TO INTERN

The individual will directly participate in an active river restoration investigation. The individual will see a project from start (proposal) to finish (publication). Major task will include data collection (multibeam bathymetry and topographic lidar), developing and simulating a model (potentially using automated methods [using Python scripts]), and finally publishing all data and results to a USGS repository (via data release on Science Base). The individual may also participate and present and cooperator or other meetings.

MENTORING PLAN

Mentoring will be provide by the project leader and will include a one-hour discussion once per month for the duration of the internship.

ADDITIONAL DETAILS

STUDENT SKILLS AND INTERESTS

Coding, data collection experience using GPS (or GNSS), hydraulics coursework, GIS experience or coursework, ecology/biology experience or coursework.

LOCATION: Boise, Idaho

ACTIVITY LEVEL:

Level 8-2: The work requires some physical exertion such as long periods of standing, walking over rough, uneven, or rocky surfaces; recurring bending, crouching, stooping, stretching, reaching, or similar activities; or recurring lifting of moderately heavy items. The work may require specific, but common, physical characteristics and abilities such as above-average agility and dexterity.

FIELD WORK	25-50%	VIRTUAL?	Maybe
LAB WORK	None		
OFFICE WORK	75-100%		
OTHER	0-25%		

PROJECTED START DATE	5/15/2021
EXPECTED DURATION	90 days