



# Lower Mission Creek Habitat Conservation and Restoration Plan

Presentation to RDCO Regional Board

Oct 13, 2022

# Lower Mission Creek Habitat Conservation and Restoration Plan

Presentation to RDCO Regional Board – Oct 13, 2022

## Agenda



- Why Mission Creek
- MCRI Progress to date
- Plan Description
- Plan Recommendations
  - Key Messages
  - Next Steps



## Why Mission Creek – Overview of Values and Assets

- Ecosystem Values

- Fish and wildlife production

Kokanee



Screech Owl



- Water quantity and quality contributions



# Lower Mission Creek Habitat Conservation and Restoration Plan

## Presentation to RDCO Regional Board – Oct 13, 2022



### Overview of Mission Creek Values and Assets (con't)

- Syilx Okanagan Nation Values
  - Important food, cultural and spiritual contributions
  - Strong historical reliance on Mission Creek for harvesting of fish, wildlife and plants
- Recreational and Economic Contributions
  - Mission Creek Greenway



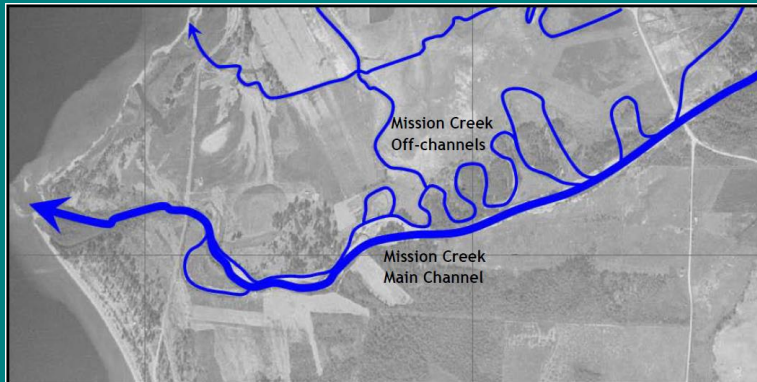
Okanagan Lake fishery



### Why Mission Creek - Land Development Impacts

- Includes channelization and diking for flood control in 1950s and water diversion

1938



2009



- Huge reductions in aquatic and riparian habitat, resulting in severe declines in fish and wildlife populations
- Increasing channel instability, flood risk, and water quantity and quality impacts
- This trend will continue and is projected to worsen in the future with climate change if no mitigative actions are taken

# Lower Mission Creek Habitat Conservation and Restoration Plan

## Presentation to RDCO Regional Board – Oct 13, 2022



### Why Mission Creek – High Potential for Restoration Success

- Past levels of fish and wildlife production and associated benefits highlight what is possible in the future
- Committed partners
- Opportunities to access key resources – funding and land
- Past success





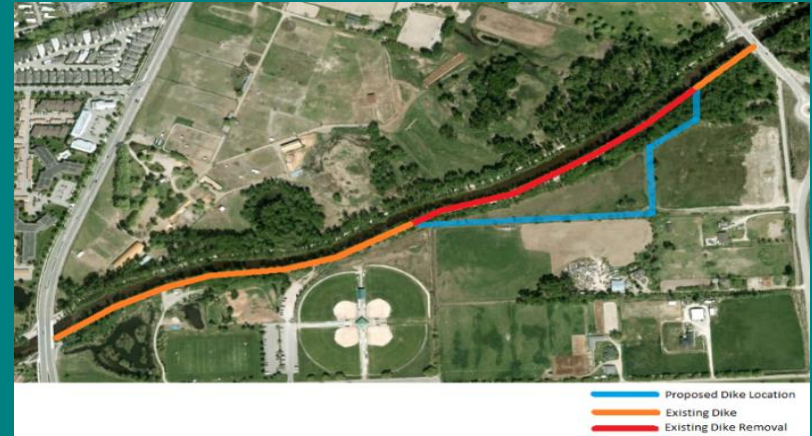
## Mission Creek Restoration Initiative

- Launched in 2003 in response to serious declines in kokanee and rainbow trout populations
- Objectives focused on restoring ecosystem values, improving flood protection, and building partnerships
- Committee based approach
  - All levels of government incl. Westbank First Nation, Okanagan Nation Alliance, and community representation
  - Provide oversight, input, technical expertise
  - RDCO key partner in MCRI since inception, providing Committee representation, project delivery and assistance with Plan development

### MCRI – Progress to Date

- Multiple studies and ongoing monitoring to better understand issues, current conditions, future potential, and restoration effectiveness
- Completed the Phase 1 dike setback restoration project between Gordon Dr and Casorso Rd. which included several components:

### Floodplain Expansion





### MCRI Progress to Date - Aquatic Habitat Restoration

Meander Notches



Boulder Clusters



Side Channel Re-connection



- Project delivery experience and outcomes provide a strong basis for future projects

# Lower Mission Creek Habitat Conservation and Restoration Plan

## Presentation to RDCO Regional Board – Oct 13, 2022



### MCRI Progress to Date - Plan Description

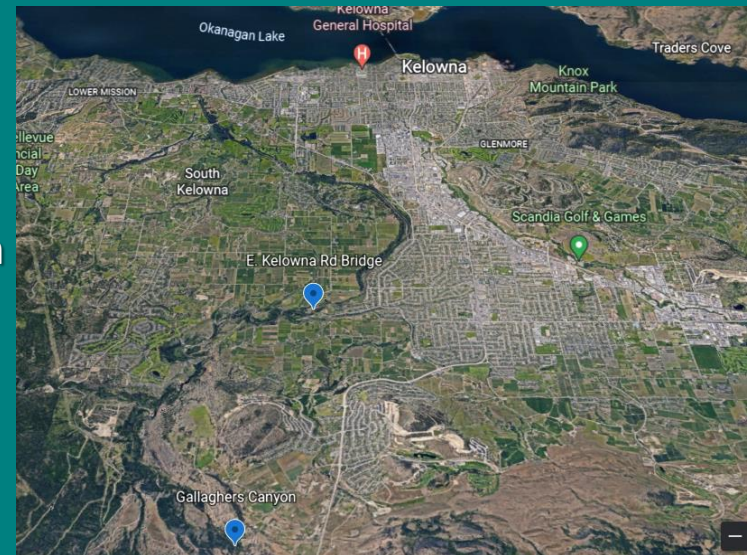
- 2 year development process
- Long-term, multi-phase strategy for lower Mission Creek aimed at:
  - Conserving and restoring fish and wildlife habitat to re-establish natural form and function and increase productivity of indigenous species
  - Improving flood protection
  - Building climate change resilience
- Living document
  - Will remain open to respond to new science, Traditional Ecological Knowledge, and changes in priorities, and opportunities
- Scope – Ok Lake to East Kelowna Rd. Bridge



#### LOWER MISSION CREEK HABITAT CONSERVATION & RESTORATION PLAN

Steve Matthews, B.Sc, RPBio

JULY 2022





### Plan Recommendations – Background Information

- Identifies area/site specific conservation strategies and restoration designs according to need, potential benefits, and opportunity
- Recommendations developed at a conceptual level based on technical feasibility for achieving flood-protection and ecosystem objectives
- Considerable investigative work and engineering will be required before determining if these recommendations can proceed to on-the-ground projects
  - Key considerations will include funding and land availability (if required), infrastructure issues, partnerships
- All Plan directed projects will prioritize improved flood protection (in close collaboration with CoK and MOF) in conjunction with habitat conservation and restoration



## Plan Recommendations

### Conservation Priorities

Conservation of existing high-quality aquatic and riparian habitat in all sections, where feasible, is a high priority and should be a key consideration in development of future restoration projects and land development planning.

Examples include:

- Retain existing pockets of kokanee spawning habitat and functional riparian habitat downstream of Burbank St.
- Protect all aquatic and riparian habitat upstream of Burbank St.



## Plan Recommendations

### Restoration Priorities

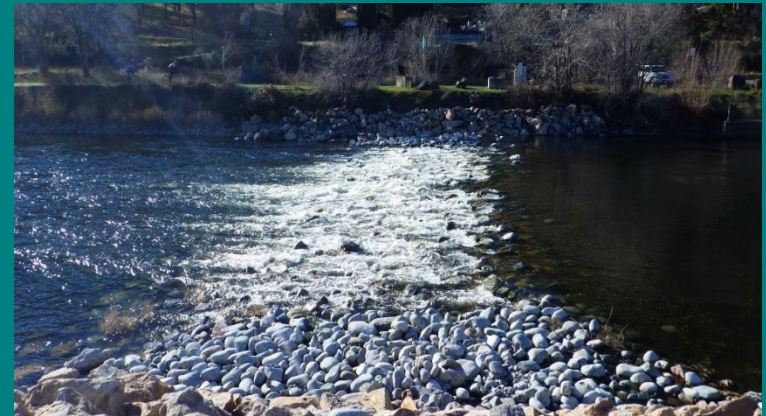
- Setting back dikes to expand channel and floodplain width offers the **best** tool for improving fish and wildlife habitat and flood protection throughout the Plan scope, and should be the priority goal over the long term
  - Costs associated with setting dikes back can be lower than rebuilding existing dikes to accommodate projected climate change flow increases.



## Plan Recommendations

### Restoration Priorities

- Restoration of riffle-pool sequences provides the best option for restoring creek bed stability and habitat diversity between Lakeshore Dr. Bridge and Burbank St. in areas where dike setback opportunities are limited and conditions are suitable
  - This approach provides opportunity to proceed with restoration in the shorter term due to reduced channel expansion requirements
  - Riffles are designed to integrate with future dike setback initiatives to ensure structural value is retained over the long term
- Studies identified the need for sediment capture high in the system to reduce damage from downstream sediment deposition on both habitat and flood protection
  - Floodplain expansion provides the best tool, but in the interim, construction of deep mid-channel basin/s to facilitate ongoing sediment removal will provide high value – specific site options are under investigation





### Key Messages

- Mission Creek is critical to Okanagan ecosystems and communities
- The creek is in poor condition from an ecosystem, channel stability and flood protection perspective, and will continue to decline without substantial mitigative actions
- Dike setback to facilitate channel and floodplain expansion provides the best tool for improving fish and wildlife habitat and flood protection. Riffle and sediment basin development will provide important complimentary contributions
- We must be prepared to respond when land and funding resources come available to support priority restoration actions
- The Plan provides the necessary information tools for future project site selection, engineered design, resource securement, and implementation planning



## Next Steps

- Engineered design is under development to support a riffle project between EECO and KLO Bridge aimed at delivery within 2 years (HCTF, FFSBC, and OBWB funded)
- Partnering with CoK staff to plan for collaborative project delivery aimed at achieving priority objectives of both organizations, including:
  - Delivery of a riffle project funded by Disaster Mitigation and Adaptation Fund in the vicinity of Hollywood Rd South within 2 years
  - A joint DMAF funding application for large scale works within the next year
- Ongoing investigations into land availability / dike setback opportunities
- Work with Okanagan Nation Alliance, Westbank First Nation, and Okanagan Indian Band to enhance level of input on project development and delivery, and incorporation of Traditional Ecological Knowledge



# Lower Mission Creek Habitat Conservation and Restoration Plan

## Presentation to RDCO Regional Board – Oct 13, 2022



Thank-you

