Aquatic soft sediment sampling methods: Freeze Coring and Grab/hand coring

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Introduction

Freeze Coring

- Methodology
- Deployment
- Retrieval
- Analysis

Grab/Hand coring

Other

- vibracoring/piston coring

Freeze Coring

Methodology

Dry ice/alcohol slurry freezes sediment onto metal plate

Freeze Coring

Deployment

Uses a tripod-winch assembly with rods for fixed time

Freeze Coring

Retrieval

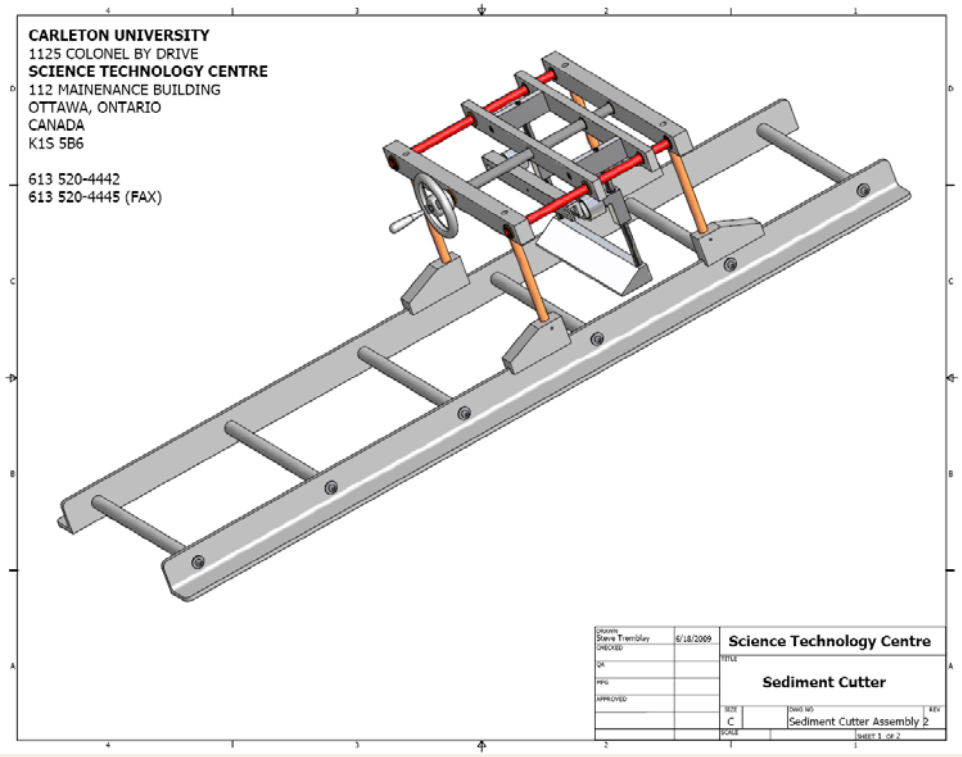
Release the core and cut into sections

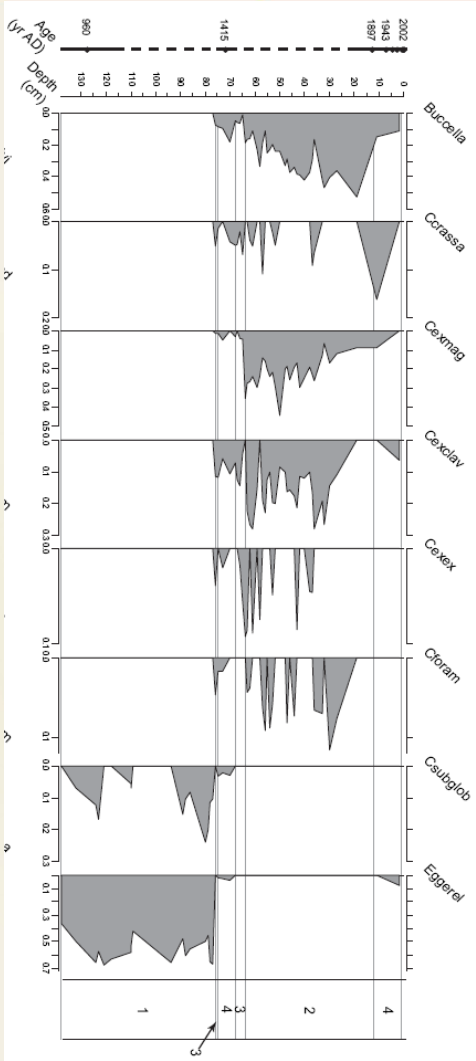
Freeze Coring

Analysis

Depends on needs

Microtome at millimetre scale





Freeze Coring

Strengths

- High resolution
- Low disturbance
- Complete core
- Shape immaterial
- Sed/H_2O interface
- Multiple platforms

Weaknesses

- Logistically difficult
- Needs freezers
- <2-3 m
- Hard sediment
- Safety
- Requires winch

Grab/Hand Coring

Deployment

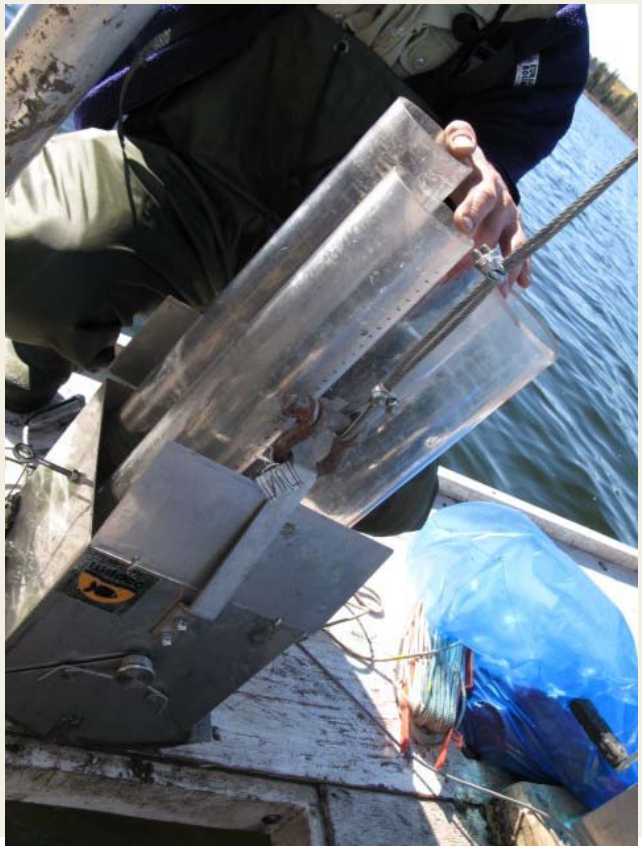
Uses either line, tripod or rods

Works in either hard or soft substrates

Grab/Hand Coring

Deployment/retrieval/analysis

Uses either line, tripod or rods



Remote Platform

Catarafts

1600 lbs lift from 96 lbs weight
Easily modified to suit many different coring uses
Collapsible frame and air inflated tubes - small