Planning and Implementing a Habitat Project

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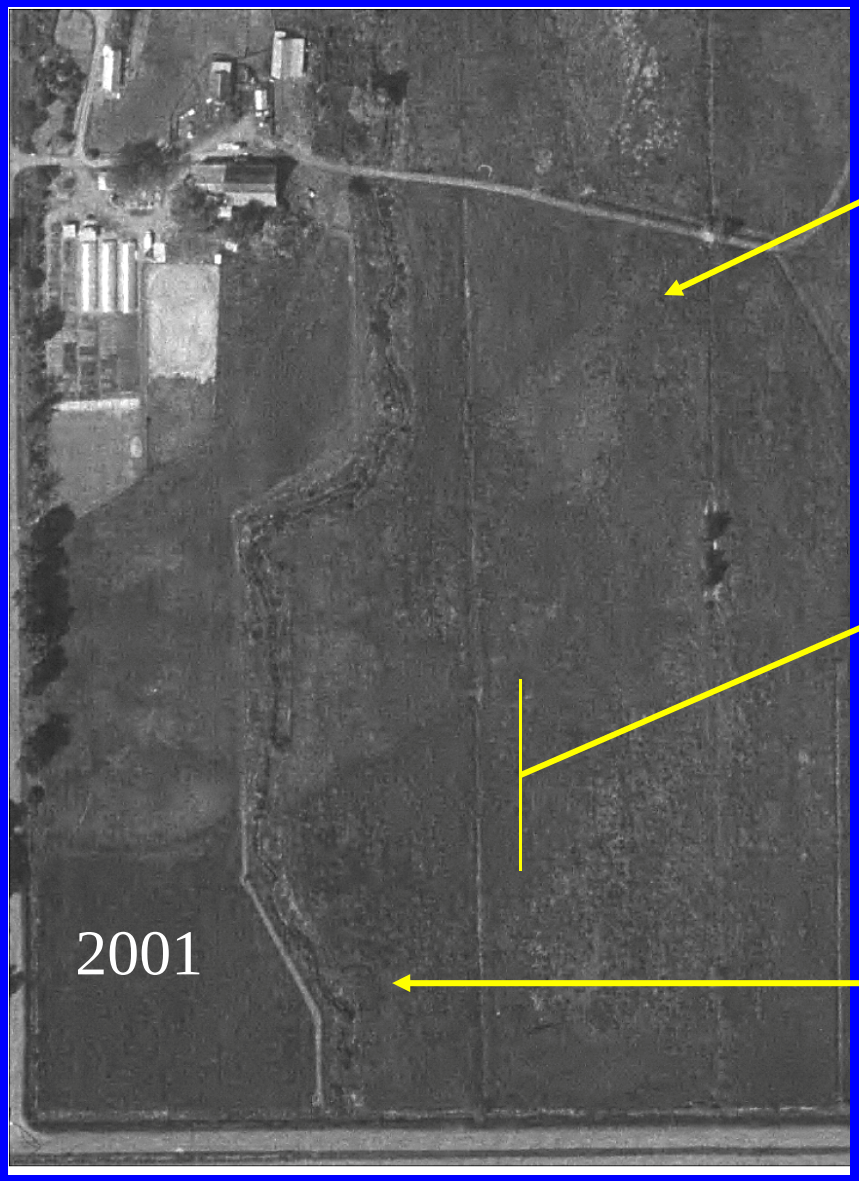
Gordon's Brook, Langley,

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Understanding the System

Watershed Scale:

Species present seasonally
Existing habitat values and issues
Major landforms
Land use patterns
Spatial arrangements of habitats

Site Scale:

Species present seasonally
Hydrograph and water quality
Existing habitat values
Soils
Detailed topographic survey
Connections to other habitats

Site Selection

Seven Design Principles

1. Take a Broad View

Focusing on one or two species will likely result in an inferior project – *even for those species*

- Over 50 SAR depend on use riparian, stream and wetland habitats in the Fraser Valley

Brian Klinkenberg

Seven Design Principles

2. Incorporate Existing Features

Seven Design Principles

3. Harness Natural Processes

Succession – plant predominantly early successional 'pioneer' species.

Erosion/Sedimentation – place obstructions directly in the path of flow power to create complex, self-sustaining habitat features

Seven Design Principles

4. Mimic Natural Landforms

Avoid The Trench-Bench-Berm Approach

Seven Design Principles

4. Mimic Natural Landforms

- Vary bank slopes and channelwidths to mimic natural patterns

- Leave riparian area soils ‘rough and loose’
- Most habitat value is in the fine details scale of metres to tens of metres

Seven Design Principles

5. Cluster Features At Several Scales

Seven Design Principles

6. Create at Disturbance

Seven Design Principles

7. Embrace the Random

Most habitat is formed by random (stochastic) events. Building random events into construction improves projects

- *Conceptual Plans* and field fits by skilled practitioners produce the best projects
- Relinquish control of details when possible

Permits and Notifications

1. First Nations

- This is all unceded Sto:lo / Coast Salish Territory.
- There are many archeological and culturally important sites, some mapped, many not.
- Fish habitat is linked to the right to fish.

- Consult with First Nations Bands and Organizations with an interest in the site.
- People of the River Referrals Office (PRRO) coordinates referrals for many bands using a web portal.

Permits and Notifications

2. Province of BC

- Scientific Fish Collection Permit (for Fish Salvages)

- Water Sustainability Act
  - Approval or Notification required for '*changes to the nature of a stream*' or '*activities or construction within a stream…*)

3. Fisheries and Oceans Canada

- Fish Collection Permit (for Fish Salvages)

- Fisheries Act (?)
  - Submit a notification you should get a *letter of advice* back.
  - It doesn't mean much.
  - Hopefully this will change

- Species at Risk Act Permit (may involve Environment Canada)
  - Required for fish salvages and/or habitat changes involving Critical Habitat of SARA listed species

4. Local Government

- Requirements vary, depending on bylaws
- Almost all regulate soil removal and deposition on properties

- Keep them informed. They are the most likely recipients of concerned phone calls.

5. BC One Call

- 1-800-474-6886

- You would be surprised at where some utilities are buried…

Site Logistics

What goes where when and how long can it stay there?

Typical Order of Operations

1. Strip sod and topsoil, stockpile separately

2. Rough excavation

Order of Operations

3. Detailed excavation / landscaping

4. Large woody debris installation

Order of Operations

5. Riffle construction

6. Streambed substrate placement

Order of Operations

7. Topsoil spreading

8. Seeding and planting

Choosing Equipment

200 Track Excavator with Thumb

- Very powerful
- Limited reach (10m)
- Large bucket

Choosing Equipment

200 Long Reach Excavator

- Up to 20 m reach
- Smaller bucket
- No thumb

Small Track Excavator (80-100)

For tight spots

Limited reach and bucket size

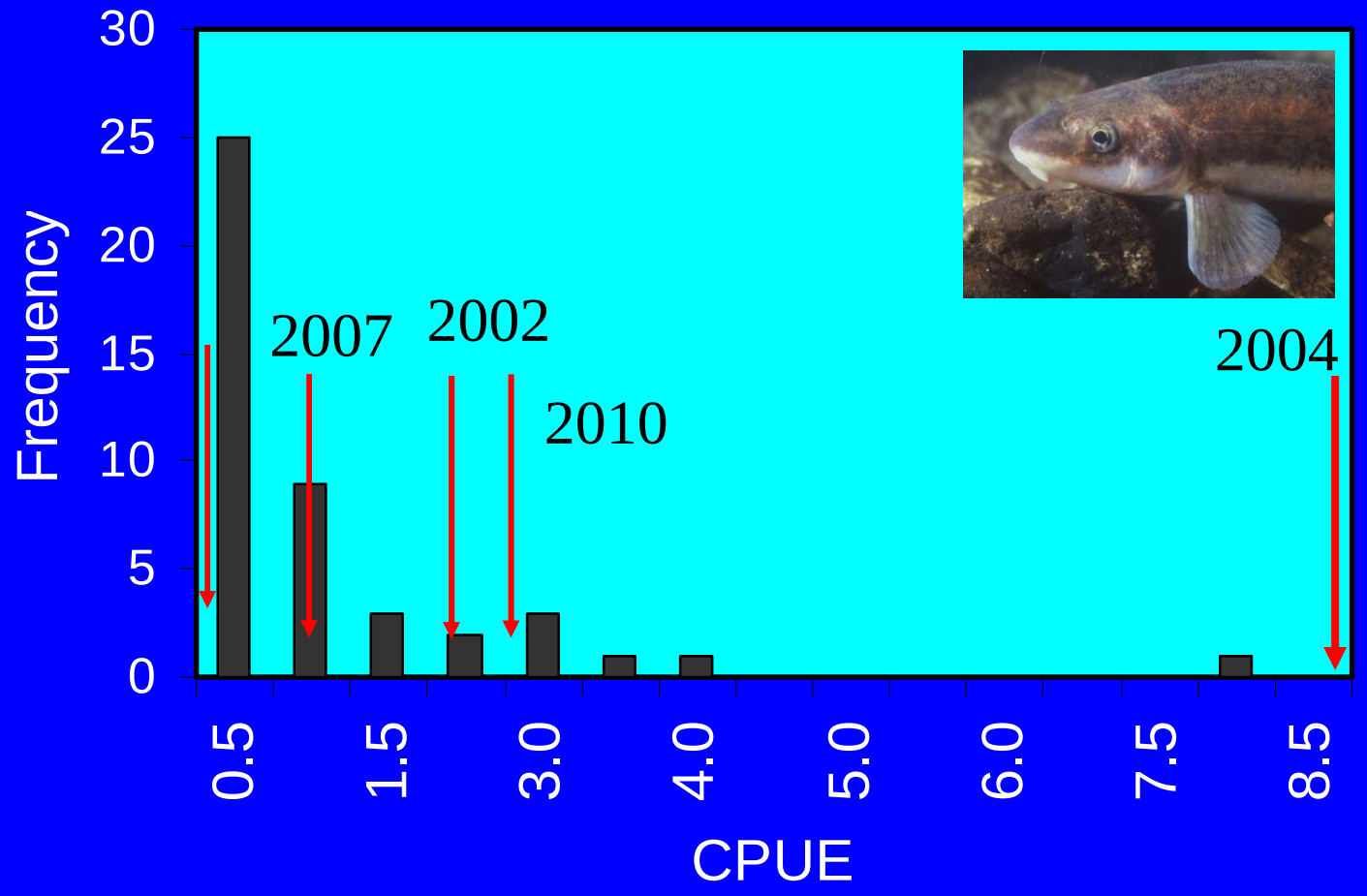
80 Yard End Dump Trucks

- Transport long logs and large stumps efficiently

Gordon’s Brook, Langley

Gordon's Brook, Langley

Salish Sucker Density

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Thank-You!

Marvin Wheeler