

St. Clair River Flow and Sediment Measurements

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St. Clair River



Why Measure Sediment?

- Calibrate and validate sediment transport models
- Provide u/s boundary condition for sed transport models
- Quantify a controversial component of the sediment budget

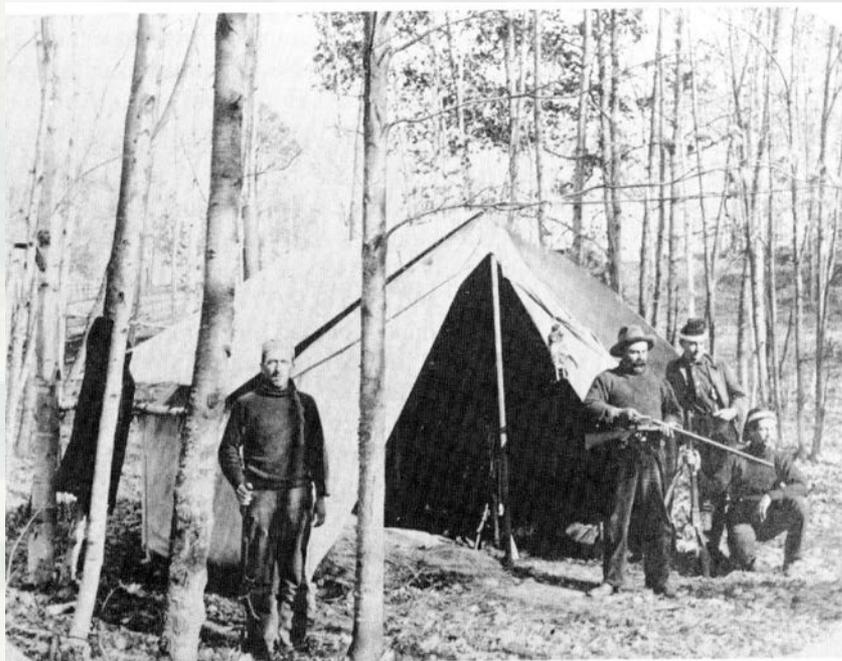


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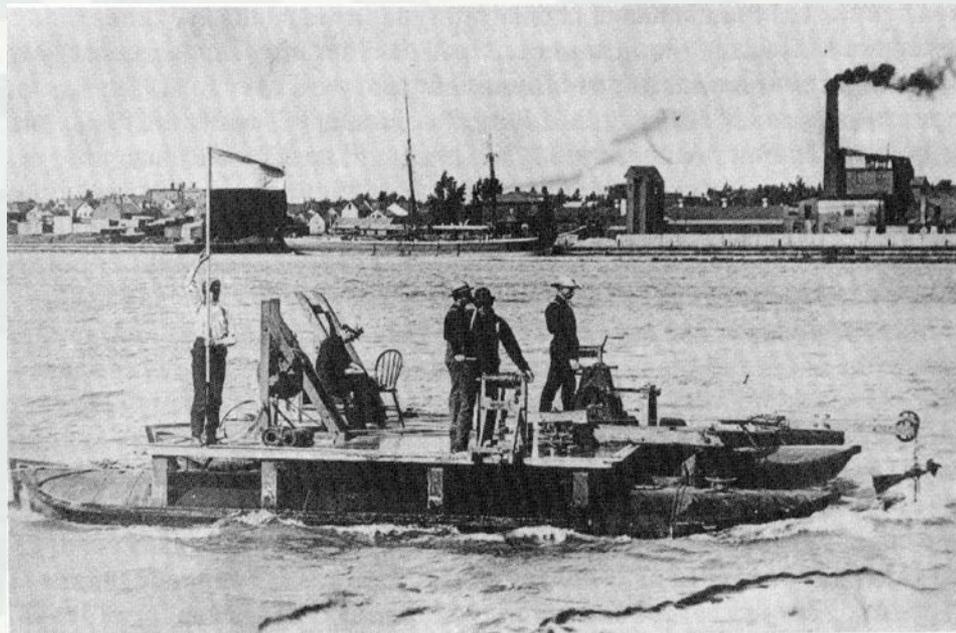
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Image NOAA

History of Discharge Measurements in the Great Lakes Connecting Channels



12. View of a U.S. Lake Survey field party camp, ca. 1900. Courtesy of the Detroit District, Corps of Engineers.



28. U.S. Lake Survey CATAMARAN NO. 2 taking water flow measurements on the Niagara River, 1906. Courtesy of the Detroit District, Corps of Engineers.



Current Flow Measurements

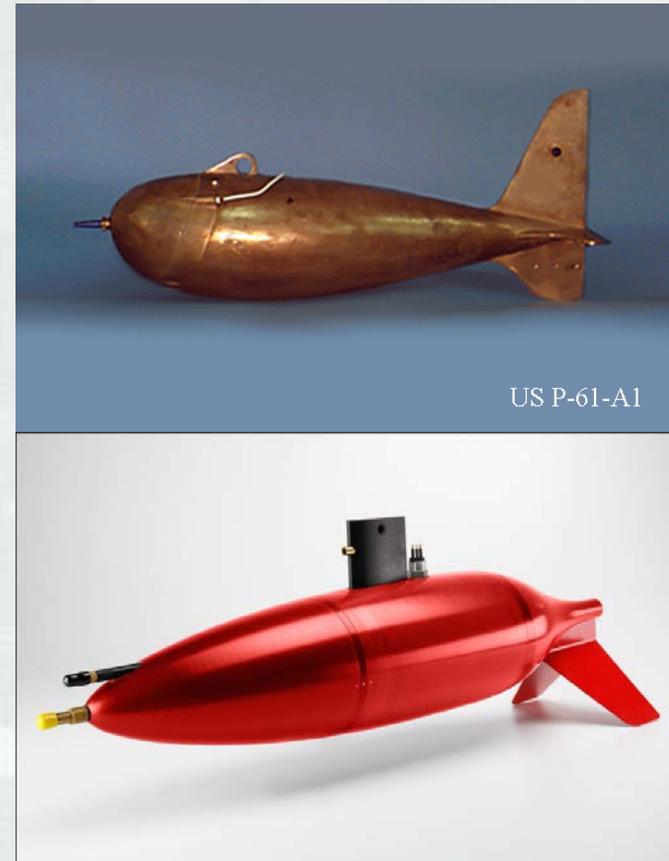
- IJC mandate
- Verify regression equations
- Develop flow rating curves at gages



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Sample Types

- Point Samples
 - ▶ For 2D and 3D models
- 3 to 5 samples for each vertical
- Augmented with estimates based on WQ meter- turbidity



Sample Analysis

- Sample suspended sediment concentration to determine mass flux
- Determine size fractions
- Use echo intensity from fixed location ADCP to continuously determine sediment flux



Comparison of P-61 and P-6

- Perform side-by-side comparison



Not the P-6



Schedule

- Initial Data Collection - Week of 6 August
- Sample whenever our hydroacoustics team is on the river (3 or 4 times per year)



Responses to Climate Change Program Assessment, Review, and Planning For Reservoir Sedimentation Information (RSI)

Goal: Identify necessary actions for reservoir sustainability by identifying strategies and updating reservoir sedimentation information to account for global and climate change.

ACTIVITY/PRODUCT	PLANNED START	PLANNED FINISH
3. Global Changes and Sedimentation (Remus)	FY11	FY16
3.1. Sedimentation Strategy	FY11	FY12
3.2. Nationwide Assessment	FY12	FY12
3.3. Update Sedimentation Methods and Policy	FY12	FY13
3.4. Update Sedimentation Priority 1	FY12	FY13
3.5. Integrate Global Changes with Regional Sediment Management	FY12	FY13
3.6. Update Sedimentation Priority 2	FY12	FY14
3.7. Update Sedimentation Priority 3	FY13	FY15
3.8. Update Sedimentation Priority 4	FY14	FY16



POCs: John Remus, Paul Boyd (NWO), David Raff (IWR)



Initial Activities (Begun FY 2012)

- Six Pilot Districts
- Identify, Review, and Analyze Existing RSI
- Coordinate with RESSED Database and CorpsMaps
- Develop and Prioritize RSI Update Strategy



3/10/2010

Questions?

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