

Development of 3-D modeling tools to document fish passage information and prioritize improvements at lower Columbia River Dams, 2012.

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Lamprey Synthesis Project

- Compile and synthesize information to support design and prioritization of future lamprey modifications:
 - **Objective 1:** (Keefer et al.): Review available data on swimming performance and passage metrics
 - **Objective 2:** Catalog fishway structures and past improvements by developing a novel 3-D (architectural) modeling tool



Literature and Data Review

Technical Report 2012-8-DRAFT

ADULT PACIFIC LAMPREY PASSAGE: DATA SYNTHESIS AND FISHWAY IMPROVEMENT PRIORITIZATION TOOLS

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Prepared for:
U.S. Army Corps of Engineers
Walla Walla District

DRAFT

Objective 2 Goals

- Communication tool:
 - Visualize fishways
 - Summarize existing data
 - Track modifications and improvements



Objective 2 Goals

- Communication tool to
 - Visualize fishways
 - Summarize existing data
 - Track modifications and improvements
 - Improve efficiency of deliberations
- “Fishway Wiki”
- Representational models NOT engineering design specs
- Easily modified and maintained



Software Selection

- Compared capabilities of multiple platforms

	Cost	Customization	Sharing
Solidworks	High	Hard	Easy
GIS	Low	Hard	Hard
Hypercosm	Low	Hard	Hard
Sketchup	Free	Easy	Easy

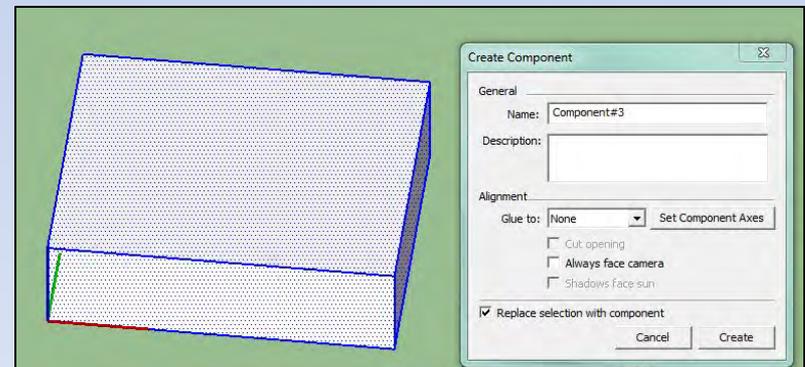
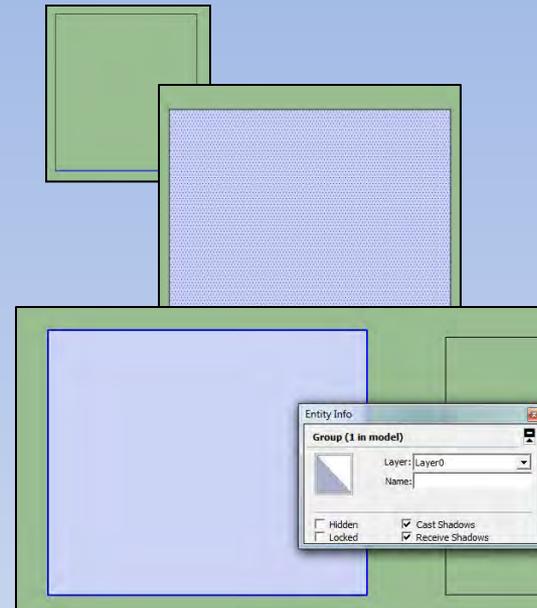
Sketchup Basics

- Groups

- Shapes, faces, and surfaces

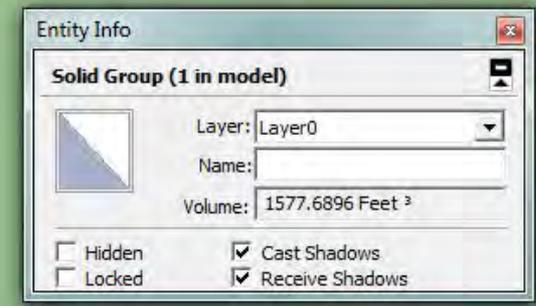
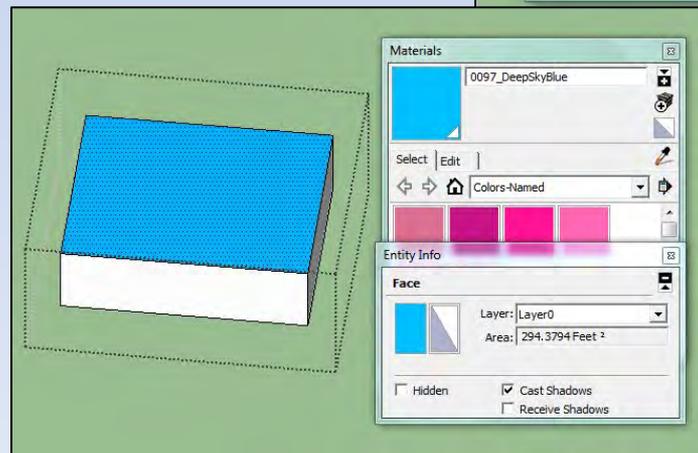
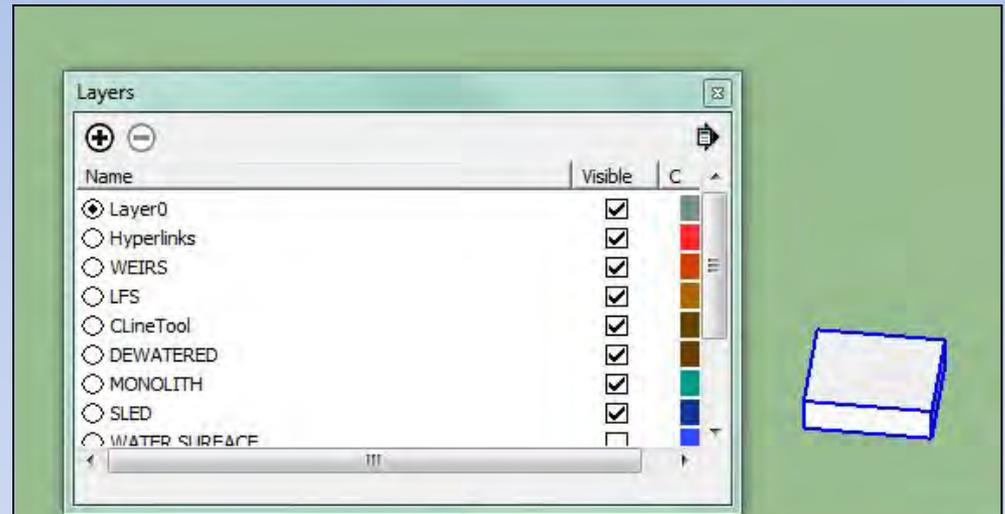
- Components

- Groups with names and specific descriptions

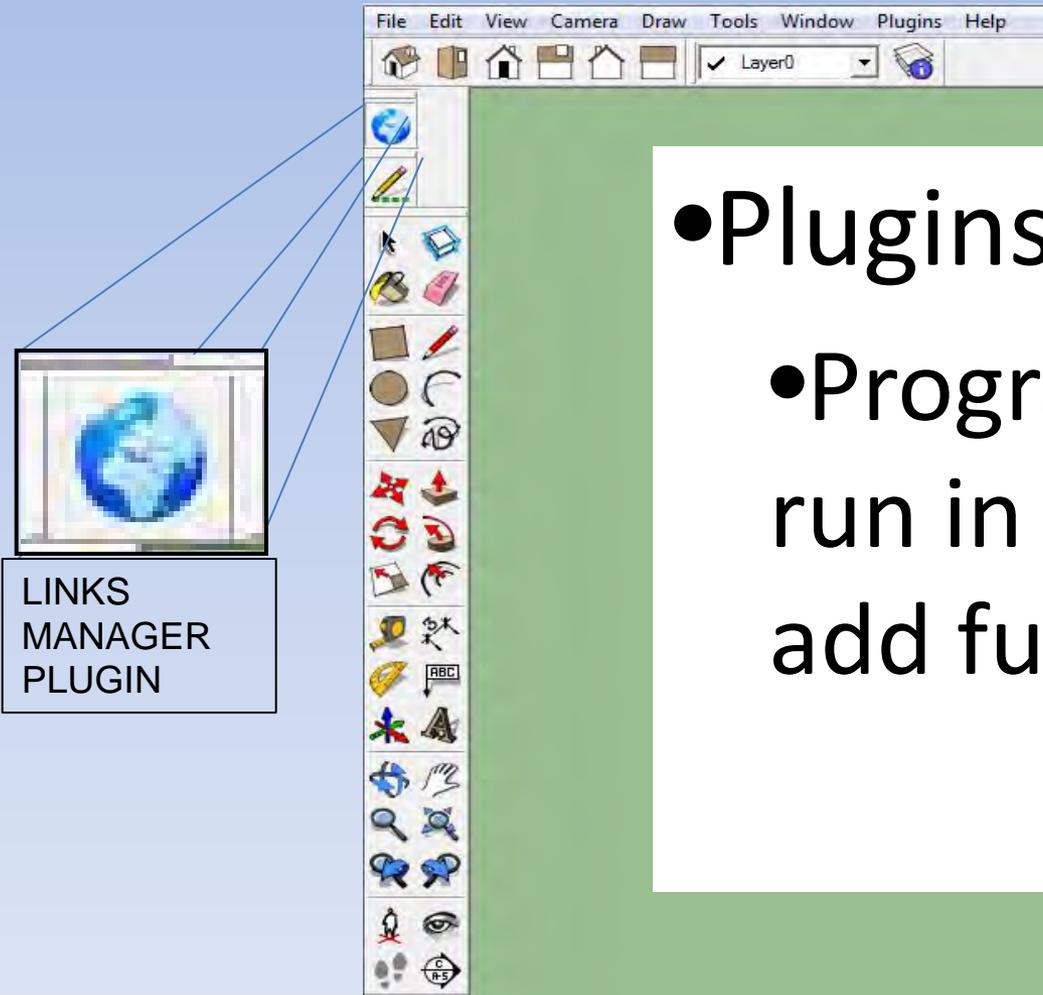


Sketchup Basics Continued...

- Layers- Similar to GIS layers.
- Can easily organize and view different types of data



Sketchup Basics Continued...



- Plugins
 - Programs that run in Sketchup to add functionality

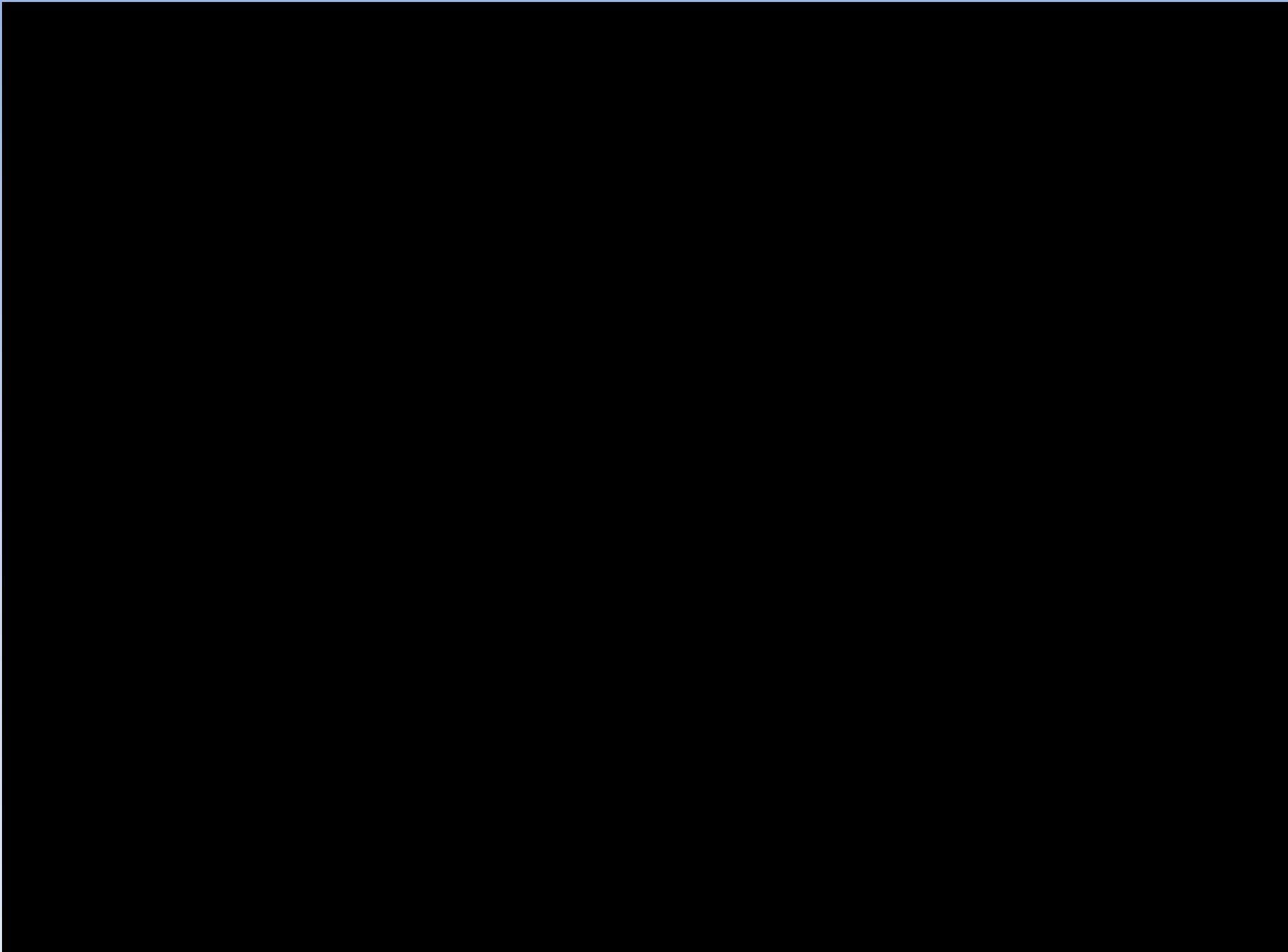
Test Case: BON Washington Shore Fishway



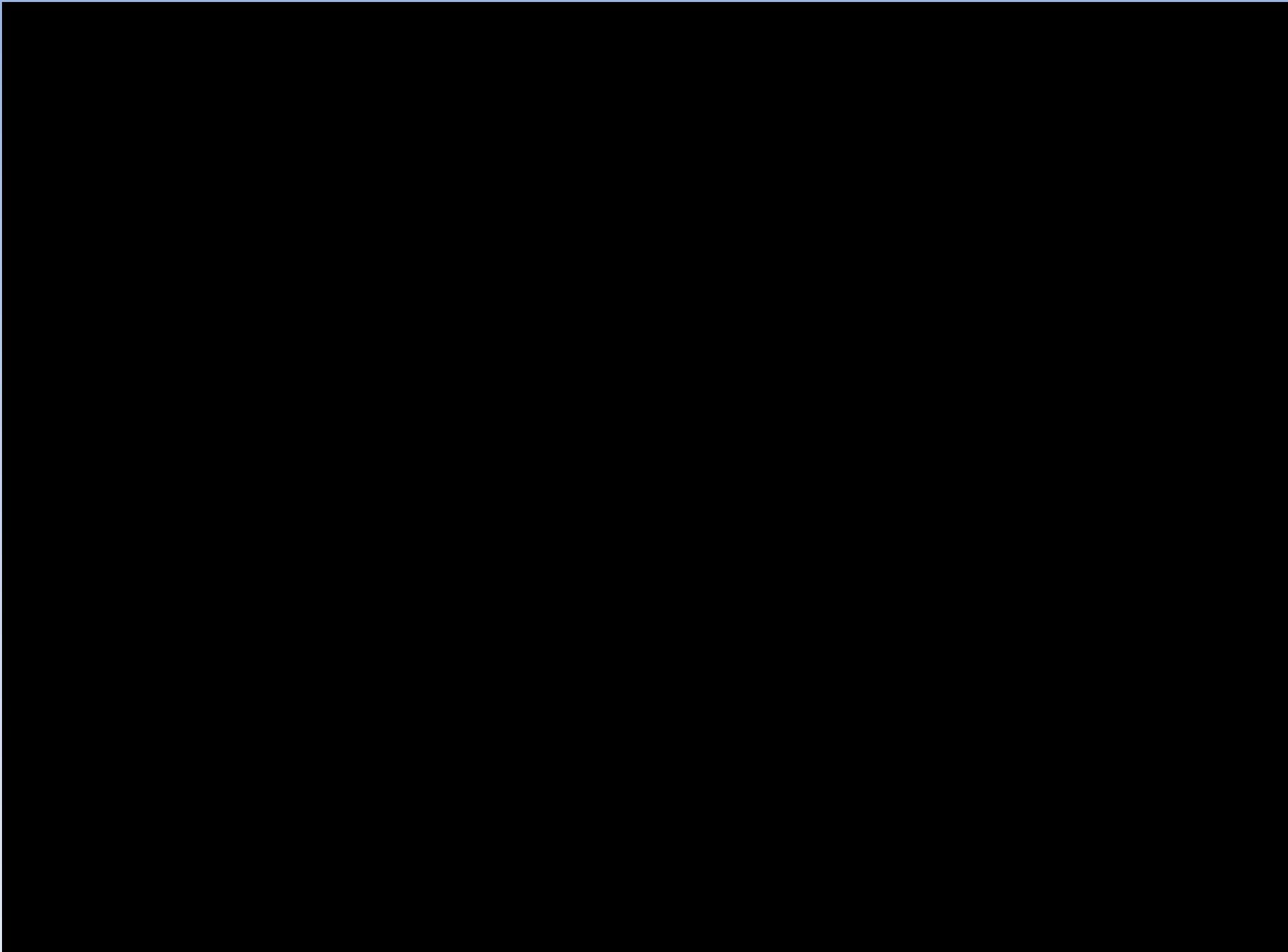
Test Case: BON Washington Shore Fishway



Building the model

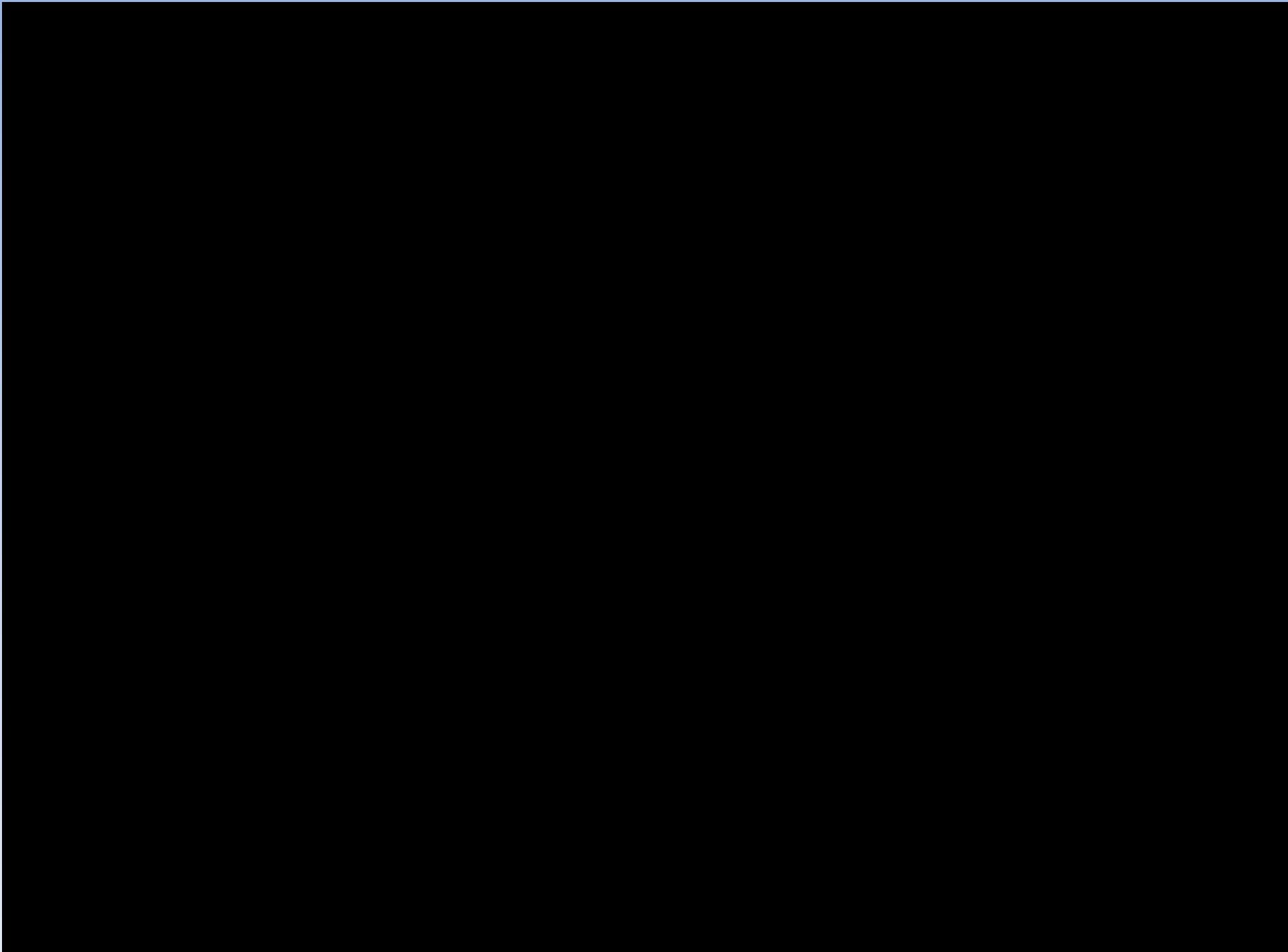


Base Fishway Model



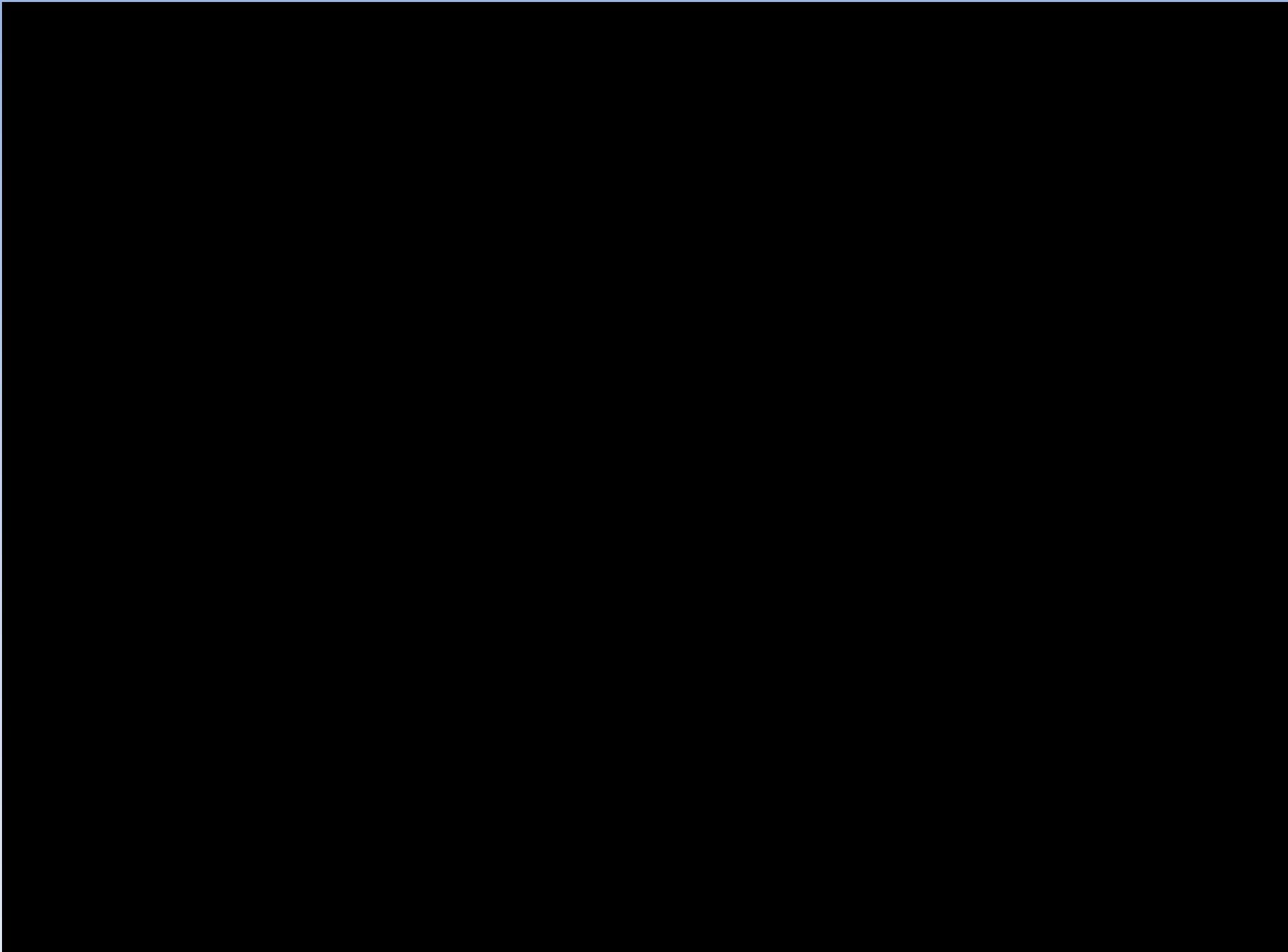
Fishway Wiki

- Populate model with additional layers



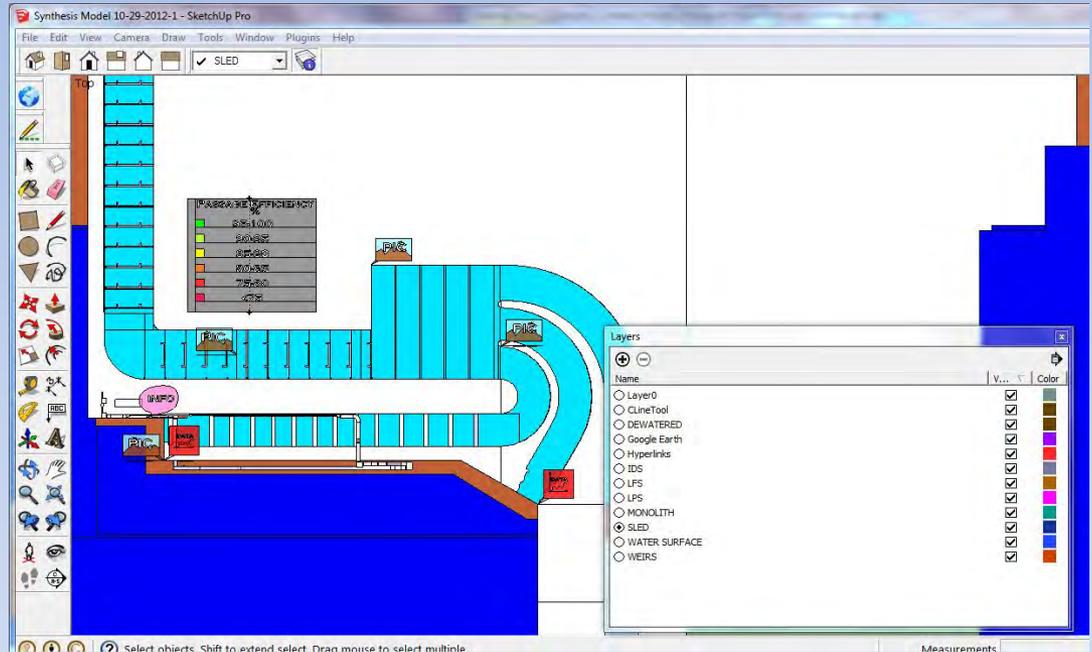
Lamprey Synthesis

- Lamprey specific applications



Model Workshop

- Model approximately 75% complete
 - Final Draft- March 31st
 - Delivered- May 31st



Questions?

