Property Management Strategy:

Management of Islands Trust Conservancy Nature Reserves and Covenants

ISLANDS TRUST CONSERVANCY

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i. Executive Summary

The *Islands Trust Act* establishes the Islands Trust Conservancy to acquire, hold and manage land and receive donations for the purpose of carrying out the object of the Islands Trust. The Islands Trust Conservancy primarily acquires land with significant ecological value for the purpose of establishing Nature Reserves. The Islands Trust Conservancy has policies that describe the roles and responsibilities of the Islands Trust Conservancy Board, including Policy 2.3 Acquisition and Management of Land which states:

An Islands Trust Conservancy Nature Reserve is an area that has been set aside because it has regionally significant natural ecosystems (landscape units with little or no human development) and may contain nationally and provincially identified ecosystems and species that are considered endangered, threatened or of special concern. The primary purpose of a Nature Reserve is the preservation and protection of the natural ecosystem. The size of a Nature Reserve should be sufficient to ensure that these ecosystems remain viable over the long term. Activities permitted on a nature reserve will have minimal impact on the land and in general will only include hiking and only in areas that are considered not sensitive to this activity.

Management of the nature reserves under the Islands Trust Conservancy ownership includes the registration of a conservation covenant, development and implementation of a management plan, annual monitoring, and in most cases, enlisting the assistance of a local management group. Management of conservation covenants includes annual compliance monitoring and communication with landowners and covenant holders. Conservation covenants may also require the assistance of a local management group if there is no local group present as a covenant holder. The Islands Trust Conservancy identified in its Regional Conservation Plan a need for:

- the establishment of a species at risk monitoring program (Objective 27);
- inventories for species at risk where they had been known to historically occur (Objective 28);
- the establishment of a coordinated invasive species monitoring and removal program (Objective 29); and
- the establishment of ecosystem monitoring programs on selected properties (Objective 30).

Development of a strategy to support decision-making and prioritize activities with the goal of maintaining or increasing the ecological integrity of the protected areas will help determine

where the resources and efforts will have the most impact. This strategy sets up how we record information and how we use it to guide decision making by addressing the following:

- efficient recording of the pertinent information;
- use the information, to analyse the **viability**, the **threats**, and the **opportunity** for actions to occur; and
- ranking protected areas based on these analyses that will prioritize actions and determine budget needs.

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1.0 Introduction

1.1 Islands Trust Conservancy Regional Conservation Plan 2011-2017

In November 2010, the Islands Trust Conservancy Board approved its Regional Conservation Plan (RCP). The plan identified seven goals and proposed thirty objectives to guide the work of the Islands Trust Conservancy. Goal 7 and its related objectives pertain to the monitoring and management of the Islands Trust Conservancy (ITC) protected areas.

GOAL 7: Monitor and manage existing conservation areas to maintain and enhance existing biodiversity and cultural features, with the understanding that ecosystems are continuously in a state of change.

Objective 27. Establish a species at risk monitoring program on Islands Trust Conservancy owned and covenanted lands where known populations of species at risk have been found. Adapt property management based on monitoring program findings.

Actions:

- Develop a species at risk monitoring program on Islands Trust Conservancy lands
- Assess and address budget needs of monitoring program
- Ensure that proper monitoring records are maintained
- Adapt property management as appropriate

Objective 28. Where previous populations of species at risk have been identified historically and where areas have high capacity to support species at risk on Islands Trust Conservancy owned and covenanted lands, conduct inventories to locate species at risk or record their absence.

Actions:

- Identify lands where species at risk reports have been filed previously.
- Conduct inventories for species at risk and note their presence or absence
- Add properties where species at risk are identified to species at risk monitoring program

Objective 29. Establish an invasive species monitoring and removal program for Islands Trust Conservancy owned and covenanted lands.

Actions:

- Develop an invasive species monitoring and management program on Islands Trust Conservancy
- lands
- Assess and address budget needs of monitoring and management program
- Ensure that proper monitoring and management records are maintained
- Adapt property management as appropriate

Objective 30. Where significant ecosystems exist, as identified by Islands Trust Conservancy staff and management plans, establish ecosystem monitoring programs to monitor their change over time with a view towards managing for maintenance of ecological integrity.

Actions:

- Evaluate Islands Trust Conservancy properties for appropriate ecological monitoring locations
- Determine and address budget needs for monitoring program
- Establish monitoring sites on at least 3 properties (as budget permits)

Because management of land requires a coordinated approach, the actions identified under Goal 7 of the Regional Conservation Plan have been addressed through the creation of this Property Management Strategy which will then be used to develop associated budgets. **The Property Management Strategy incorporates consideration of species at risk monitoring and stewardship, invasive species monitoring and control, and identification of important areas for ongoing ecosystem monitoring and management of ecological integrity.**

1.2 Purpose of the Property Management Strategy

As of January 2017, there are 73 covenanted properties and 26 natural reserves owned by the Islands Trust Conservancy, a total of 99 protected areas to manage. The Islands Trust Conservancy has a responsibility and obligation to manage these protected areas in perpetuity efficiently and cost effectively. The purpose of the Property Management Strategy is to devise a framework to support decision-making regarding property management activities on Islands Trust Conservancy owned and covenanted lands with the goal of maintaining or increasing the ecological integrity of the protected area.

2.0 Current Status of Property Management

2.1 General Property Management Practices

ITC protected areas all have ecological baseline information either in the form of a Baseline Inventory Report (Conservation Covenants) or through Management Plans (Nature Reserves) or in the case of 30 of the protected areas, there is both a conservation covenant and a management plan to guide activities.

The ecological inventories and management recommendations highlighted in the conservation covenants and management plans are critical to property management. A conservation covenant is written once and is then attached to the land title in perpetuity; it includes a baseline ecological survey that is meant to show what the natural state of the property is and in that state it should remain to fulfill the terms of the covenant. **ITC Policy 2.3 Acquisition and Management of Land** states that the Board will prepare and approve a management plan for each property it acquires as a nature reserve. The management plan will provide details on the scope and extent of the threats found on the protected area and provide recommendations for how best to address them. The Board will approve a management plan for its properties within one year of acquisition, and will update each management plan approximately every 10 years.

ITC Policy 2.3 also states that the ITC will monitor all nature reserves annually, and assess for potential management problems such as trespass, misuse or overuse, vandalism, safety hazards or other concerns or activities as listed in the management plan. The ITC will take action to

address any problems identified, as budgets permit. **ITC Policy 2.4 Conservation Covenants** states that each property covenanted by the Islands Trust Conservancy will be visited and monitored annually by either Islands Trust Conservancy staff or an Islands Trust Conservancy contractor. The monitoring is done to ensure compliance to the conservation covenant.

To date the main threats identified on ITC protected areas include invasive plant species, the degradation of habitat by vandalism and recreational activities, including trampling of vegetation, off-road vehicles and mountain-biking and possible danger trees along public trails that could threaten users safety. We have addressed these issues as they have been identified and where funds were available, prioritizing public safety above all else. Engaging local conservancy groups is a key element of effective implementation in the small isolated communities that ITC works in and most of the ITC protected areas are managed in collaboration with a local conservancy group who act as a management group whenever possible.

Basic property management information is managed using excel spreadsheets. These tables of information require consistent updating, and to date have kept very basic, essential information including: legal parcel descriptions, amount of area protected, covenant or nature reserve, landowner and partner information (e.g. covenant holders, management groups, wardens, ecological gift status), and basic species at risk information from ecological inventories.

2.2 Human Use and Risk Assessment

Permitted human uses of ITC nature reserves is guided by ITC Policy 2.3 whereby *"property management activities will focus on the preservation of the ecological integrity of the nature reserve. Low-impact recreational access will be accommodated only where the ecological integrity is not significantly compromised"*. There are 7 ITC nature reserves that are closed to the public due to the sensitive nature of their ecological ecosystems or because the nature reserve is used by a species at varying stages of their life cycle and are easily disturbed by human presence. Signs are posted at the nature reserves to highlight the permitted and/or restricted uses of the nature reserve and will state if it is closed to the public.

If a nature reserve is open to the public, trails are in place and maintained. The trails have usually been established and used by the public before ITC took ownership and through the management plan and public consultation process it was decided that low impact use of the trails for nature appreciation would not impact the ecological integrity of the nature reserve. Having trail networks increases the management required due to the increase threat of damage from compaction, use by restricted users such as mountain bikers and off road vehicles, and the increased risk of invasive species spread. Trail and roads in or near the protected areas also

cause fragmentation, breaking up contiguous areas of habitat into smaller, dispersed patches. This has been proven to lead to biodiversity losses and reduces the productivity of ecosystems because smaller areas of habitat are often less resilient to severe weather or disease shocks and can make movement by wildlife more difficult.

Public safety is of the utmost importance to the ITC. ITC Procedure 2.3.1 Annual Monitoring includes the protocol on documenting any safety issues such as danger trees, trespasses or unauthorized uses that would put the public at risk. All of the ITC owned properties have insurance applicable to their use, to cover use by the public, staff and/or volunteers.

Conservation covenants are usually on private property with individual landowners and not accessible by the public. If it is owned by another land trust and utilized as a nature reserve it may be open to the public.

2.3 Species at Risk

Protecting land as conservations covenants and nature reserves results in the conservation of species and their habitats, and often requires improving the quality of habitat by mitigating human impacts. Protection and stewardship of natural habitats are essential to the recovery of species at risk, and are also instrumental in preventing other species from becoming at risk (Environment and Climate Change Canada, 2016).

An ecological baseline inventory is done as part of the covenanting and management plan processes and that has served as the basis of the species at risk information currently available to ITC to base management actions on. ITC defines species at risk (SAR) as those designated globally, nationally by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as extirpated, endangered, threatened, or special concern and/or those designated provincially by the BC Conservation Data Centre as red or blue listed. Red-listed includes any indigenous species or subspecies considered to be extirpated, endangered, or threatened in BC and blue includes any indigenous species or subspecies considered to be of special concern in BC. In most of the ecological inventories and management plans a list of 'potential' species at risk is given. These species have not been seen during the survey time but the biologist feels that the habitat present would support such a species or there are known occurrences documented by the CDC on nearby properties. This list is a starting point for what to look for in further surveys.

To date, where species at risk have been observed and where there have been resources and a specialist biologist available, the ITC has contracted out surveys to confirm the species presence, assess the viability of the population, and where applicable, make management recommendations to address recovery of the species. These studies are costly and are not

always successful in finding the targeted species as seasonality can be very specific and animal browsing the area can make identification difficult. This has also made monitoring the species that are found very difficult as those that are found one year may not be seen the next. The species are not always found within the short one or two day surveys we can afford.

ITC has completed species at risk surveys on 7 protected areas for 12 species. See table in Appendix D for more detail. Fifty-six protected areas have been identified as having one or more species at risk and 39 have been identified as having potential habitat to support one or more species at risk that may not have been found yet.

2.4 Invasive Species

The Invasive Species Council of British Columbia defines the term “invasive species” as any non-native organism that cause economic or environmental harm and can spread quickly to new areas of BC. The International Union for Conservation of Nature (IUCN) defines them as “animals, plants or other organisms introduced by man into places out of their natural range of distribution, where they become established and disperse, generating a negative impact on the local ecosystem and species.” Many invasive plants have been introduced to BC without their natural predators and pathogens that would otherwise keep their populations in check in their countries of origin. For this reason, invasive plants also commonly referred to as "alien", "non-native", "exotic" or "introduced" plant species (Invasive Species Council of BC. 2016).

Globally, invasive species are the second greatest threat to biodiversity, after habitat loss. Managing invasive species can be extremely time-consuming and costly, and it doesn’t always work. They occur or are a threat on every property managed by the Islands Trust Conservancy. Plant species are the most identifiable, with occurrence information, systems, and protocols much better developed for invasive plants than for invasive animals, resulting in an unknown number of invasive animal species, especially invertebrates. However, key animals that are affecting management in the ITC nature reserves are American bullfrog, European Cottontail Rabbit, Fallow Deer, feral goats and sheep. Monitoring for appearances of known threats such as Eastern Grey Squirrels, identified by the Garry Oak Ecosystem Recovery Team (GOERT) as a species of concern to Garry oak and associated ecosystems, and European Fire Ant, with populations growing and spreading rapidly since their presence was confirmed in BC in 2010, are required so that they can be reported to the Invasive Species Council of British Columbia immediately. There have been no reports in the Islands Trust Area to date.

Invasive species are documented in the ecological inventories and when seen on the annual monitoring visits. In nature reserves most infestations are kept under control by the local management groups who work throughout the year to address these species. On conservation covenants the landowner is notified in their annual monitoring letter about the invasives species that have been identified and given information about how to deal with the

infestations. To date, invasive species removal on ITC covenant properties owned by private landowners has been out of scope, though some funding has gone to support invasive species removal on ITC covenants over nature reserves owned by local land trusts.

2.5 Habitat Restoration

Ecological restoration projects have been conducted as needed, typically following observations from annual monitoring, as recommended in management plans or at the recommendation of the local island management groups.

To date, restoration projects have been most successful with the ongoing support of local island conservancies and volunteers, as staff time and travel budget limitations do not allow for the maintenance required to ensure the continued survival and growth of the restoration area, such as watering, weeding and maintaining caging to deter animal browse, on a regular basis. Local assistance is also required to set up and complete ecological monitoring to try to evaluate the effectiveness of the restoration activities at regular intervals.

Widespread ecological monitoring or ecological restoration projects have been out of scope, and are being considered for the first time under the current Regional Conservation Plan.

3.0 Property Management Strategies

3.1 General Strategy

Goal 7 from the RCP, **to monitor and manage existing conservation areas to maintain and enhance existing biodiversity and cultural features, with the understanding that ecosystems are continuously in a state of change,** contains many objectives and actions related to those objectives. To take specific actions required for invasive species and species at risk management a complete picture is required through research, efficient data management and thoughtful analysis.

Additional information required assess property management priorities are: fragmentation (trails, roads, utility corridors present), landscape contexts/connectivity (adjacency to other protected areas, wildlife corridors) and recreational use (open to the public, signage, presence of trail networks). Please see Appendix C for a checklist of fundamental information required to make management decisions.

There will never be a point when ITC has all the information for all of its protected areas but management decisions can begin with the data now available and expanding upon it. To prioritize how and what information should be gathered first to fulfill the RCP objectives two Excel spreadsheets have been set up, a Species at Risk Management Framework and an Invasive Species Management Framework. These tables show where there is missing data and

highlight some basic information needs right away. The information in these tables will then be used to rank the protected areas into highest to lowest priority.

3.2 Species at Risk Framework

To date, there is very limited information about the species at risk that occur in the protected areas managed by the ITC. If any species at risk have been seen during an ecological inventory they have been recorded but specialist biologists are required to identify many species at risk, with time and funding needed for in-depth study. It is important to identify the species, what life stage the species is utilizing the protected area for, and to count or estimate numbers/size of population and their location/size of habitat. This information is critical for management planning; with detailed reporting about species at risk occurrences, effective management options can be tailored to their habitat needs.

3.2.1. Goals:

1. Species at risk tracked and mapped so that the data can be searched and used to prioritize management activities.
2. Species and ecological communities at risk thrive within ITC protected areas at current or improved population levels and/or distributions by doing the following:
   a. Threats to species and ecological communities at risk are mitigated;
   b. Essential attributes of critical habitat for species at risk are protected and restored;
   c. Any additional recovery actions are implemented; and
   d. ITC policies appropriately address protection and recovery of species and ecological communities at risk.
3. Data management system in place to identify where species at risk information is lacking and to prioritize areas to be surveyed to improve species at risk data.
4. The Islands Trust Conservancy effectively communicates with Provincial and Federal species at risk recovery teams regarding species at risk and identified Critical Habitat on Islands Trust Conservancy managed lands.

3.2.2. Strategic Actions:

1. Identify and document known species at risk in ITC protected areas. Add as a checklist item to the procedural checklists for new protected areas. Summarize occurrence data into the ITC spreadsheet from the following:
   a. Conservation Data Centre (CDC);
   b. Critical Habitat data: recently Critical Habitat for some species at risk has been identified by Environment Canada and Parks Canada on ITC properties. As Recovery Strategies are updated to include Critical Habitat, it is likely that further areas will be identified on ITC lands. The federal government has an expectation that landowners as well as local and

provincial governments will work collaboratively with them to ensure effective protection of Critical Habitat under the federal Species at Risk Act; and

c. ITC ecological survey data.

2. Record the rankings given to species and ecological communities at risk that we know exist on ITC protected areas i.e. global, national and provincial rank. See Appendix A.
3. Coordinate additional studies for those protected areas that do not have enough information, beginning with nature reserves first and then conservation covenants, with landowner permission, and as budget allows. Ideally, all protected areas should have the same level of study and information gathered so that they can be compared objectively and accurately. Prioritization will be based on the information currently available for the ITC protected areas, but new information will be added over time, allowing for the dynamic analysis outlined in 4.0 Prioritizing Management.
4. Define parameters of information gathering to ensure the data from different protected areas are consistent.
   a. Define and record species-specific methodologies used to ensure that the same methods are used depending on the species being studied. This would include defined ways of using owl call playback, bat detectors, targeted searches for crepuscular species such as Common Nighthawk, dawn surveys for avian species such as Olive-sided Flycatcher, amphibian egg mass surveys and plant, moss, lichen surveys, gastropods, and reptiles.
   b. Develop a methodology to ensure all the species found are recorded in a consistent with occurrences and distribution, numbers and locations recorded and mapped in a way that will make monitoring and follow-up easier.
   c. Have all species at risk biologist contractors submit Incident Reports to the Conservation Data Centre.
   d. Maintain and update data tracking at regular intervals, suggested every 6 months.
5. Determine budget needs for the species at risk surveys based on specialist biologist availability and fees, size of survey area and location or access constraints. This will be done on an annual basis and will be based on the allocated property management budget for that year.
6. Develop action plans to address management and recovery of species at risk.
   a. Identify if there is a recovery strategy developed for the species by the Government of Canada. A recovery strategy is a planning document that identifies what needs to be done to arrest or reverse the decline of a species. It sets goals and objectives and identifies the main areas of activities to be undertaken.
   b. If a species at risk is identified that has a recovery strategy, all efforts will be made to follow the strategy.

c. If there is not a recovery strategy already developed, expert species at risk biologists will be asked to inform and develop specific management actions. Specific management recommendations can be made to address the main threats associated with ITC protected areas: invasive species, trespass and recreational activities and habitat improvement information.
d. Consult covenant holders if a waiver is required to implement an action plan (e.g. girdling of a native tree species to allow for better conditions for a species at risk, herbicide use for invasive species, etc.).
e. Determine budget required to implement identified species at risk actions. Source external funding as required.
f. Incorporate changes to permitted and prohibited uses and long-term management objectives into management plans

7. If funding and capacity allows, initiate ongoing ecological monitoring, developing a methodology to find and reproduce the study area transacts, or mapped location of species, creating a data source that can be added to year after year.
8. Update policies to address identified species at risk actions, as required.
9. In the future develop a GIS-based relational to use data for forms, reports, queries, mapping etc. potentially integrated with the property prioritization model developed for the ITC Land Securement Strategy and linked to the internal mapping platform, TAPIS, used by Islands Trust staff. It would be a dynamic model, changing as new information is gathered.

3.3 Invasive Species Framework

An invasive species has the potential to pose undesirable or detrimental impacts on people, animals or ecosystems. Invasive plants can establish quickly and easily on both disturbed and un-disturbed sites, and causing widespread negative economic, social, and environmental impacts. Information on invasive species is required to inform priorities for species at risk inventories, but is also a stand-alone concern.

3.3.1. Goals:

1. The presence and impacts of invasive species are minimized.
2. New invasions are prevented or quickly eradicated to the extent possible.
3. ITC policies appropriately address the threat to ecosystems and species from invasive species.

3.3.2. Strategic Actions:

1. Identify and document in the spreadsheet all known invasive plant species on ITC protected areas using data from ecological inventories, annual monitoring, knowledge of local land trusts and the Invasive Alien Plant Program (IAPP) Application from MFLNRO. Add as a

checklist item to the procedural checklists for new protected areas. Updates to be completed at least annually and is part of the annual compliance monitoring obligations.

2. Utilize the list of Coastal Invasive Species Committee's current Priority Invasive Plants (list is kept current on their website and is listed in Appendix D) to categorize the invasive species identified on ITC protected areas into the management categories: Prevent, Eradicate, Control and Contain.
    a. **Prevent:** These species are not known to occur in the region, but are likely to establish if introduced. Eradicate if found.
    b. **Eradicate:** These species are not known to occur in limited distribution and low density. Eradicate if found.
    c. **Control:** Established infestations common and widespread throughout the Coastal ISC region. Focus control in high value conservation areas. Use biological control, if available, on a landscape scale.
    d. **Contain:** These species have established infestation in portions of the region. Contain existing infestation and prevent spread to un-infested areas.

    If protected areas have been prioritized due to species at risk presence then management prescriptions may be developed for removing invasive species which are present, but do not make it on to these lists.
3. Invasive plants found on ITC protected areas that are in the Prevent or Eradicate categories should be reported to either Report A Weed BC or to the Coastal Invasive Species Committee as outlined in the Coastal ISC Priority Invasive Plant List.
4. Research and identify places or ways to dispose of invasive plant material, particularly hazardous species such as knotweed, on each island.
5. Develop action plans to address invasive species, based upon the Coastal Invasive Species Committee's current Priority Invasive Plants lists.
    a. Generate list of priority sites for invasive plant removal, those that have Prevent or Eradicate species first and then Control and Contain. Since many protected areas have invasive species on the Contain list, the numbers of different invasive species on the protected area will be used as a prioritizing tool.
    b. Implement priority actions via annual contracts with management groups or local partners to remove invasive species.
    c. Consult covenant holders if a waiver is required to implement an action plan. Evaluate options if invasive species require pesticides or herbicides that are not allowed under the conservation covenant.
    d. Revise/add priority sites pending new occurrence information, revised Coastal Invasive Species Committee Priority Plant List, or other new information.
6. Monitor the effectiveness of the invasive species removal techniques used during the annual monitoring and adjust the activities as appropriate. Removal of invasive species

often comes hand in hand with restoration activities to help to establish native species and deter new invasives from re-establishing. Ecological monitoring to determine the effectiveness of these restoration efforts will be supported whenever local land trust involvement and funding allows.

7. Prevent new invasive species invasions by sharing information about emerging invasive species through ITC's website, newsletter and communication to covenant landowners

3.4 Ecological Restoration and Ecological Monitoring

Up to this point ecological restoration has been prompted by species at risk studies, invasive species management, natural catastrophic events or damage through breach or trespass on ITC protected areas. Restoration then triggers the need for ecological monitoring to observe the restoration work completed and help determine the effectiveness of the enhancements to the habitat for species at risk or to deter invasive species. Ecological restoration and monitoring will now be linked to the strategic actions identified for species at risk and invasive species above in 3.2.2 and 3.3.2 respectively.

3.5 First Nations and Property Management

The ITC Land Securement Strategy indicates that the Islands Trust Conservancy will work with First Nations who have traditional territory in the Islands Trust area to allow for traditional practices to take place on Islands Trust Conservancy nature reserves where appropriate. The Islands Trust Conservancy, at the request of a landowner, will also facilitate co-operation with co-covenant holders and First Nations so that traditional practices with minimal disturbance to covenant values may occur in non-NAPTEP (Natural Area Protection Tax Exemption Program) covenant areas.

Protected areas with known archaeological sites will be treated with respect and a willingness to co-manage. Efforts will be made to explore and incorporate traditional ecological knowledge (TEK) in management planning as much as possible.

4.0 Prioritizing Management

Prioritizing involves calibrating all the information at hand to evaluate and rank management activities with limited staff time and resources. Prioritization is based on the following:

a. **Highly viable:** have high biodiversity/ecological integrity with documented or high potential for sensitive ecosystems and species at risk, size and landscape context/connectivity data.
b. **Highly threatened**: presence of invasive species, fragmentation and recreational use.
c. **High opportunities**: local land trust or group on site on a regular basis, people who know the protected area and are familiar with the species at risk present. Having local

capacity is crucial to ensuring long term commitment for surveys and threat management.

A low number of threats in a protected area adds to an overall high viability score so the rankings will all be prepared to easily see which protected area is the most viable by ranking as is shown below: protected areas with the most invasives, most fragmentation and most recreation use are ranked the lowest. When determining threats the lowest numerical value rank will illustrate the most threat (lowest ecological integrity) to keep things consistent towards the goal of maintaining protected areas with high ecological integrity. Protected Areas with the highest viability, highest threats, and highest opportunity would be of the highest priority to begin management actions on.

4.1 Ranking Available Data

Viability rankings are determined by using the following criteria of ecological communities and species at risk, size and landscape context/connectivity data:

Species at Risk Rank	**Definition**
4	Distinctly important for 1 or more SAR (only known population in Canada, last breeding pair etc.)
3	>3 SAR confirmed on site
2	SAR confirmed on site
1	SAR likely on site but not yet found

Can be further broken down to number of Global, National and Provincial status if protected areas are very close in ranking.

Ecological Communities Rank	**Definition**
4	S1 Red listed, critically imperiled
3	S2 Red listed, imperiled
2	S3 Blue listed, special concern, vulnerable to extirpation or extinction
1	S4 Yellow listed, apparently secure

Size Rank	**Definition**
4	More than 10 ha
3	5-10 ha
2	2-5 ha
1	Less than 2 ha

Landscape Context Rank/ Connectivity Rank	**Definition**
4	Mostly surrounded by parks or other natural

	lands
3	Mostly surrounded by rural or agricultural lands
2	Mostly surrounded by a rural and urban mixlands
1	Mostly surrounded by urban lands

The threat rankings use invasive species, fragmentation, and recreational use data criteria as follows:

Invasive Species Rank	**Definition**
4	No invasives
3	Few invasives
2	Moderate invasives
1	Highly infested

Fragmentation Rank	**Definition**
4	None
3	Unsurfaced trails
2	Old skid trails, logging landings, gravel roads
1	Paved roads

Recreation Use Rank	**Definition**
4	No public access
3	Public access but no trails
2	Moderate use of trail system,
1	Frequent use, large trail network, utility corridors present

The opportunity ranking is determined as follows:

Opportunity	**Definition**
4	Local land trust on-island who is a partner on the protected area
3	Local land trust on-island
2	Local group on-island willing to help
1	Has volunteer warden

4.2 Funding Options

4.1.1 Base budget

The Property Management strategy outlines how to prioritize what should be done first with the resources available. Funds required for species at risk surveys, invasive removal and restoration, varies enormously depending on the species being studied and the location. Species at risk studies can start at approximately $2,000 per property to obtain a specialist who can find and map the priority species and set up a monitoring regime that can be reproduced year after year. Invasive removal requires long hours of manual labour and usually involves an investment of a minimum of $2,000 to treat, remove and dispose of the invasive species correctly in a moderate area and to begin restoration activities such as planting and protection of native species to deter regrowth of invasives. Many of these projects require work to be done over many years, which prolongs the projects, but allows for funding to be available.

Additional funding to the Property Management budget could be requested from Trust Council and funds can potentially be sourced from other areas, including grants and endowments, as explored below.

4.1.2 Grants

When species at risk, or suitable or critical habitat, is identified on an ITC protected area, there is the potential for funding from the federal Habitat Stewardship Program (HSP) for Species at Risk. This funding may allow for further study of these areas, to determine management objectives and to fund action items related to species recovery. The more information that is on hand the more likely the ITC would be to obtain related funding.

4.1.4 Dedicated Property Management Fund

The ITC Securement Strategy states that the ITC will only secure land if an adequate property management budget is available and that the ITC will work to build a Property Management Fund to buffer potential budget shortfalls for property management. This would come in the form of endowments or general donations.

4.3 Strategies Moving Forward as Protected Areas Grow in Number

A way of recording and presenting complex data and information in a GIS- based relational database is necessary when dealing with the amount of protected areas that the ITC is currently managing, with almost 100 properties. This would move us away from the Excel spreadsheet format for organizing the data and could be a continuation of the property prioritization model developed for the ITC Land Securement Strategy and linked to the internal mapping platform, TAPIS, used by Islands Trust staff. It would be a dynamic model, changing as new information is gathered and could include occurrence-specific field assessments, relevant literature reviews,

and expert consultation information for both species at risk and invasive species strategies. It is also important to continue to work with local partners to share data.

A strategic, effective species at risk and invasive species program would benefit from an information management system that can organize the multiple layers of information relating to the species, as well as site-specific recovery prescriptions, activities, and monitoring results for species at risk and the distribution, treatment, and monitoring of invasive species. This information would help to prioritize the protected areas that require essential actions first as timing and funding restraints will always be a consideration, but also will help record the information that is collected from the species at risk surveys, invasive species removals and ecological monitoring of these areas.

As more protected areas continue to be added to those managed by the ITC, the following changes may be necessary due to increasing costs. Decisions on individual protected areas can be made by using information in this strategy to rank and prioritize how the change would affect these protected areas. Altering management and monitoring cycles in a way that saves time and money will open up resources for other management.

- Move away from annual monitoring for some properties that have had few issues, monitor every 2 years instead. Would require policy change.
  Options: Staff to monitor some small protected areas while already on Islands for other matters to reduce contract costs or hiring additional seasonal staff/ co-op students to complete monitoring.
- Increase timeline for management plan revisions, to every 15 years. Or review every 10 years, but only revise as needed adding new information as an addendum, doing a major revision every 30 years. Would require policy change and may not be possible where there is a covenant that states that a management plan will be revised every 10 years without amending the covenant.
  Options: Change covenant language or drafting letters of permission with existing covenant holders.
- Take steps to better organize and manage the information related to each protected area (species at risk, invasive species, restoration activities, mapping) with a more formal decision support system such as a GIS- based relational database to ensure that a better system is in place to determine time and funds are used efficiently and effectively.
- Limiting public access and/or more restrictions on recreational use at nature reserves as greater numbers of visitors on the protected areas lead to a greater number of management issues.

- As protected area numbers increase and management moves from reactive to proactive with species at risk, invasive species and restoration a focus, another staff person would be required to effectively manage. Expected time frame is when managing 130 or more protected areas.

5.0 Conclusion

A Property Management Strategy that is effective and efficient takes time to develop and will be constantly changing. Ensuring species and ecological communities at risk thrive within ITC protected areas at current or improved population levels and/or distributions requires we first know where these species are and second, that an ecological monitoring program is put into place to assess change over time and implement adaptive management. By determining the viability, threat and opportunity ranking for each protected area we can identify what protected areas need the most immediate attention. As work begins on these new objectives a better idea of the budgets associated with them will be determined.

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Appendix A

Species at Risk Classifications

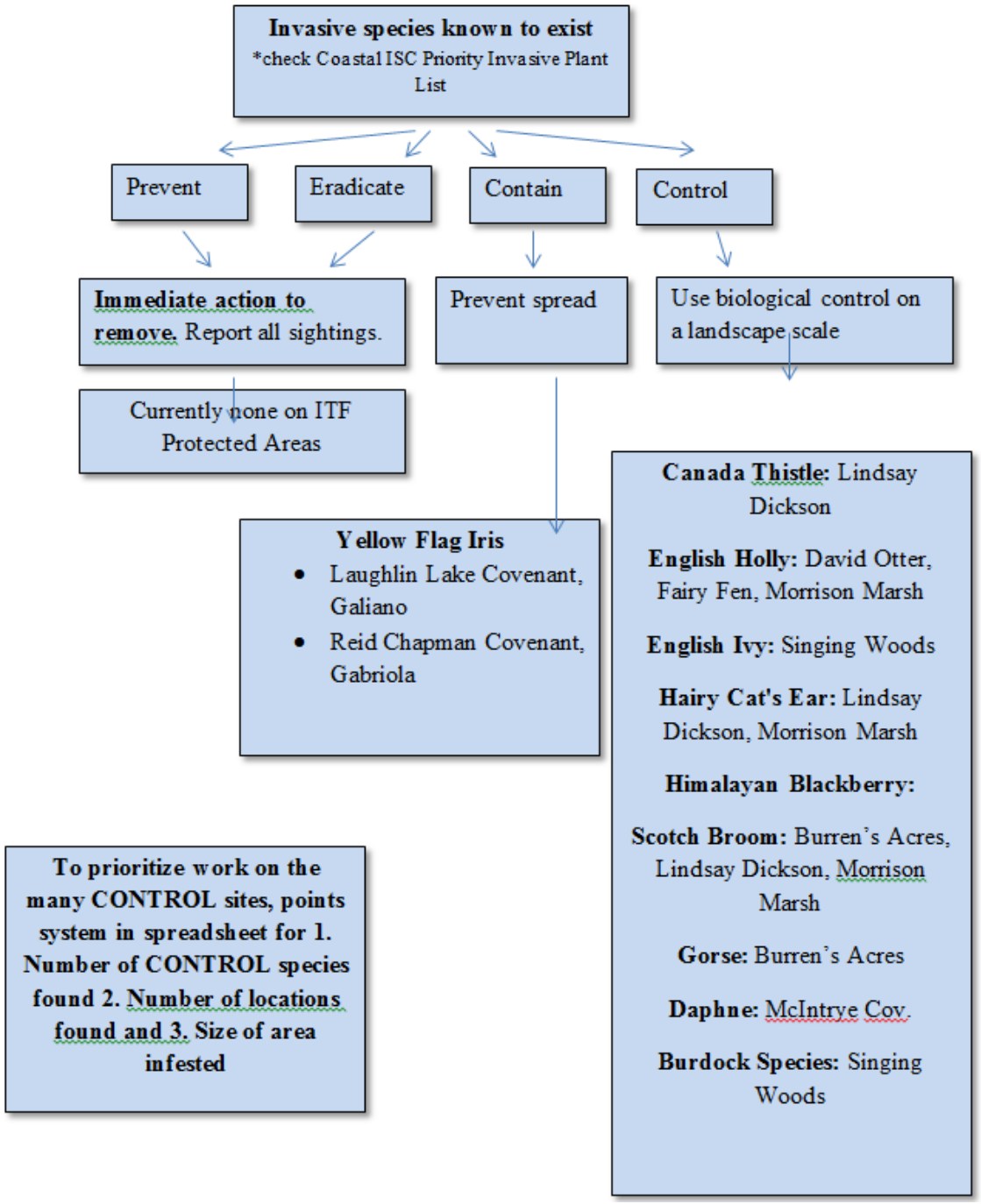
Global Conservation Status Global Rank applies to a species/ecological community across its entire range: G1 = critically imperiled G2 = imperiled G3 = vulnerable to extirpation or extinction G4 = apparently secure G5 = demonstrably widespread, abundant, and secure
National Conservation Status Committee on the Status of Endangered Species in Canada (COSEWIC) rankings E = ENDANGERED: A species facing imminent extirpation or extinction T = THREATENED: A species that is likely to become endangered if limiting factors are not reversed SC = SPECIAL CONCERN: A species of special concern because of characteristics that make it is particularly sensitive to human activities or natural events NAR = NOT AT RISK: A species that has been evaluated and found to be not at risk
Provincial Conservation Status Provincial Rank applies to a species/ecological community conservation status in British Columbia: S1 = critically imperiled S2 = imperiled S3 = special concern, vulnerable to extirpation or extinction S4 = apparently secure S5 = demonstrably widespread, abundant, and secure **Red:** Includes any indigenous species or subspecies that have, or are candidates for, Extirpated, Endangered, or Threatened status in British Columbia. Extirpated taxa no longer exist in the wild in British Columbia, but do occur elsewhere. Endangered taxa are facing imminent extirpation or extinction. Threatened taxa are likely to become endangered if limiting factors are not reversed. **Blue:** Includes any indigenous species or subspecies considered to be of Special Concern (formerly Vulnerable) in British Columbia. Taxa of Special Concern have characteristics that make them particularly sensitive or vulnerable to human activities or natural events. Blue-listed taxa are at risk, but are not Extirpated, Endangered or Threatened. **Yellow:** Includes species that are apparently secure and not at risk of extinction. Yellow-listed species may have red- or blue-listed subspecies. **Exotic:** Species that have been moved beyond their natural range as a result of human activity. Exotic species are also known as alien species, foreign species, introduced species, non-indigenous species and non-native species. Exotic species are excluded from the Red, Blue and Yellow Lists as a Provincial Conservation Status Rank is not applicable
Conservation Framework (CF) Priority A species or ecological community receives a conservation priority of 1 (highest) through 6 (lowest) for each of the three Conservation Framework Goals. This priority list is currently being

updated.
GOAL 1: Contribute to global efforts for species and ecosystem conservation.
GOAL 2: Prevent species and ecosystems from becoming at risk.
GOAL 3: Maintain the diversity of native species and ecosystems.
This tool ranks B.C. species and ecosystems of conservation concern for management action, based on five clearly defined criteria: Global and provincial status, Trends, Threats, Stewardship responsibility, Feasibility of recovery

Appendix B

Invasive Species Decision Support tool

(not all invasive species and protected areas are included in this example)



Appendix C

Checklist of Fundamental Information required to make Management Decisions

Background information is required to get a clear idea of what is and what is not on the protected area.

1. Property Size
2. Landscape Context (surrounding land uses)
3. Restrictions on use from outside agencies: Ecological Gift Status, Covenant, Charges on Title, etc.
4. Ecological Inventory: collected in the Baseline Inventory Report (covenants) or the Management Plan (Nature Reserves).
    - List and location of species at risk found at the time of the survey
    - List and location of invasive species found at the time of the survey.
        - High risk invasive plants as outlined in the Coastal Invasive Species Committee Priority Plant List (2016), with guidelines to Prevent, Eradicate, Contain or Control depending on species.
        - Invasive Alien Plant Program (IAPP) Application a Province of BC database which contains invasive plant surveys, treatments, and activity plans for the entire province of BC (Forest, Lands & Natural Resource Operations, 2016).
    - Ecological communities, location and description
    - Areas of disturbance and invasive species, location and description
    - Occurrence information from the Conservation Data Centre (CDC)
    - Identified Critical Habitat from the Canadian Wildlife Service
    - Information from Islands Trust mapping
        - Sensitive Ecosystems Mapping
        - Mapped Species
        - Shoreline mapping (Eelgrass, Forage Fish, Bull Kelp)
5. Human Infrastructure: Trail networks, roads and driveways, signage, parking, wells, buildings, etc.
6. First Nations Use:
    - Identified Archaeological Sites: Remote Access to Archaeological Data (RAAD)
    - List and description of prior contact with First Nations regarding the protected property
        - Community knowledge
        - Any other relevant information (e.g., pertinent research, publications)
        - Sensitive Ecosystem Mapping (SEM)

7. Annual Monitoring: Receive presence of invasive species updates annually and threats to ecology noted
8. Set priorities in conjunction with the provincial Conservation Framework: all species and ecosystems in B.C. have been run through the Conservation Framework tools, assigning conservation priorities and actions to each, if the basic scientific studies exist the Framework recommends actions such as ecosystem and habitat protection, invasive species control, stewardship, population management, and planning processes. This is in the process of being updated. Website: http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/species-ecosystems-at-risk/setting-priorities

Appendix D

Coastal ISC Priority Invasive Plant List (current to: April 21, 2016)

PREVENT

These species are not known to occur in the region, but are likely to establish if introduced.
Eradicate if found. REPORT ALL SIGHTINGS

Plant Species	Status	Report To
Common Crupina *Crupina vulgaris***	**Provincial EDRR**	Report A Weed BC
Cordgrass, Smooth *Spartina alterniflora***	**Provincial EDRR**	Report A Weed BC
Hawkweed, Whiplash *Hieracium flagellare*	Regional EDRR	Info@coastalisc.com
Knapweed, Russian *Acroptilon repens*	Regional EDRR	Info@coastalisc.com
Kudzu *Pueraria Montana***	**Provincial EDRR**	Report A Weed BC
Rush Skeleton weed *Chondrilla juncea*	Regional EDRR	Info@coastalisc.com
Yellow Starthistle *Centaurea solstitialis***	**Provincial EDRR**	Report A Weed BC

ERADICATE

These species are not known to occur in limited distribution and low density.
Eradicate if found. REPORT ALL SIGHTINGS

Plant Species	Status	Report To
Blueweed, *Echium vulgare*	Regional EDRR	Info@coastalisc.com
Buffalo Burr, *Solanum rostratum*	Regional EDRR	Info@coastalisc.com
Common Reed, *Phragmites australis***	**Provincial EDRR**	Report A Weed BC
Cordgrass, Dense-flowered *Spartina densiflora***	**Provincial EDRR**	Report A Weed BC
Cordgrass, English *Spartina anglica***	**Provincial EDRR**	Report A Weed BC
Cordgrass, Salt meadow *Spartina patens***	**Provincial EDRR**	Report A Weed BC
Garlic Mustard *Alliaria petiolata*	Regional EDRR	Info@coastalisc.com
Giant Hogweed *Heracleum mantegazzianum* (T) (N)	Regional EDRR	Info@coastalisc.com
Giant Reed *Arundo donax***	**Provincial EDRR**	Report A Weed BC
Hoary Alyssum *Berteroa incana*	Regional EDRR	Info@coastalisc.com
Hoary Cress, Heart-pod *Lepidium draba subsp. Draba*	Regional EDRR	Info@coastalisc.com
Lesser Celendine, *Ficaria verna*	Regional EDRR	Info@coastalisc.com
Loosestrife, Garden (Yellow) *Lysimachia vulgaris*	Regional EDRR	Info@coastalisc.com
Milk Thistle *Silybum marianum* (N)	Regional EDRR	Info@coastalisc.com
Shiney Geranium, *Geranium lucidum***	**Provincial EDRR**	Report A Weed BC
Slender False Brome, *Brachypodium sylvaticum***	**Provincial EDRR**	Report A Weed BC
Sulfur cinquefoil *Potentilla recta*	Regional EDRR	Info@coastalisc.com
Sweet Fennel *Foeniculum vulgare*	Regional EDRR	Info@coastalisc.com
Wild Chervil *Anthriscus sylvestris*	Regional EDRR	Info@coastalisc.com

CONTAIN

These species have established infestation in portions of the region.
Contain existing infestation and prevent spread to un-infested areas.

Plant Species

Carpet Burweed *Soliva sessilis*
Hawkweed, Orange *Hieracium aurantiacum*
Knapweed, Black *Centaurea nigra*
Knapweed, Diffuse *Centaurea diffusa* (N)
Knapweed, Meadow *Centaurea pratensis*
Knapweed, Spotted *Centaurea maculosa* (B) (N)
Knotweed, Bohemian *Fallopia x bohemica* (N)
Knotweed, Giant *Fallopia sachalinensis* (N)
Knotweed, Himalayan *Polygonum polystachum* (N)
Knotweed, Japanese *Fallopia japonica* (N)
Poison Hemlock *Conium maculatum* (T)
Policemans Helmet/Himalayan Balsam *Impatiens glandulifera*
Scotch Thistle *Onopordum acanthium*
Yellow Flag Iris *Iris pseudacorus* (N)

CONTROL

Established infestations common and widespread throughout the Coastal ISC region.
Focus control in high value conservation areas.
Use biological control, if available, on a landscape scale.

Plant Species

Bur Chervil *Anthriscus caucalis* (N)
Burdock Species *Arctium spp.*
Canada Thistle *Cirsium arvense* (B) (N)
Tansy, Common *Tanacetum vulgare*
Teasel, Fuller's Dipsacus fullonum
Dalmatian Toadflax *Linaria dalmaticab* (B) (N)
English Holly *Ilex aquifolium*
English Ivy *Hedera helix*
Giant Mannagrass *Glyceria maxima*
Hairy Cat's Ear *Hypochaeris radicata*
Himalayan Blackberry *Rubus armeniacus* (discolor)
Jimsonweed/Devil's Apple *Datura stramonium* (T)
Periwinkle Species *Vinca spp.*
Loosestrife, Purple *Lythrum salicaria* (B) (N)
Scotch Broom *Cytisus scoparius*
St. John's Wort *Hypericum perforatum* (B)
Tansy Ragwort *Senecio jacobaea* (B) (N)

CONTROL

Established infestations common and widespread throughout the Coastal ISC region.
Focus control in high value conservation areas.
Use biological control, if available, on a landscape scale.

Plant Species

Tansy Ragwort *Senecio jacobaea* (B) (N)

Butterfly Bush *Buddleja davidii*
Daphne/Spurge-Laurel *Daphne laureola* (T)
Gorse *Ulex europaeus*
Eurasian Water-milfoil *Myriophyllum spicatum*
Yellow Archangel *Lamiastrum galiobdolon*
Hawkweed,Yellow *Hieracium caespitosum*

Supplemental Notes:

• The above lists has been approved by the Coastal ISC Board and developed in consultation with key land managers in the Coastal ISC service area a the annual operational planning meeting (February 2016).

• The above lists reflect the entire Coastal ISC area. The placement of a species into a category at the landscape level is very likely to be different from a placement of a species into a category at the local level.

• Provincial EDRR - provincially significant and are to be reported immediately to the province through Report-A-Weed.

• Regional EDRR - regionally significant species and to be reported to the Coastal ISC.

** BC Proposed Prohibited Weeds (PDF, February 2015)

(B) = Invasive plants with biological control agents available

(T) = Invasive plants which pose potential human health and safety hazards

(N) = BC Weed Control Act, Regulated Noxious Weed in BC