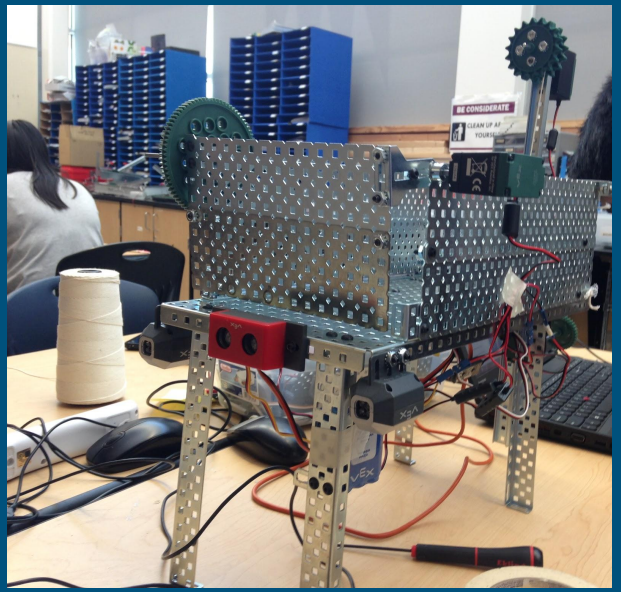
Sedibot



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POE period 6
5-23-17

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Our Problem

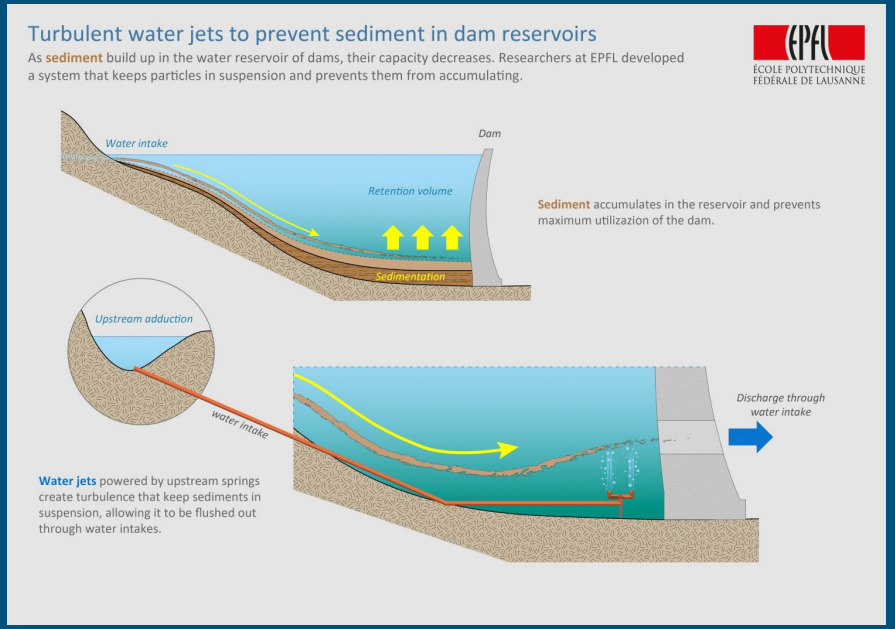
Our clients: Energy and water companies

- Lifespan of reservoirs is limited by buildup of sediment
- Continuous sediment flow limits volume capacity
- Reservoirs become unusable
- More reservoirs must be built to replace old ones, creating environmental impact

From: http://cbf.typepad.com/.a/6a00d8341bfb5353ef017ee4d1a58f970d-320wi

Previous Solutions

- There have not been many ideas like this
- Previous options have been to either:
  - Completely drain the reservoir and bulldoze the sediment out
    - Waste of water and time
  - Use water jets to keep sediment suspended then discharge while water flows



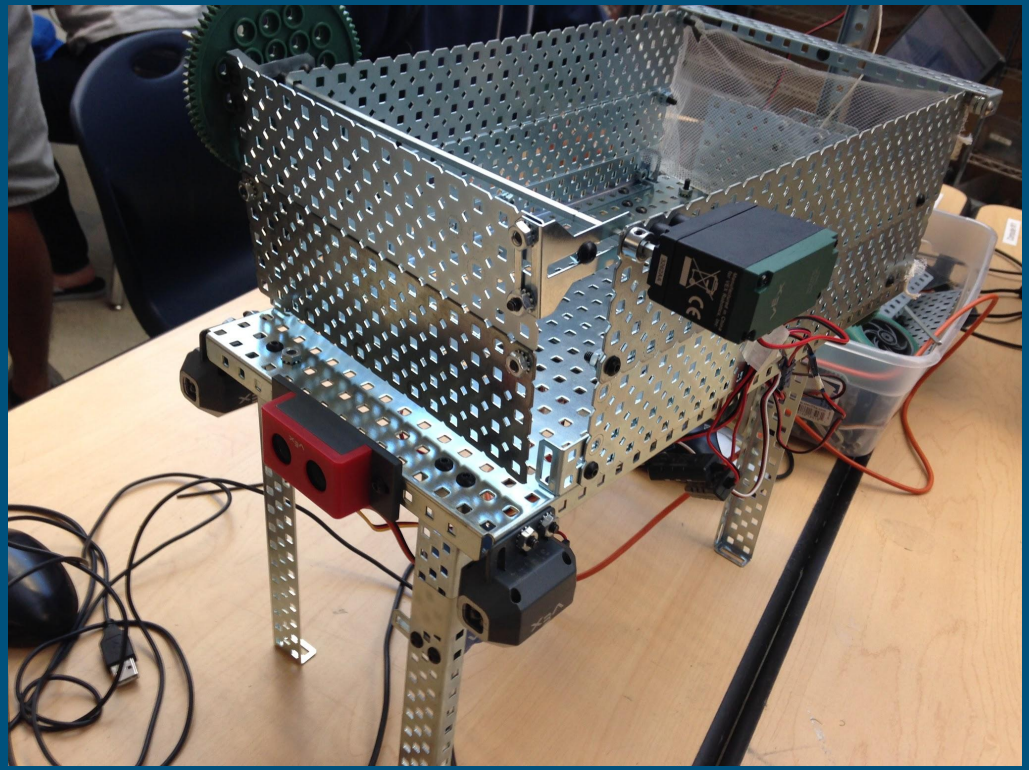
From: https://3c1703fe8d.site.internapcdn.net/newman/gfx/news/hires/2016/usingturbule.png

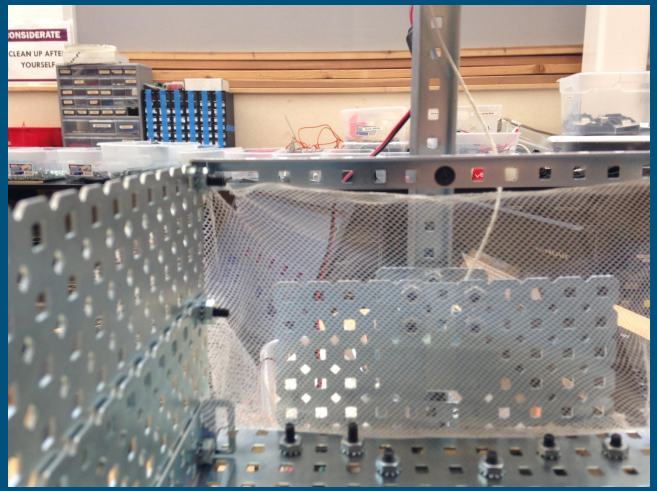
Solution: Sedibot

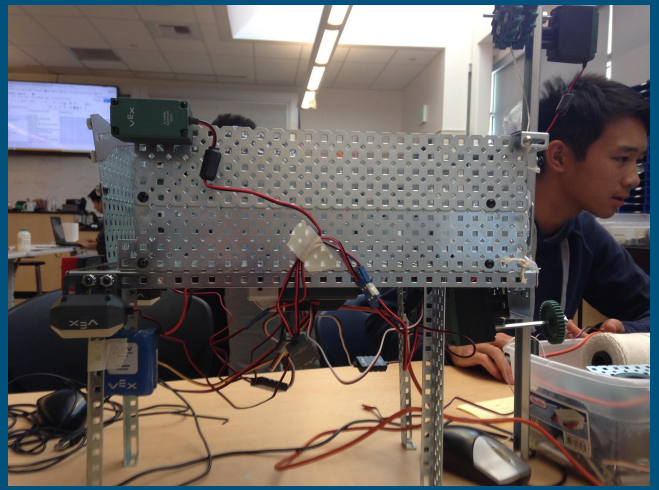
Quickly put, the Sedibot is an automatic robot that patrols a reservoir to lower its sediment concentration.

- The robot will follow custom routine premade by the client
- Ultrasonic sensors will detect particles in the reservoir
- A mesh net will keep fish and other marine wildlife out
- Back net will allow water to pass through but trap sediment
- Back gate lowers to keep sediment in place
- Sediment can then be removed from the robot

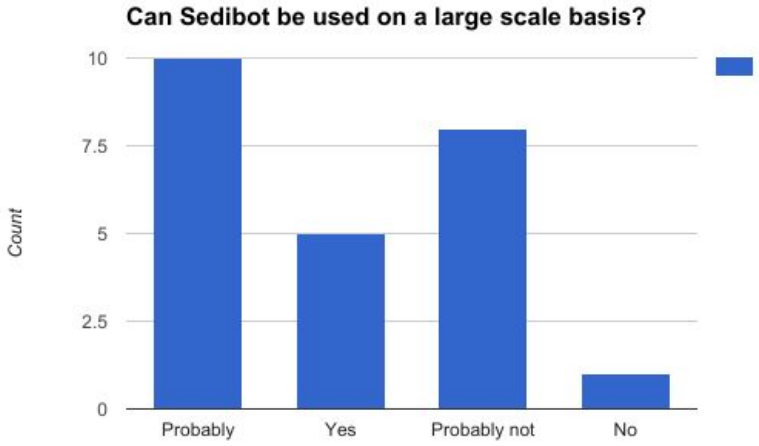
Solution: Sedibot (Images)

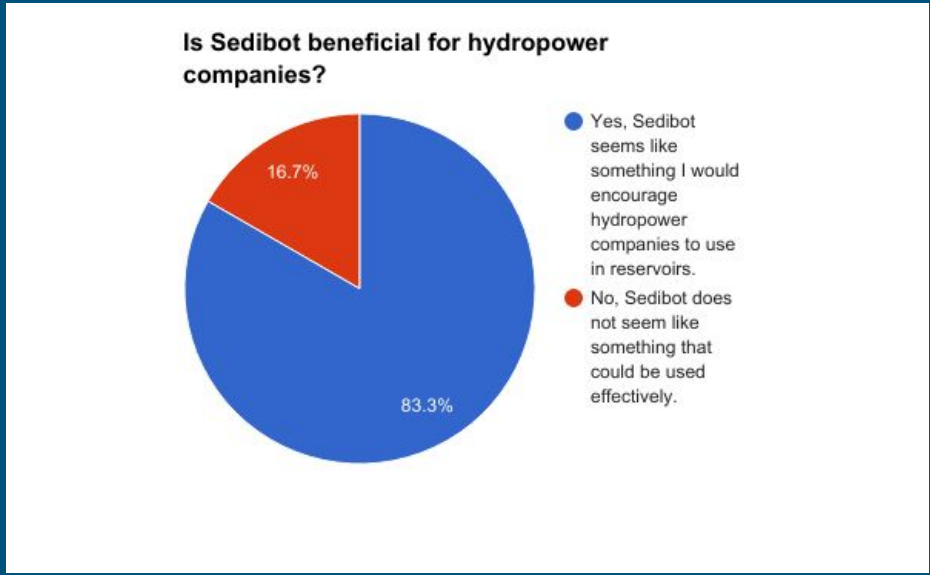






Product Analysis/Survey Results





Cost Estimates

Materials: Steel, nylon, electrical components

- Cost of steel billets/lb: $0.14/lb
- Cost of Blue Hawk nylon rope: $0.22/ft

Tkane from https://4.imimg.com/data4/RY/RF/MY-13456823/steel-billet-250x250.jpg

Taken from http://www.homedepot.com/catalog/productImages/400_compressed/c0/c0cec653-8a0d-4736-a188-908657b539d3_400_compressed.jpg

Taken from: https://www.quandl.com/collections/markets/industrial-metals
https://www.lowes.com/pl/Rope-by-the-foot-Chains-ropes-tie-downs-Hardware/4294753233

Improvements

- More rounded shape to reduce drag
- Shield electrical components with a waterproof hull
- Enable remote control of robot
- Compact the back gate to fit in a smaller area
- Overall strengthen frame and hull to withstand pressure
- Increase power of motors to provide more speed

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