

Brice Prairie Conservation Association Dredging (BPCA) Project and Proposals Read Ahead

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Agenda

- Current Budget Year BPCA Project Summary
- Courses of Action
 - COA 1: Current COA to fund raise and try to execute project in fall of 2025
 - COA 2: Emplace Material in Rosebud Island Containment Area
 - COA 3: Emplace Material to Begin to Restore Barrier Islands
- Proposed Future Projects within POM Cycle (Overview)
- Future Project Descriptions
- Conclusion

Current Budget Year Project Summary





- The Brice Prairie Conservation Association is sponsoring a project that:
 - Creates a nearshore fish overwintering area to augment Lake Onalaska's diminishing overwintering fish habitat
 - Restores a nearshore summer and winter fishery, easily accessible from shore and nearby Mosey boat landing
 - Creates an alongshore boat channel:
 - with water deep enough for watercraft to navigate
 - free of summertime surface vegetation mats, providing oxygenated water and edge habitat to support fish and other aquatic life
 - Increases navigation and improves eco-system
- Creates an affordably maintainable nearshore sediment trap, capturing longshore-drift sediment which will reduce shallowing of Lake Onalaska offshore areas and prolong overwintering habitat project life
- Have fundraised \$130k (52% of estimate); local business to execute project **AT COST** (\$250k) to execute project within the budget year (FY24 and FY25)
- Project is shovel ready; acquired DNR, Corps of Engineer and Fish and Wildlife Refuge permits
- Total dredged material estimated to be nearly 20k cubic yards; details in backup slides
- Continuing to apply for matching grant opportunities
- Looking at alternatives to reduce overall cost:
 - Course of Action 1: Current COA to continue to fund raise and execute project fall of 2025
 - Course of Action 2: Place dredged material in the Rosebud Containment Area (created for Highway 53 project in 1980's)
 - Course of Action 3: Place dredged material to begin to restore barrier islands

Course of Action 1: Continue to fund raise and attempt to execute project fall of 2025



- Dredging project will run from Red Pines to Schafer's parallel to North Shore Drive and then link with existing channel to Dresbach
- Dredging commences after fall harvest; year depends on when funds raised
- Expect to dredge approximately 18,500 cubic yards of material to de-water at Metallics site and then transport to final site
- Hydraulic dredging is the method
- Will need to dig out sediment trap by mechanical means every few years
- Sediment samples taken and analyzed by Braun Intertec at request of Metallics; result no issues to crop land

COA 2: Rosebud Island






-  Existing Channel (deweeded route)
-  BPCA Current Dredging Project
-  Transit from Schafer's to existing channel
-  COA 2: Emplace Material on Rosebud Island

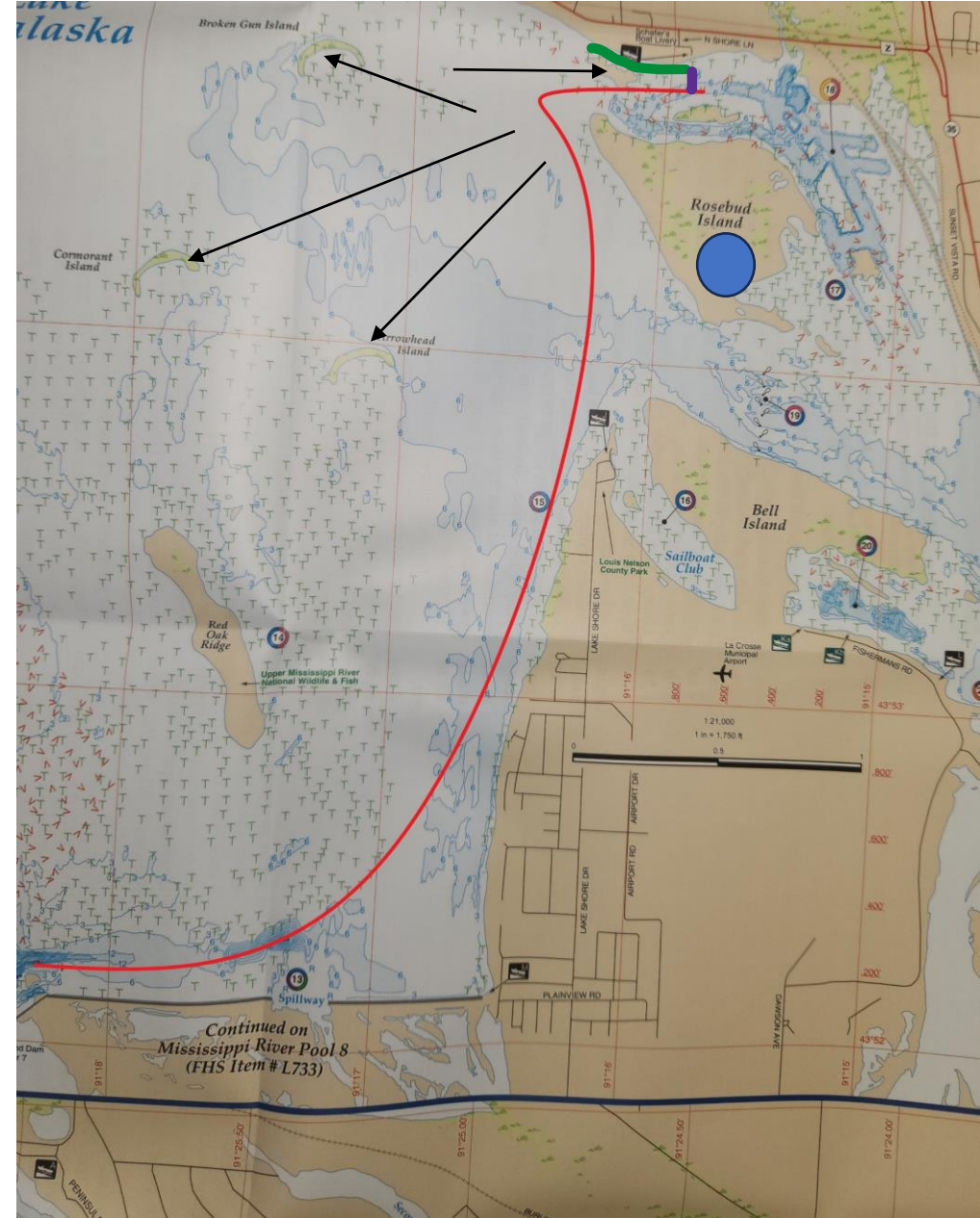


COA 2: Emplace Material on Rosebud Island

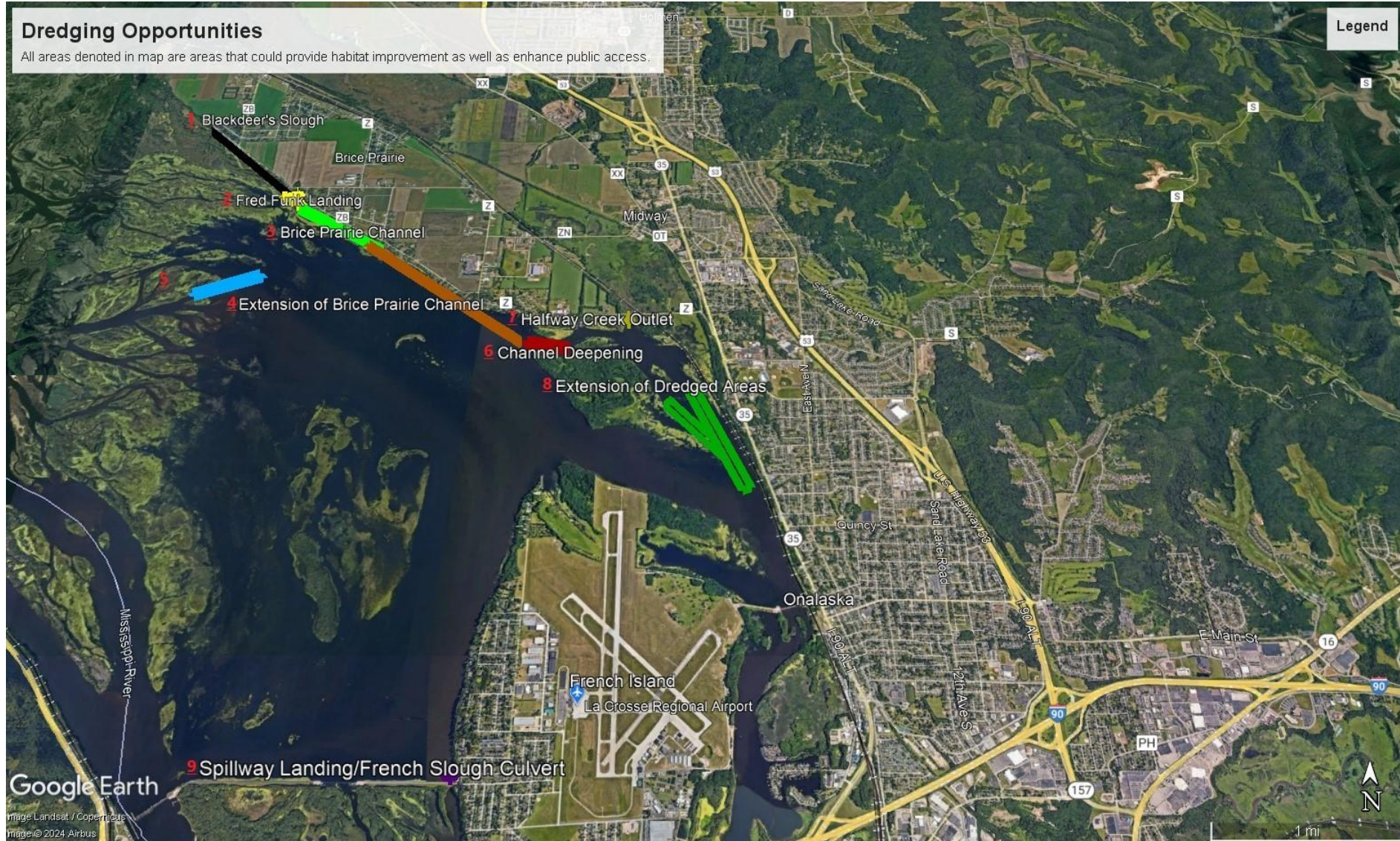


COA 3: Barrier Islands

-  Existing Channel (deweeded route)
-  BPCA Current Dredging Project
-  Transit from Schafer's to existing channel
-  COA 2: Emplace Material on Rosebud Island
-  COA 3: Emplace Material to Restore Barrier Islands



Proposed Future Projects within POM Cycle (Overview)



Descriptions of Proposed Future Projects

- **1) Blackdeer's Slough:** Historically an overwintering spot, it has been filling in slowly. Believe it was dredged previously in the 1960's. Material could be used to reinforce existing barrier islands that are eroding due to flood and ice damage. Estimate 15,000-20,000 cubic yard project.
- **2) Fred Funk Landing:** A fishing area was created when the landing was redone several years ago. This area has already silted in, making the handicap accessible fishing pier virtually unusable. The entire area upstream of the boat launch has silted in considerably and dredging the entire area would provide better shore fishing opportunities as well as excellent overwintering habitat. It would also improve access to and from the boat landing. A sediment trap where the flow enters the channel would also help mitigate sedimentation in the future. Estimate 15,000-20,000 cubic yard project.
- **3) Brice Prairie Channel:** Sedimentation is filling in this channel, causing increasing amounts of vegetation which is also impacting accessibility. Estimate 35,000 cubic yard project.
- **4) Extension of Brice Prairie Channel:** Creating a channel along the north shore with an adjacent island would be beneficial in several ways. It would create a permanent travel route for boats to use that would keep traffic concentrated on the populated side of the lake. The barrier island would also create a physical barrier between boat traffic and wildlife, specifically migrating waterfowl. Estimate 160,000 cubic yard project.

Descriptions of Proposed Future Projects (continued)

- **5) Sommers Travel Corridor:** Currently the only route deep enough to support boat traffic on and off the lake that is free of hazards is on the very southern end of the lake. This presents a safety issue as all boat traffic must traverse in front of the Dresbach Dam. There have been multiple incidents of boats getting sucked into the dam including fatalities. If a route was designed that ran through Sommers Chute, it would provide the public a much safer path to get out onto the main channel and avoid the dam area completely. Estimate 70,000 cubic yard project
- **6) Channel Deepening by Rosebud:** The very western end of the HREP project completed in 1990 is beginning to get significant amounts of sedimentation. Dredging this area back to the original depth will restore the area to the depths intended in the original project. Estimate 30,000 cubic yard project.
- **7) Halfway Creek Outlet:** The creek has created a sandbar where it comes out under CTY HWY Z. Removing that would provide for better flow into the lake as intended. Estimate 4,000-8,000 cubic yard project.
- **8) Extension of Dredged Areas:** The Southeast portion of the 1990 HREP project stopped before it met up with deeper water closer to the spillway. Extending those dredge channels would provide deep water connectivity between these two areas, and create more overwintering habitat. Estimate 80,000-100,000 Cubic Yards.
- **9) Spillway Landing/French Slough Culvert:** The culvert is an ongoing issue with debris clogging the intake. Deepening the area in front of the culvert will help with this issue. It will also provide better access to the landing adjacent to the culvert. The outlet side of the culvert is easily accessible from the landing and would be a good candidate for a sediment trap. Estimate 3,000-5,000 cubic yard project.

Conclusion

- Current BPCA Project is shovel ready
 - Have raised over 50% of estimated cost
 - Would like to reduce cost by implementing COA 2 and place material in Rosebud containment area to complete current project within budget year (FY24/25)
 - Integrate future projects to restore barrier islands
- Look to partner with USACE, DNR and Fish and Wildlife in order to:
 - Increase navigation within the lake and to the Mississippi River
 - Restore multiple overwintering fish habitat sites to improve eco-system

Back-up Slides

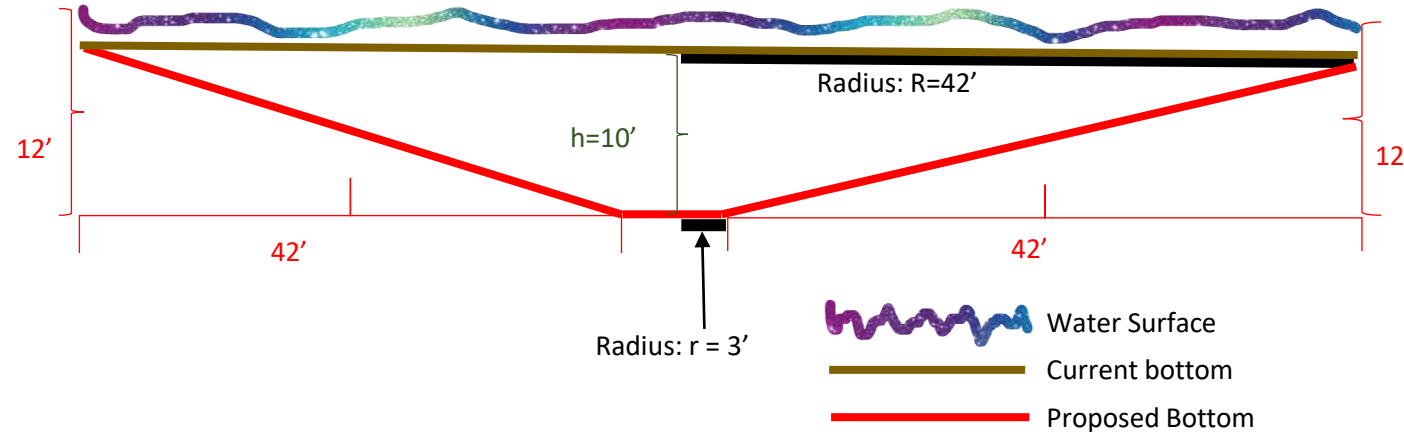
A Bit of History



Courtesy of Anita Lemke circa summer 1985; a Red Sails canoe race; note the width of the channel

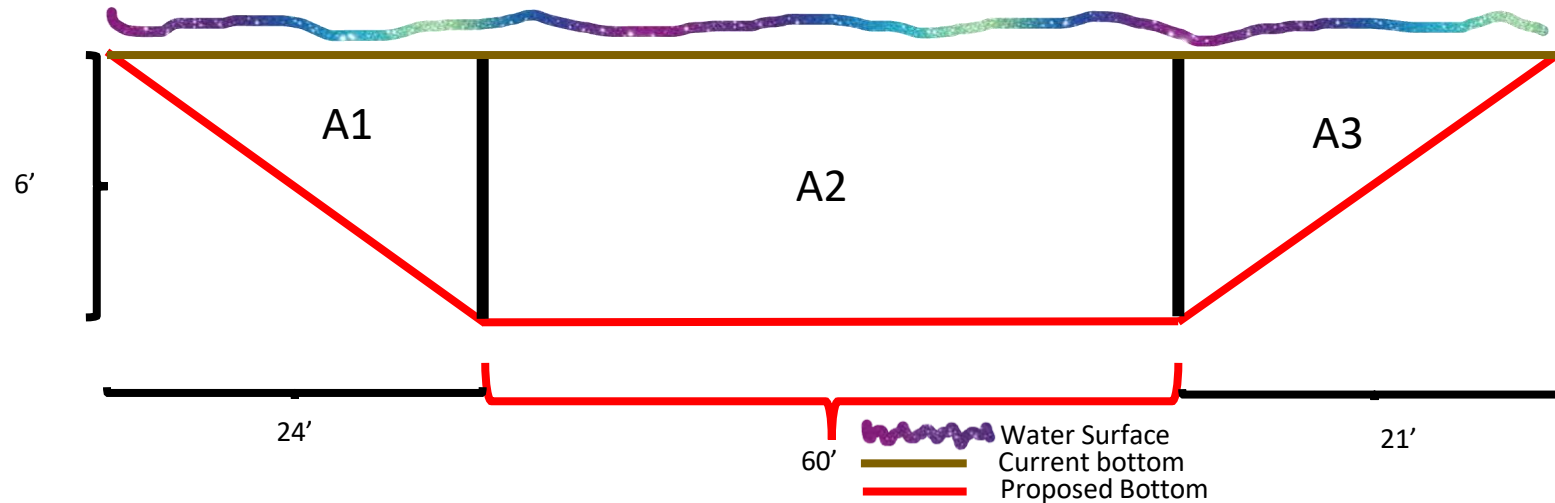
- Lake Onalaska created as part of USACE lock and dam system
- Mid 1960's, permit secured from the Wisconsin Public Service Commission
- Project occurred in approximately the same area to create a recreational boat access channel for nearby residents
- The dredged material was placed on the nearby island just south of the dredged area
- The steel sheet piles were placed at the west end of the island to contain the dredged material
- Last dredging project was 1989

Sediment Trap (Current BPCA Project)



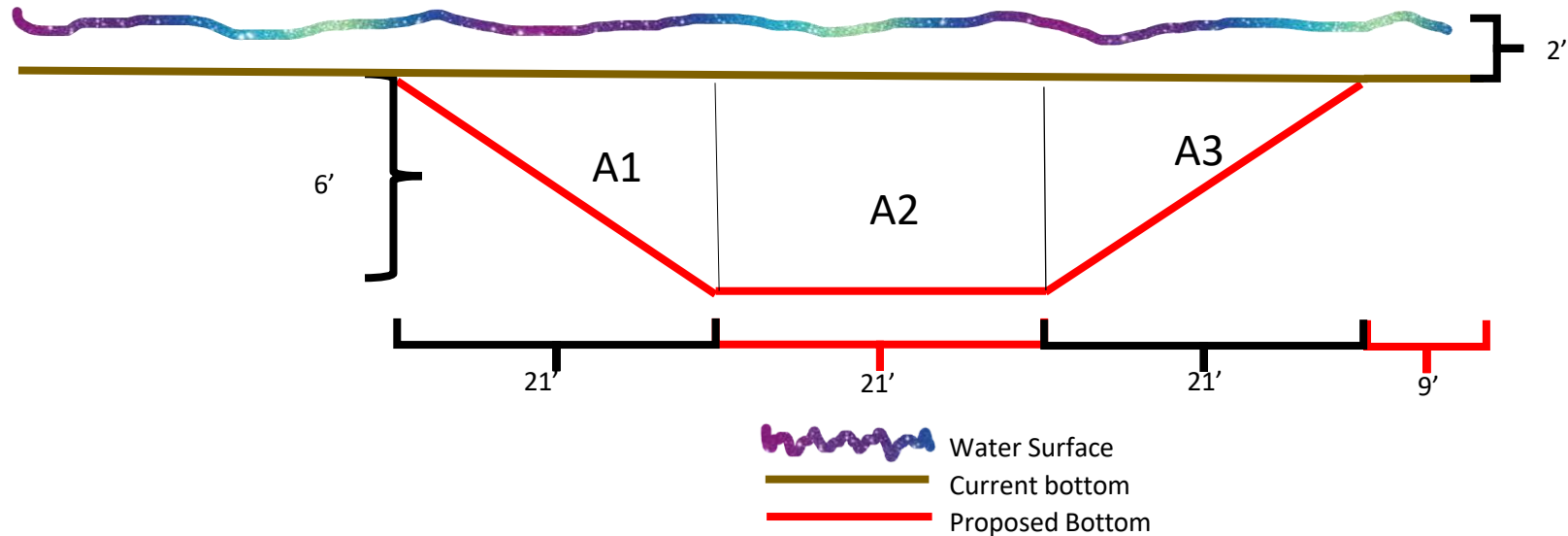
Cross Section of Sediment Trap. Approximate representation of a cross section of the current and proposed dredging for a sediment trap (red circle in figure 1). Current water depth is 2' and proposed dredge depth is 12' in the center sloping to current depth (2') with a top radius of 42'. Volume of material to be dredged in a truncated cone with a radius of 3' at the bottom and 42' at the surface. $(1/3) * \pi * h * (r^2 + r * R + R^2) = 19,866 \text{ ft}^3 = 736.5 \text{ yd}^3$. Slope of the cone sides will be approximately 1:4.15.

Overwintering Fish Habitat (Current BPCA Project)



Cross Section of Fish Habitat. Approximate representation of a cross section of the existing and proposed dredging for fish habitat (yellow polygon in figure 1). Current water depth is approximately 6in-2ft and proposed dredge depth is 8ft. Approximate length of the area dredged will be 300ft and average width will be 105ft. Volume of Area 1 (A1)= $\frac{1}{2} \times 24' \times 6' \times 300' = 21,600\text{ft}^2 = 800\text{yd}^3$. Volume of Area 2 (A2)= $60' \times 6' \times 300' = 108,000\text{ft}^2 = 4,000\text{yd}^3$. Volume of Area 3 (A3)= $\frac{1}{2} \times 6' \times 21' \times 300' = 18,900\text{ft}^2 = 700\text{yd}^3$. Total estimated volume of material to be dredged from the fish habitat site = $5,500\text{yd}^3$.

Recreational Channel (Current BPCA Project)



Cross Section of Recreational Navigation Channel. Approximate representation of a cross section of the existing and proposed dredging for a recreational navigation channel (purple area in figure 1). The sides will have a slope of 1:3.5. Volume of Area 1 (A1) and volume of Area 3 (A3) are equivalent and = $\frac{1}{2} \times 6' \times 21' \times 1,050' = 66,150 \text{ft}^3 = 2,450 \text{yd}^3$. Volume of Area 2 (A2) = $6' \times 21' \times 1050' = 132,300 \text{ft}^3 = 4,900 \text{yd}^3$. Total estimated volume of material to be dredged is $9,800 \text{yd}^3$. Assuming an existing depth of 0.5ft and a height of dredged material to be 7.5ft, this amount would increase to $12,250 \text{yd}^3$