Introduction to Proponent-Led Habitat Banking

A Case Study of Channel Re-Naturalization

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Presented by: Brent Valere, Fisheries and Oceans Canada

Canada

Purpose

- What is Proponent Led Habitat Banking?
  - *Fisheries Act* Context
  - Habitat Banking basics
  - Win-Win, Ecology and Economics
  - Proponent Led Habitat Banking Process
- Case Study
  - City of Kitchener Proponent Led Habitat Banking Arrangement
  - Filsinger Park Re-Naturalization Conservation project
  - Habitat Banking Arrangement
- Looking forward

Fisheries Act Context - Offsetting

- *Fisheries Act* Section 35(1); No Serious Harm to fisheries in Canada…
- *Fisheries Act* Section 35(2)(b); Unless Authorized under conditions

- Offsets are a necessary condition:
  - as outlined in Section 6 of the *Fisheries Act*;
  - enforceable conditions of *Fisheries Act* authorizations;

  Therefore proponents are responsible for designing, constructing and maintaining appropriate offsetting measures for the unavoidable residual impacts to fish and fish habitat that results from their projects

- Choosing appropriate offset measures are guided by the principles of offsetting:
  - Support fisheries management objectives
  - Benefits from offsetting measures should balance project impacts
  - Offsetting measures should provide additional benefits to the fishery
  - Offsetting measures should generate self-sustaining benefits over the long-term

- Offsetting measures typically are applied by proponents in two ways:
  - through project-specific measures in response to a particular impact from a particular project
  - through proponent-led habitat banks, where multiple impacts from a single project or from multiple projects are addressed by banked offset credits

Proponent-led Habitat Banking Basics

- Proponent-led habitat banks are areas where fish habitat has been created, restored or enhanced in advance and then used to generate credits to offset impacts from a proponent's future projects.

- Habitat banking offsets are performance based and achieve measurable conservation outcomes based on measureable ecological indicators and clear performance targets. Credits are accrued as targets are met.

- Proponent-led habitat banks are useful where a proponent is likely to cause several impacts:
  - construction and long-term maintenance of linear transportation (i.e. provincial highway, railways) and energy projects (i.e. pipelines)
  - construction and long-term maintenance of commercial shipping terminals (i.e. Small Craft Harbours, Ports);
  - non-renewable resource extraction (i.e. oil sand mining);
  - electricity generation stations (i.e. hydro dams, nuclear facility);
  - municipal/agricultural drainage infrastructure (i.e. drains and dams);
  - transportation infrastructure (i.e. bridges and culverts)
  - Municipal storm water plans (i.e. strategic replacement of antiquated concrete storm water channels)

Balance of Ecology and Economics Through Habitat Banking

Ecology

- Offset established before Authorized Harm minimizes uncertainty
- Strategic identification of Conservation Project (limiting habitat type, location and size)
- Construction of Conservation Projects by habitat creation experts
- Large patch of habitat vs multiple small ineffective projects
- Standardized monitoring
- Performance based targets
- Conservation project maintained and protected

Habitat Bank "Win-Win"

Economics

- Cost-effective / economies of scale
  - –One large conservation project vs. multiple small ones
  - –Ownership of heavy equipment, single mobilization
  - –Access to materials
- Streamlined Authorization process (offset component completed)
- Predicable/transparent
- Conservation Projects serve Public Interest
- Established currency based on habitat type used to credit and debit habitat ledger

Proponent-led Habitat Banking Process

Proponent submits a proposal for a proponent-led habitat bank

Upon approval, DFO establishes Proponent-Led Habitat Bank Arrangement

- Service area
- Roles and responsibilities
- Performance based targets
- Monitoring
- Contingencies
- Habitat credit ledger

+ Annexes: One for each conservation project (i.e. offset)

Offset proposal	Offset proposal	Offset proposal
DFO Approval	DFO Approval	DFO Approval
Offset construction	Offset construction	Offset construction
Maintenance, monitoring and reporting on offset	Maintenance, monitoring and reporting on offset	Maintenance, monitoring and reporting on offset

DFO/Proponent Offset Credit Ledger based on meeting performance targets

Fisheries Act Authorizations or SARA Permit

CASE STUDY

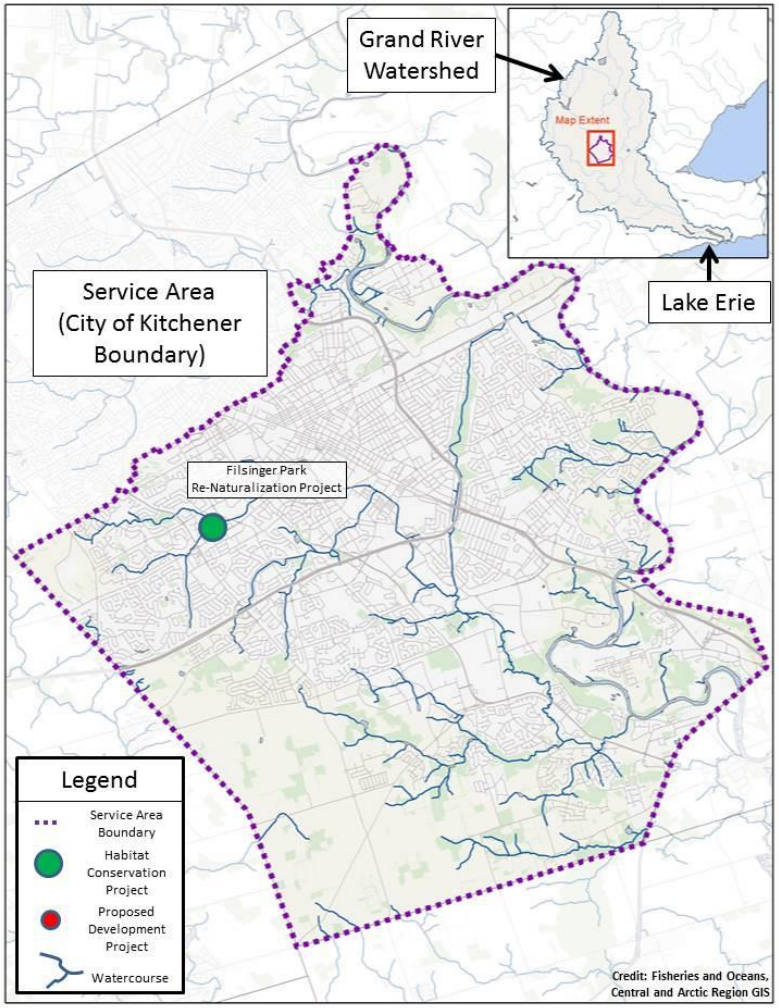
City of Kitchener-Led Habitat Banking Arrangement
Filsinger Park Re-Naturalization Conservation Project

Canada

Filsinger Park Re-Naturalization Conservation Project

- Habitat Bank Arrangement sets out:
  - Location, design and ownership of conservation projects
  - Service area for eligible conservation and development projects
  - Production based physical, chemical and biological targets to be met before credits are awarded
  - Standard monitoring procedures, duration and frequency to document successes and discover failures
  - Roles and responsibilities of proponent and DFO

City of Kitchener Habitat Bank Service Area



- Service Area boundaries chosen based on ecological connection and proponent jurisdiction.
- One service area can have multiple conservation projects and development projects within its boundaries.
- Only conservation projects and development projects constructed within this ‘service area’ are considered for credits or debits to the Habitat Bank.

Filsinger Park Re-Naturalization Conservation Project

- **Physical and ecological performance targets:**
  - Channel form and function (i.e. plan form, pools, riffles, runs, substrates, meander pattern, connection to floodplain and riparian plantings) remain stable and true to the original design by 2018.
  - Water chemistry is equal to or better than upstream reaches by 2017.
  - Benthic community indices equal or exceed upstream reaches with natural substrates by 2017.
  - Number of fish species found in spring, summer and fall are equal to or more than adjacent upstream and downstream known inhabitants (including white sucker blacknose dace, long nose dace, pumpkinseed, bluntnose minnow, fathead minnow, and creek chub) by 2017.
  - A minimum of 80 % of Riparian floodplain plantings survive through 2018.

Filsinger Park Re-Naturalization Conservation Project

- **Fish habitat credits will be accrued in accordance with the following schedule:**
  - 15% of fish habitat credits will become available upon successful construction of the channel (reach 1, 2 and 3) in accordance with the stamped engineering drawings.
  - 10% of fish habitat credits will become available when water chemistry targets have been met.
  - 10% of fish habitat credits will become available when riparian flood plain plantings show 80% survival year over year for a minimum of two years.
  - 50% of fish habitat credits will become available when benthic macroinvertebrate and fish targets are sustained for a minimum of two years.
  - 15% of fish habitat credits will become available in 2018 when channel form (i.e. plan form, pools, riffles, runs, substrates, meander pattern, connection to floodplain and riparian plantings) is stable and all biological and water chemistry targets have been met or exceeded.

Filsinger Park Re-Naturalization Conservation Project

- Concrete channel prior to re-naturalization.
- Fish habitat value considered to be negligible due to laminar low flows, point source inputs, flashy turbulent high flows, lack of any in channel habitat or diversity, linear planform, disconnection from flood plain and lack of riparian buffer.

Filsinger Park Re-Naturalization Conservation Project

- Storm water outflow taken offline with settling pool and vegetative buffer attenuating flows into re-naturalized channel.

Filsinger Park Re-Naturalization Conservation Project

- Instream woody structure and rock substrate

Filsinger Park Re-Naturalization Conservation Project

- Meanders with riffles, runs, pools and point bars.

Filsinger Park Re-Naturalization Conservation Project

- Reconnection to flood plain with new plantings and growing riparian buffer capacity.

Habitat Bank Credit Ledger

ANNEX C:

HABITAT CREDIT LEDGER

Transaction Date	PATH Identifier(e.g., PATH #; action log date)	Conservation Project or W/U/A Subject to Application for Authorization	Supporting Document(s)	Bank credit Type	Bank credit Deposit (m^2)	Bank credit Withdrawal (m^2)	Bank credit Balance (m^2)
7/10/2015	15-HCAA-00539	Filsinger Park re-naturalization Project (reach 1 and 2)	Proponent-led Habitat Bank Arrangement and attachments	Warm water baitfish, riverine	1,309		1,309

Looking Forward

- Proponent-led Habitat banking becomes the “norm” rather than the “exception”. Habitat Bank “Win – Win”!
- Prove the business case.
- Strategic planning, restoration of ecosystem services, expertly built large conservation projects, low uncertainty, cost effectiveness, streamlining wins over small conservation projects with high uncertainty, located and constructed based on low cost and convenience.
- Promote a system where the “habitat experts” build habitat…not just the lowest bidder.
- Strategic, cost effective, streamlined, publically supported re-naturalization of 100’s of kilometres of old concrete channels! Why not?

Thank You