

Table S1: Organization types represented at the adaptation workshop.

<b>Organization Type</b>	<b>Number of Participants</b>
Parks Canada (including personnel from the national parks in Southern Ontario such as Georgian Bay Islands National Park)	12
Environment and Climate Change Canada	2
Natural Resources Canada	1
Ontario Ministry of Natural Resources	1
Municipality of Northern Bruce Peninsula	2
Environmental non-governmental organizations (e.g., Ontario Nature)	3
Local Indigenous groups (e.g., Bagida waad Alliance)	3
Academic institutions (e.g., Wilfrid Laurier University)	4
<b>Total:</b>	<b>28</b>

Table S2: Adaptation options identified by workshop participants in the coastal Lake Huron ecosystem break-out group ranked for effectiveness and feasibility (from 1 to 5, with 1 being low and 5 being high) and categorized based on intervention class and mechanism targeted by the intervention.

<b>Coastal Lake Huron</b>				
<b>Adaptation Option</b>	<b>Effectiveness</b>	<b>Feasibility</b>	<b>Intervention Class</b>	<b>Mechanism</b>
Public education and awareness	3	5	Conventional	Direct
Improve tributary water quality and reduce influence	4	5	Conventional	Direct
Invasive management (i.e. macrophytes, phragmites, and others)	5	4	Conventional	Direct
Septic inspection and maintenance	5	4	Conventional	Direct
Short term rentals inventory and controls	4	4	Conventional	Direct
Re-establish hydrological connectivity in prolonged low lake levels for vulnerable coastal wetlands and river mouths (i.e. channels)	3	3	Conventional	Direct
Limit development pressures adjacent to coastal habitat to facilitate migration (inland, longitudinal, and waterward) (i.e., permits, policies, lands, zoning, bylaws)	5	3	Conventional	Direct
Build natural protective features (soft engineering) (i.e. reefs, vegetation)	3	3	Conventional	Direct
Limit development pressures adjacent to coastal habitat to increase resilience to storm events and erosion (i.e., permits, policies, lands, zoning bylaws)	5	3	Conventional	Direct
Climate SMART coastal infrastructure	4	3	Conventional	Direct
Habitat management and connectivity plan and implementation strategy (CPR)	5	3	Conventional	Direct
Build natural protective features (hard engineering) (i.e. break wall)	3	2	Conventional	Resist
Fisheries management options (e.g., moratorium, stocking, exclusion zones, fishing reg.)	5	2	Conventional	Resist

Table S3: Adaptation options identified by workshop participants in the terrestrial ecosystem break-out group ranked for effectiveness and feasibility (from 1 to 5, with 1 being low and 5 being high) and categorized based on intervention class and mechanism targeted by the intervention.

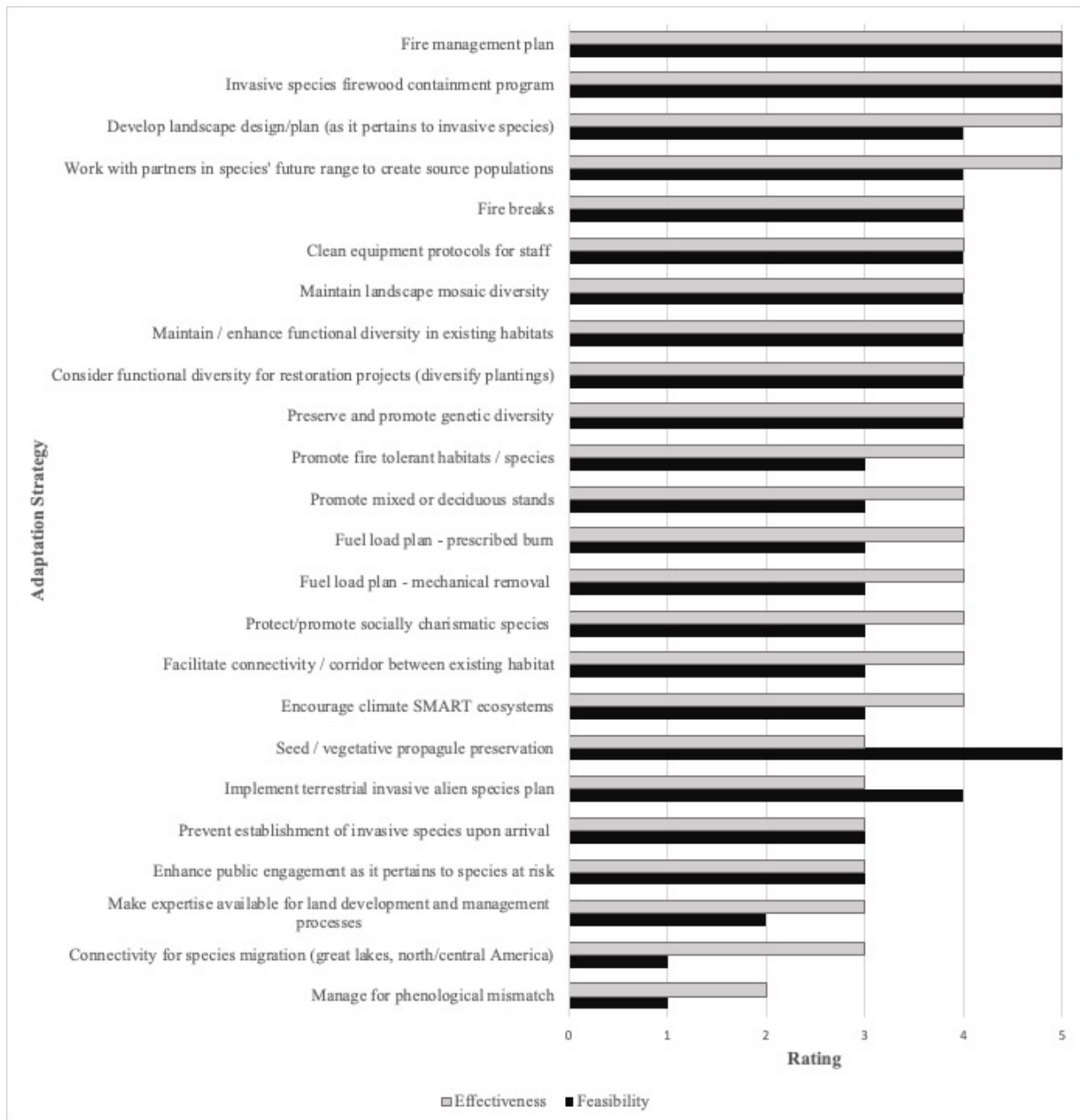
<b>Terrestrial</b>				
<b>Adaptation Option</b>	<b>Effectiveness</b>	<b>Feasibility</b>	<b>Intervention Class</b>	<b>Mechanism</b>
Seed / vegetative propagule preservation	3	5	Novel	Direct
Invasive alien species firewood containment program	5	5	Conventional	Direct
Implement fire management plan	5	5	Conventional	Resist
Preserve and promote genetic diversity	4	4	Conventional	Direct
Opportunity for partnership networking and recovery collaboration within current and future species range to create source populations	5	4	Conventional	Direct
Consider functional diversity for restoration projects (i.e., diversify plantings and consider functional traits)	4	4	Conventional	Direct
Consider maintaining / enhancing functional diversity in existing habitats	4	4	Conventional	Direct
Maintain landscape mosaic diversity across the Northern Bruce Peninsula (variable habitats and their associated successional stages)	4	4	Conventional	Direct
Implement terrestrial invasive alien species plan	3	4	Conventional	Direct
Develop clean equipment protocols for staff (clean heavy equipment, UTV, soil/fill, field gear)	4	4	Conventional	Resist
Develop landscape design/plan (trail plan, enforcement of plan) (as it pertains to invasive alien species)	5	4	Conventional	Resist
Create fire breaks	4	4	Conventional	Resist
Encourage/influence climate SMART ecosystems, habitats, and structures	4	3	Novel	Direct
Facilitate connectivity / corridor between existing habitat (Northern Bruce Peninsula)	4	3	Conventional	Direct
Protect/promote socially charismatic species (e.g., black bear and turtles)	4	3	Conventional	Resist
Enhance public engagement as it pertains to SAR	3	3	Conventional	Direct

Prevent establishment of invasive alien species upon arrival and eliminate (through policy, eradication teams, education, and equipment)	3	3	Conventional	Direct
Fuel load plan - mechanical removal	4	3	Conventional	Resist
Fuel load plan - prescribed burn	4	3	Conventional	Resist
Promote mixed or deciduous stands	4	3	Novel	Direct
Promote fire tolerant habitats / species	4	3	Novel	Direct
Make expertise available for land development and management processes (for species population range)	3	2	Conventional	Resist
Connectivity for species migration (great lakes, north/central America)	3	1	Conventional	Direct
Manage for phenological mismatch	2	1	Novel	Direct

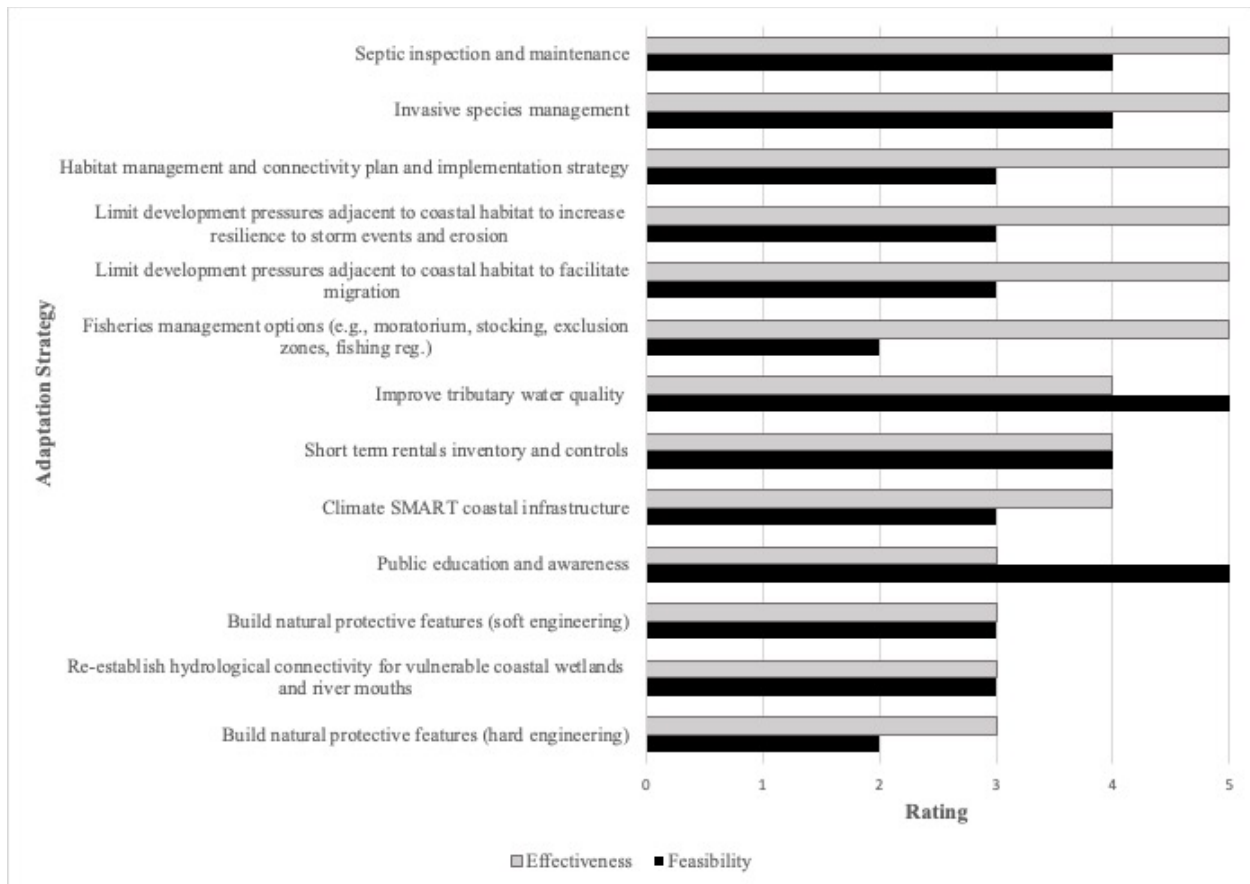
Table S4: Adaptation options identified by workshop participants in the inland aquatic ecosystem break-out group ranked for effectiveness and feasibility (from 1 to 5, with 1 being low and 5 being high) and categorized based on intervention class and mechanism targeted by the intervention.

<b>Inland Aquatic</b>				
<b>Adaptation Option</b>	<b>Effectiveness</b>	<b>Feasibility</b>	<b>Intervention Class</b>	<b>Mechanism</b>
Create shade through tree planting, physical structure, or snow fencing	5	5	Conventional	Resist
Create an inventory and response program for wetlands that are vulnerable to drying and invasion by invasive and undesirable species	5	5	Conventional	Resist
Protect and preserve coldwater refugia through mapping, fencing of site to prevent access, and monitoring of water temperatures in multiple locations	5	4	Conventional	Resist
Beaver management. Manage beaver population beyond threat to infrastructure. Remove beaver food source to make areas less appealing to them.	3	4	Conventional	Direct
Improve culvert design and reduce barriers	5	4	Conventional	Direct
Trans-boundary management	4	4	Conventional	Direct

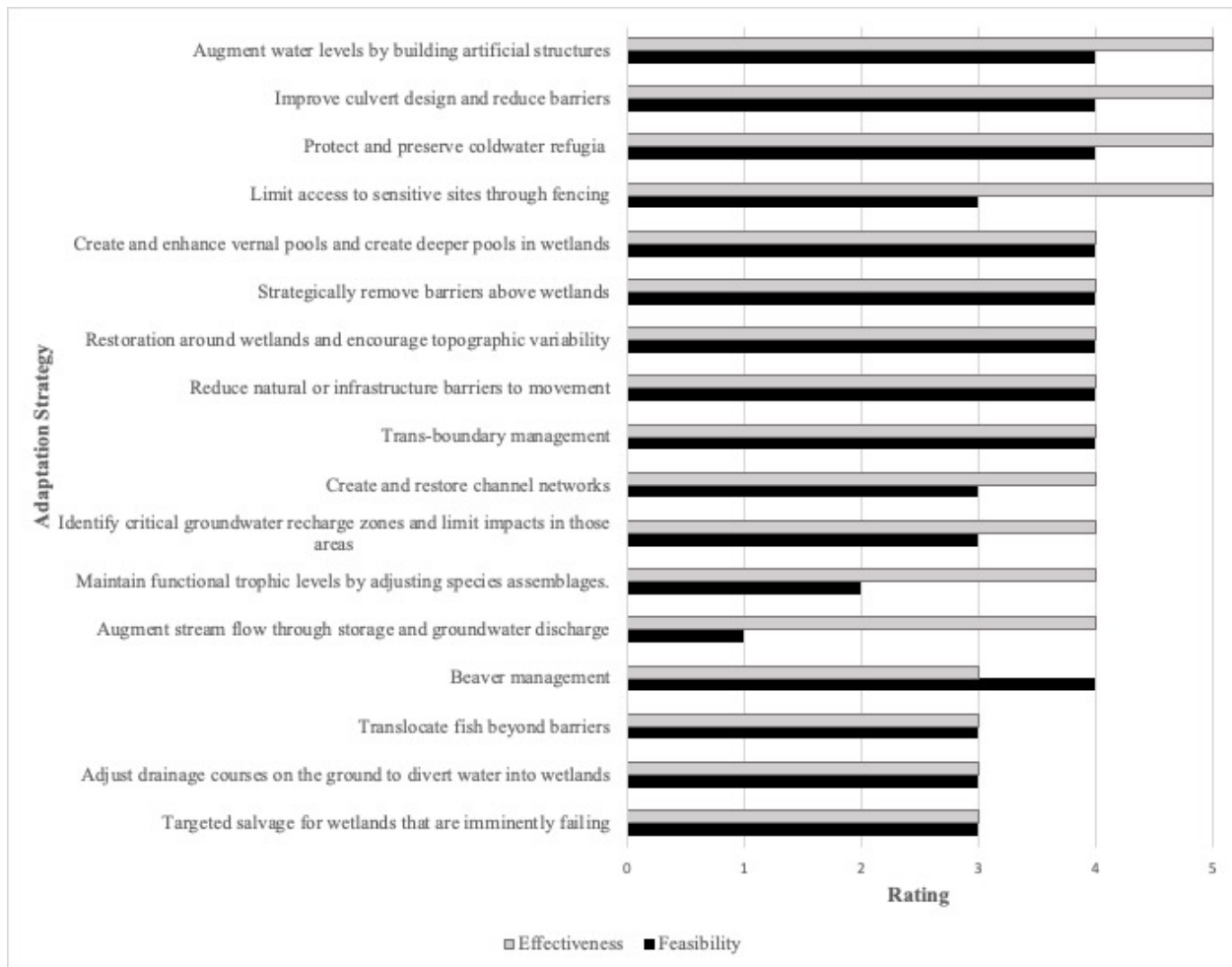
Reduce natural or infrastructure barriers to movement	4	4	Conventional	Direct
Augment water levels by building artificial structures	5	4	Novel	Resist
Planting around wetlands. Encourage topographic variability around and within wetlands. Restoration to include "pit and mound"	4	4	Conventional	Direct
Strategically remove barriers above wetlands	4	4	Conventional	Direct
Creation and enhancement of vernal pools. Creation of deeper pools in wetlands for overwintering herpetiles and to increase water storage capacity.	4	4	Conventional	Resist
Limit access by fencing of sites, limit fishing, and limit taking of water	5	3	Conventional	Resist
Identify critical groundwater recharge zones and limit impacts in those areas (e.g., avoid development in these areas)	4	3	Conventional	Resist
Create and restore channel networks	4	3	Novel	Direct
Targeted salvage for wetlands that are imminently failing (e.g., save turtles from drying wetland and move to new wetland)	3	3	Novel	Direct
Adjust drainage courses on the ground to divert water into wetlands	3	3	Novel	Resist
Augment flow by impounding water above important recharge points and releasing at critical times.	4	1	Novel	Resist



**Figure S1: Adaptation strategies identified by the terrestrial ecosystem break-out group with effectiveness and feasibility ratings.**



**Figure S2: Adaptation strategies identified by the coastal ecosystem break-out group with effectiveness and feasibility ratings.**



**Figure S3: Adaptation strategies identified by the in-land aquatic ecosystem break-out group with effectiveness and feasibility ratings.**



Table S5: Top adaptation options identified by workshop participants ranked for effectiveness and feasibility (from 1 to 5, with 1 being low and 5 being high) and categorized based on intervention class and mechanism targeted by the intervention.

<b>Adaptation Option</b>	<b>Effectiveness</b>	<b>Feasibility</b>	<b>Intervention Class</b>	<b>Mechanism</b>
<b>Terrestrial</b>				
Opportunity for partnership networking and recovery collaboration within current and future species range to create source populations	5	4	Conventional	Direct
Implement fire management plan	5	5	Conventional	Resist
Facilitate connectivity / corridor between existing habitat (Northern Bruce Peninsula)	4	3	Conventional	Direct
Implement terrestrial invasive alien species plan	3	4	Conventional	Direct
Interagency vegetation mapping project that includes succession, functional traits, and assisted migration as climate change impacts	4	4	Novel	Direct
<b>Coastal Lake Huron</b>				
Public education and awareness	3	5	Conventional	Direct
Invasive management (i.e. macrophytes, phragmites, and others)	5	4	Conventional	Direct
Habitat management and connectivity plan and implementation strategy	5	3	Conventional	Direct
Climate smart coastal infrastructure	4	3	Conventional	Direct
Limit development pressures adjacent to coastal habitat to increase resilience to storm events and erosion (i.e., permits, policies, lands, zoning bylaws)	5	3	Conventional	Direct
Fisheries management options (e.g., moratorium, stocking, exclusion zones, fishing reg.)	5	2	Conventional	Resist
<b>Inland Aquatic</b>				
Monitoring and early response for invasive species	5	5	Conventional	Direct
Creation and enhancement of vernal pools. Creation of deeper pools in wetlands for overwintering herpetofauna and to increase water storage capacity.	4	4	Conventional	Resist
Reduce barriers (increase connectivity)	5	4	Conventional	Direct

Protect and preserve coldwater refugia through mapping, fencing of site to prevent access, and monitoring of water temperatures in multiple locations	5	4	Conventional	Resist
Targeted salvage for wetlands that are imminently failing (e.g., save turtles from drying wetland and move to new wetland)	3	3	Novel	Direct