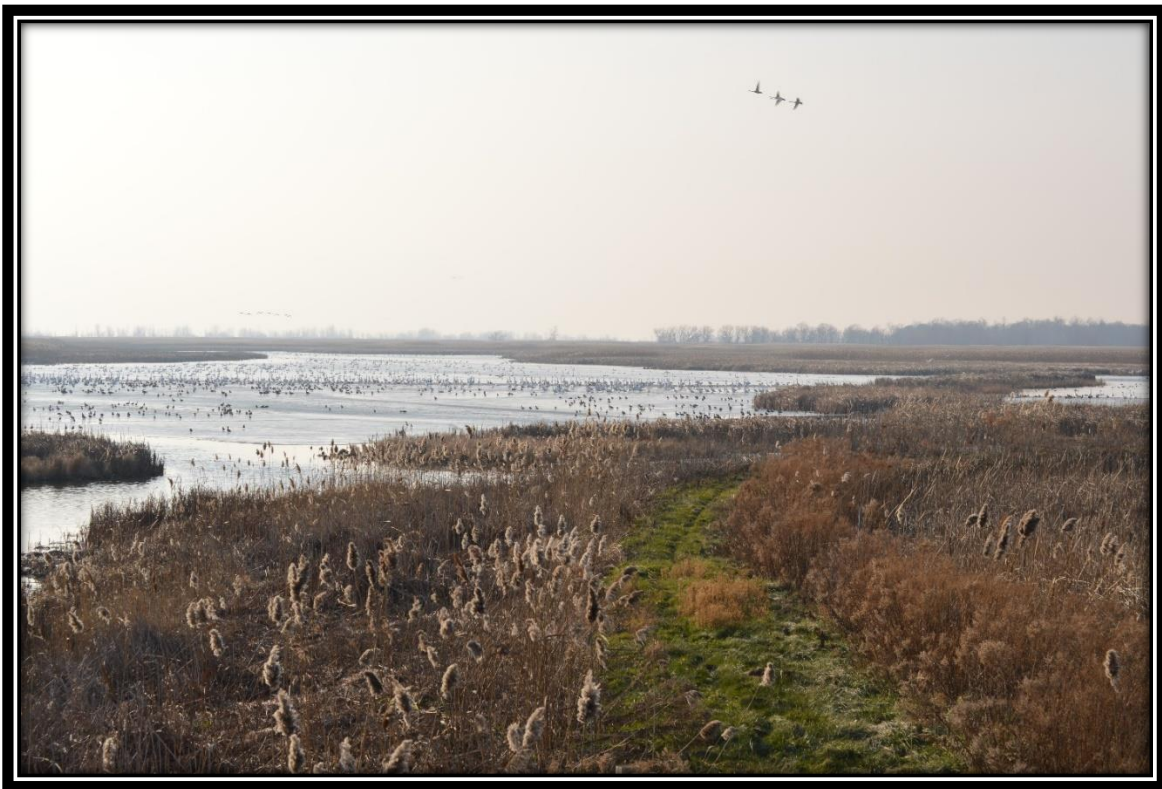


Long Point Walsingham Forest: Conservation Implementation Plan (2018-2026)



Cover Photo: Big Creek Marsh, © Jason Read, 2018

Version 2022-2023

Prepared by Britney MacLeod, Samantha Calabrese and Lee Voisin, Environment and Climate Change Canada – Canadian Wildlife Service.

Acknowledgements:

We recognize that the Long Point Walsingham Forest Priority Place is situated upon the Treaty Lands and Territory of the Mississaugas of the Credit First Nation and the Traditional Territory of the Haudenosaunee and Huron-Wendat. We recognize and acknowledge the continued impacts of colonialism and residential schools that disrupted Indigenous Peoples relationships with the lands. Southern Ontario is home to many First Nations and Métis Peoples and through this acknowledgement it is our intent to show respect for the people who have stewarded these lands and waters since time immemorial and those who continue to care for them. Through this acknowledgement, we are reminded of our connection to this land and commit ourselves to learn and work together in the spirit of reconciliation.

The Long Point Walsingham Forest Priority Place is part of the Norfolk County community. It is a working landscape that provides for the community. Agricultural livelihoods are an important value which is recognized and considered through the Priority Place work.

Many people contributed to the conceptualization and writing of the Long Point Walsingham Forest Conservation Implementation Plan and its numerous iterations and updates from 2018-2022. The Long Point Walsingham Forest Situation Analysis contains a complete list of contributors. The following organizations are acknowledged and thanked for their significant input into the completion and writing of the implementation plan:

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- Long Point World Biosphere Reserve Foundation
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Tallgrass Ontario

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1. INTRODUCTION

The Long Point Walsingham Forest (LPWF) Conservation Implementation Plan (CIP) was developed using the science-based adaptive management framework Open Standards for the Practice of Conservation (Conservation Standards) (Figure 1). It outlines the goals, strategies, actions and objectives for improving and monitoring the viability of 6 conservation targets in the LPWF Priority Place.

The CIP is an evergreen plan, developed with input from over 23 organizations and maintained within the Miradi Share Software. As part of the adaptive management process, it has been refined over the course of 4 years, in three iterations (2019, 2020 and 2023).

The associated Situation Analysis provides important context for the CIP and should be read first. It contains detailed information on the LPWF Priority Place, conservation targets, viability assessment and threat rating.



FIGURE 1. CONSERVATION STANDARDS ADAPTIVE MANAGEMENT CYCLE.

2. SITUATION ANALYSIS SUMMARY

2.1 Geographic Boundary

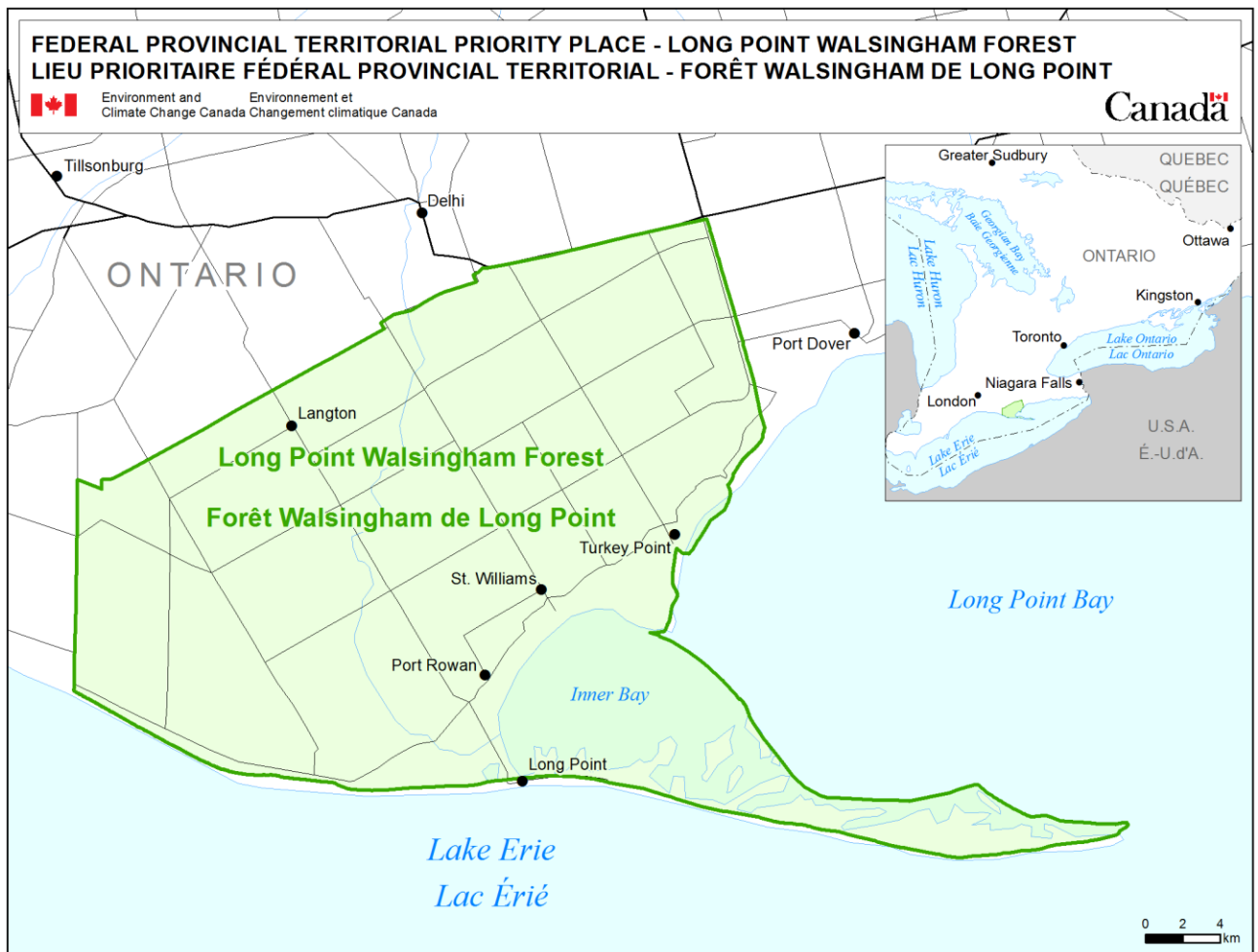


FIGURE 2. LONG POINT WALSINGHAM FOREST PRIORITY PLACE.

2.2 Vision

Healthy, resilient and connected ecosystems that support biodiversity, productive landscapes and a thriving community.

2.3 Conservation Targets

The LPWF CIP aims to conserve and improve the viability of 6 conservation targets. These targets form the basis for setting goals, identifying actions and measuring effectiveness in the CIP (Figure 3). The LPWF Priority Place conservation targets are:



Beaches and coastal dunes



Amphibians and reptiles



Coastal wetlands and inner bay



Watercourses and riparian areas



Forests and treed swamps



Open country

PHOTO CREDITS. ENVIRONMENT AND CLIMATE CHANGE CANADA: BEACHES AND COASTAL DUNES, AMPHIBIANS AND REPTILES, WATERCOURSES AND RIPARIAN AREAS, AND FORESTS AND TREED SWAMPS. NATURE CONSERVANCY OF CANADA, 2020: OPEN COUNTRY, AND COASTAL WETLANDS AND INNER BAY.

2.4 Human Well-being Targets and Ecosystem Services

Human well-being targets are affected by the provisioning of ecosystem services associated with conservation targets, such as livelihoods, health, and security. Ecosystem services are the benefits that well-conserved conservation targets may provide to humans.

In order to better understand how the conservation of ecosystems and species affects human well-being in LPWF, human well-being targets were identified as follows: 1) Agricultural livelihoods; and 2) Connection to nature. The ecosystem services provided by the conservation targets in LPWF include: water quality and quantity, climate regulation, flood control, recreation, erosion control, food, pollination, and recreation.

2.5 Viability Assessment

Viability assessment is a method for measuring the status of a conservation target. Table 1 summarizes the overall results of the assessment. The detailed viability assessment can be found in the Situation Analysis.








TABLE 1. VIABILITY ASSESSMENT SUMMARY.

Conservation Target	Overall Status	Key Ecological Attribute		Indicator	Status
Forest and Treed Swamps	Fair	Size	Interior forest habitat	Number of large forest patches	Good
		Size	Ecosystem extent	Percent forest cover	Poor
		Condition	Presence/abundance of forest interior bird communities	Number of individuals of Acadian Flycatchers and Cerulean Warblers	Fair
		Landscape Context	Connectivity of forest patches	Amount of resistance to movement	Good
Coastal Wetlands and Inner Bay	Good	Size	Ecosystem extent	Percent coastal wetland cover	Good
		Condition	Native species composition	Obligate marsh-nesting bird species richness	Good
		Condition	Plant community integrity	Percent <i>Phragmites australis</i> cover	Good
		Landscape Context	Sediment stability and movement	Percent shoreline hardening	Very Good
		Landscape Context	Adjacent natural systems	Percent non-impervious cover within 120 m	Very Good
Beaches and Coastal Dunes	Very Good	Size	Adjacent vegetation	Percent non-impervious surface within 1 km of beach	Good
		Condition	Presence and status of rare plant communities	EO ranks of rare vegetation communities	Very Good
		Landscape Context	Sediment stability and movement	Percent shoreline hardening	Very Good
Watercourses and Riparian Areas	Fair	Size	Habitat integrity	Percent of 30 m buffer (adjacent to watercourses) naturally vegetated	Fair
		Size	Habitat integrity	Percent of 5 m buffer (adjacent to drains) naturally vegetated	Poor
		Condition	Surface water quality	Total phosphorus (mg/L)	Fair
		Landscape Context	Hydrologic regime	Natural flow regime	Fair
Amphibians and Reptiles	Fair	Size	Habitat availability	Extent of habitat identified as having potential to contain biophysical attributes required by nested targets to support one or more life stages (measures as the percent of LPWF)	Good
		Condition	Presence and persistence	Proportion of species assessed by COSEWIC as endangered	Poor
		Landscape Context	Ability to move across the landscape	Road mortality risk - Percent of total suitable habitat intersecting high risk roads	Poor
Open Country	Fair	Size	Ecosystem extent	Number of ha of Open Country communities	Poor
		Condition	Species composition	Open country bird species richness	Good
		Landscape Context	Disturbance regime	Percentage of Open Country habitats managed to maintain early successional stages	UNKNOWN
		Landscape Context	Habitat connectivity	Distance between habitat patches	Fair
		Size	Habitat patch size	Number of patches >5 ha	Poor

2.6 Direct Threats

Direct threats are the human activities that degrade a conservation target. Direct threats to the conservation targets were identified and rated based on scope, severity, and irreversibility (Table 2). The strategies in the CIP are currently focused on the following critical direct threats: invasive species; fire suppression in tallgrass communities; roads; agricultural runoff; logging and wood harvesting; housing and urban areas; and climate change. The detailed threat ratings can be found in the Situation Analysis.

TABLE 2. DIRECT THREAT RATING SUMMARY.

Conservation Targets Direct Threats	Forests and Treed Swamps	Coastal Wetlands and Inner Bay	Watercourses and Riparian Areas	Beaches and Coastal Dunes	Open Country	Amphibians and Reptiles	Summary Threat Rating
 1.1 Housing & Urban Areas	Medium	Low	Not Specified	Medium		Medium	Medium
 1.2 Commercial & Industrial Areas	Low					Medium	Low
 1.3 Tourism & Recreation Areas	Not Specified	Low		Low		Low	Low
 2.1 Annual & Perennial Non-timber Crops			Not Specified			Low	Low
 2.3 Livestock Farming & Ranching						Not Specified	Not Specified
 4.1 Roads	Low	Low	Low	Low	Low	High	Medium
 4.2 Utility & Service Lines							Low

Conservation Targets Direct Threats	Forests and Treed Swamps	Coastal Wetlands and Inner Bay	Watercourses and Riparian Areas	Beaches and Coastal Dunes	Open Country	Amphibians and Reptiles	Summary Threat Rating
 5.1 Hunting & Collecting Terrestrial Animals						Medium	Low
 5.2 Gathering Terrestrial Plants					Low		Low
 5.3 Logging & Wood Harvesting	Medium		Low			Not Specified	Low
 5.4 Fishing & Harvesting Aquatic Resources			Low			Not Specified	Low
 6.1 Recreational Activities	Medium	Low	Low	Medium	Low	Not Specified	Low
 7.1 Fire Suppression	Low				Very High	Not Specified	High
 7.2 Dams & Water Management/Use	Low	Medium	Medium	Not Specified		Not Specified	Medium
 7.3 Shoreline Hardening & Beach Modifications		Low	Not Specified	Medium		Not Specified	Low
 8.1 Invasive Species	Medium	Very High	Medium	High	Medium	Medium	High

Conservation Targets		Forests and Treed Swamps	Coastal Wetlands and Inner Bay	Watercourses and Riparian Areas	Beaches and Coastal Dunes	Open Country	Amphibians and Reptiles	Summary Threat Rating
Direct Threats								
 8.2 Problematic Native Plants & Animals		Low	Medium	Not Specified	Not Specified	Low	Low	Medium
 8.4 Pathogens & Microbes		Not Specified					Low	Low
 9.1 Household Sewage & Urban Waste Water				Low	Low		Not Specified	Low
 9.3 Agricultural Runoff (point & non-point source)		Medium	Medium	Medium	Not Specified		Not Specified	Medium
 9.4 Garbage & Solid Waste		Low	Low	Low	Low		Low	Low
 9.5 Air-borne Pollutants		Low						Low
 9.6 Light & Noise Pollution		Low					Not Specified	Low
 11.3, 11.4, and 11.5 Climate Change and Severe Weather		Low		Low	Low		Not Specified	Low
Threat summary for each Conservation Target		Medium	High	Medium	Medium	High	Medium	High

2.7 Climate Change Adaptation Measures

As climate change has the ability to broadly impact ecological systems, a Climate Change Vulnerability Assessment (CCVA) was conducted for the LPWF Priority Place to assess how climate change will impact the 6 Conservation Targets and exacerbate 4 of the critical threats noted above: invasive species (*Phragmites australis*), roads, fire suppression, and agricultural runoff. The detailed climate vulnerability/risk scenarios for these 4 critical threats can be found in the Situation Analysis.

The CCVA identifies adaptation measures corresponding with each climate scenario. These measures include and align with many existing strategies and actions in the CIP that increase climate change resilience. Additional adaptation measures were developed through stakeholder engagement and literature reviews and have been added to the CIP. Certain adaptation measures address more than one vulnerability/risk scenario.

The CIP does not explicitly describe how the strategies and actions improve climate change resilience. Instead, the potential to reduce the threat of climate change is identified as an outcome of implementing a strategy in the associated results chain.

Box 1. Key Terminology

Results Chain: A diagrammatic tool that depicts a theory of change in a causal (“if-then”) progression of expected short- and long-term intermediate results that lead to long-term conservation results.¹

Theory of Change: Text or diagram that clarifies assumptions about how each strategy supports the achievement of intermediate results and longer-term goals.¹

¹ Conservation Measures Partnership. Open Standards for the Practice of Conservation (2020). Version 4.0.

2.8 Situation Model

The situation model (Figure 3) is a visual diagram of the Situation Analysis. It illustrates: 1) the relationships between contributing factors believed to impact the conservation targets, 2) how human well-being targets are influenced and affected by conservation targets, and 3) the prioritized strategies for addressing challenges and opportunities.

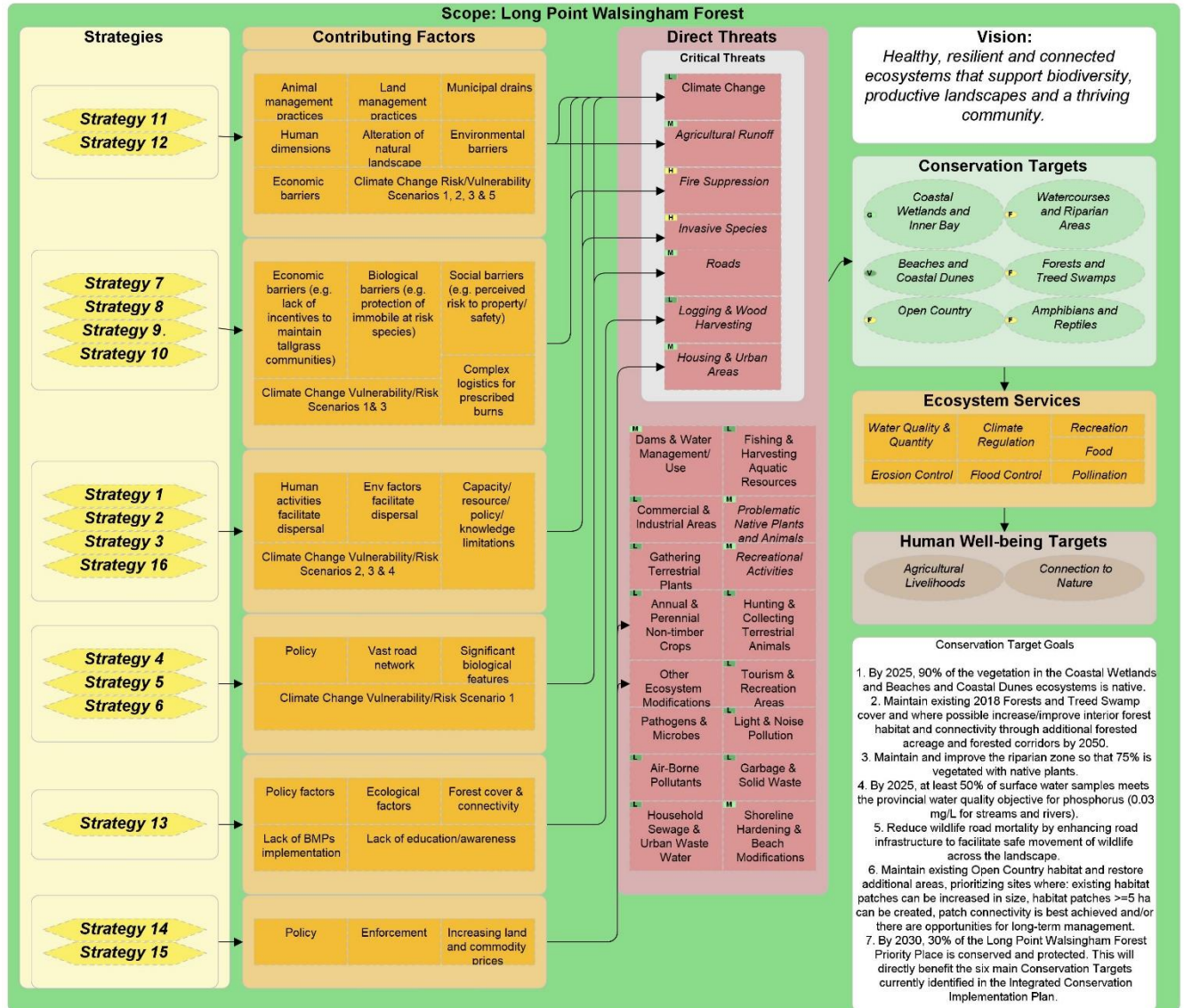


FIGURE 3. SITUATION MODEL FOR LONG POINT WALSHINGHAM FOREST.

3. IMPLEMENTATION PLAN

3.1 Goals

A goal is a formal statement detailing a desired future status of a conservation target. The following goals were developed for each conservation target using key ecological attributes from the viability assessment.

TABLE 3. CONSERVATION TARGET GOALS.

Goals		Conservation Targets
1.	By 2025, 90% of the vegetation in the Coastal Wetlands and Beaches and Coastal Dunes ecosystems is native.	Coastal Wetlands and Inner Bay Beaches and Coastal Dunes
2.	Maintain existing 2018 Forests and Treed Swamps cover and where possible increase/improve interior forest habitat and connectivity through additional forested acreage and forested corridors by 2050.	Forests and Treed Swamps
3.	Maintain and improve the riparian zone so that 75% is vegetated with native plants.	Watercourses and Riparian Areas
4.	By 2025, at least 50% of surface water samples meet the provincial water quality objective for phosphorus (0.03 mg/L for streams and rivers).	Watercourses and Riparian Areas
5.	Reduce wildlife road mortality by enhancing road infrastructure to facilitate safe movement of wildlife across the landscape.	Amphibians and Reptiles
6.	Maintain existing Open Country habitat and restore additional areas, prioritizing sites where: existing habitat patches can be increased in size, habitat patches ≥ 5 ha can be created, patch connectivity is best achieved and/or there are opportunities for long-term management.	Open Country
7.	By 2030, up to 30% of the Long Point Walsingham Forest Priority Place is conserved and protected.	Coastal Wetlands and Inner Bay Beaches and Coastal Dunes Open Country Watercourses and Riparian Areas Forests and Treed Swamps Amphibians and Reptiles

3.2 Strategies, Actions, and Objectives

In order to focus action where it is most needed, seven critical threats were identified: invasive species, fire suppression, roads, agricultural runoff, housing and urban areas, logging and wood harvesting and climate change. The following strategies, actions and objectives address the critical threats to the conservation targets in LPWF necessary to achieve conservation goals.

STRATEGY 1: Plan and conduct site specific management of *Phragmites australis* at the Long Point coastal wetlands.

Benefitting conservation target(s): Coastal Wetlands and Inner Bay, Beaches and Coastal Dunes

Direct threat(s) addressed: Invasive Species

Theory of Change:

The following results chain (Figure 4) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 1. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

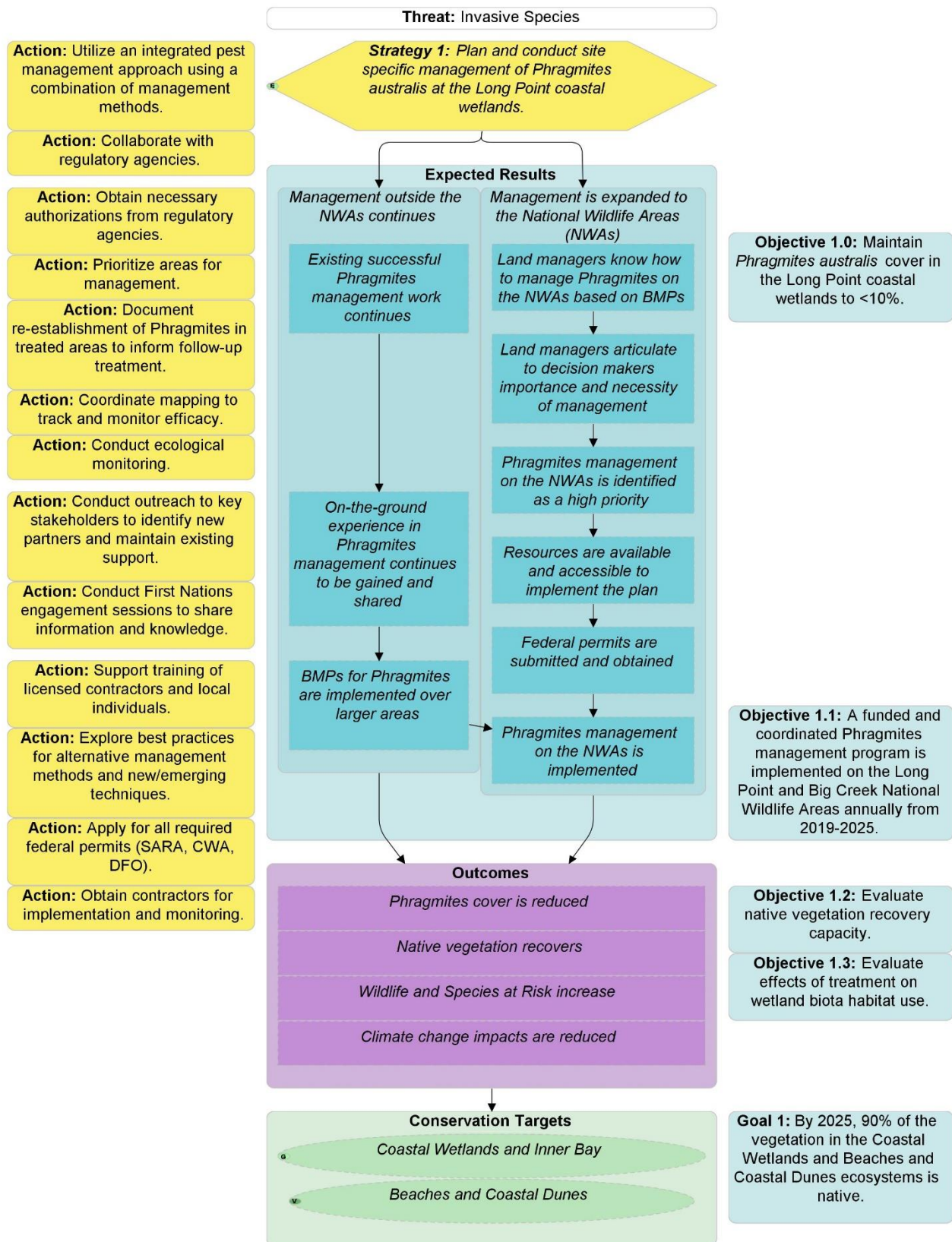


FIGURE 4. STRATEGY 1 - THEORY OF CHANGE.

Actions:

- Utilize an integrated pest management approach using a combination of management methods.
- Collaborate with regulatory agencies.
- Obtain necessary authorizations from regulatory agencies.
- Prioritize areas for management.
- Document re-establishment of phragmites in treated areas to inform follow-up treatment.
- Coordinate mapping to track and monitor efficacy.
- Conduct ecological monitoring.
- Conduct outreach to key stakeholders to identify new partners and maintain existing support.
- Conduct First Nations engagement sessions to share information and knowledge.
- Support training of licensed contractors and local individuals.
- Explore best practices for alternative management methods and new/emerging techniques.
- Apply for all required federal permits (SARA, CWA, DFO).
- Obtain contractors for implementation and monitoring.

Measures of Success:

Objectives	Indicators
1.0: Maintain <i>Phragmites australis</i> cover in the Long Point coastal wetlands to <10%.	<ul style="list-style-type: none"> - # ha habitat improved - % Phragmites cover
1.1: A funded and coordinated Phragmites management program is implemented on the Long Point and Big Creek National Wildlife Areas annually from 2019-2025.	<ul style="list-style-type: none"> - Program established - # ha habitat improved - % change in Phragmites cover based on vegetation plots - % change in Phragmites cover based on satellite imagery - % Phragmites cover
1.2: Evaluate native vegetation recovery capacity.	<ul style="list-style-type: none"> - % native cover - Change in estimated # of Swamp Rose-Mallow stems before and after treatment - % native seedlings
1.3: Evaluate effects of treatment on wetland biota habitat use.	<ul style="list-style-type: none"> - Relative abundance of turtles in treated vs untreated areas - Change in habitat use of turtles before and after treatment - Richness of marsh birds in treated vs untreated areas - Richness of anurans in treated vs untreated areas - % conversion of Phragmites to fish habitat

STRATEGY 2: Plan and conduct *Phragmites australis* management within the Big Creek watershed to reduce spread into the Long Point coastal wetlands.

Benefitting Conservation Target(s): Coastal Wetlands and Inner Bay, Beaches and Coastal Dunes, Watercourses and Riparian Areas, Forests and Treed Swamps

Direct Threat(s) Addressed: Invasive Species

Theory of Change:

The following results chain (Figure 5) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 2. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

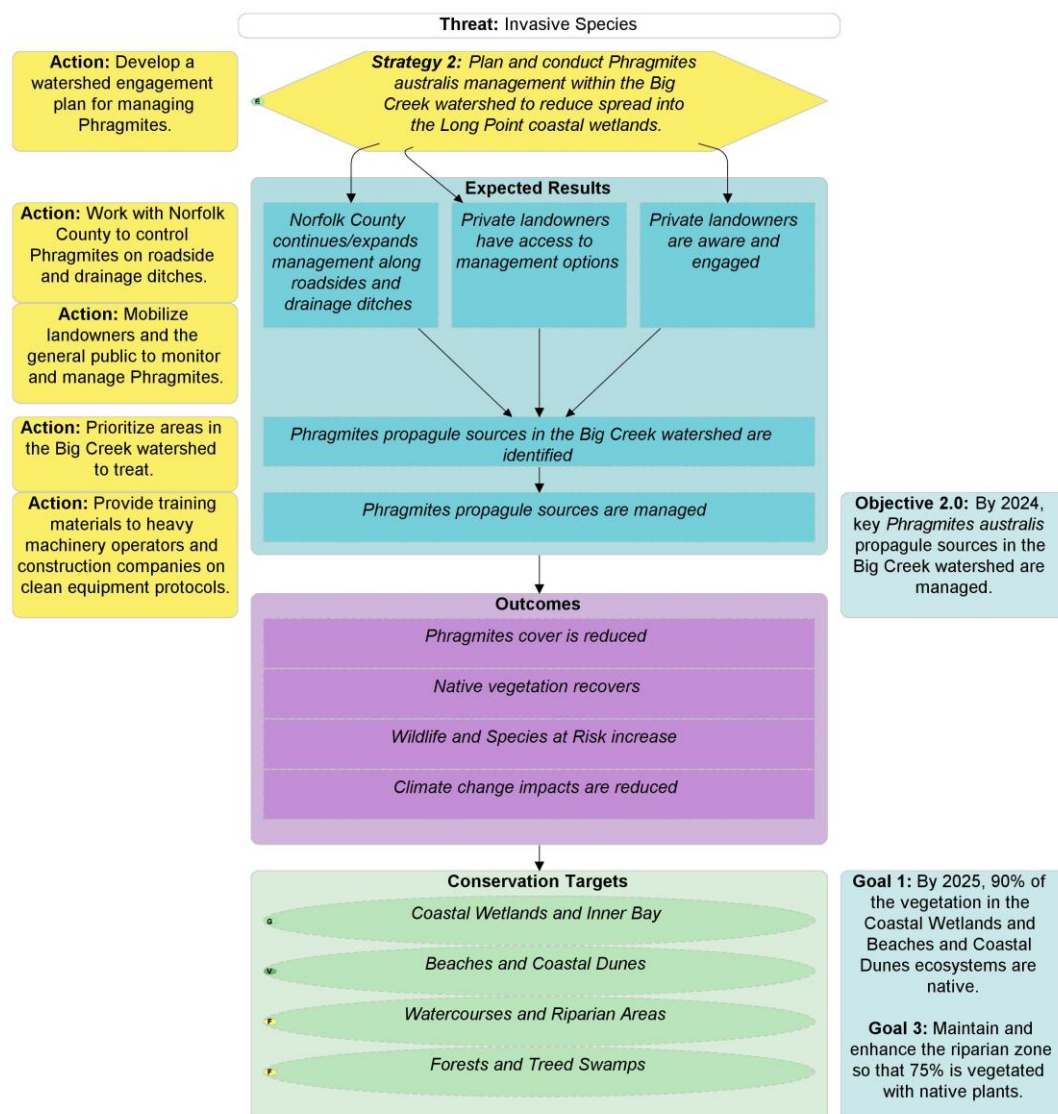


FIGURE 5. STRATEGY 2 - THEORY OF CHANGE.

Actions:

- Develop a watershed engagement plan for managing Phragmites.
- Work with Norfolk County to control Phragmites on roadside and drainage ditches.
- Mobilize landowners and the general public to monitor and manage Phragmites.
- Prioritize areas in the Big Creek watershed to treat.
- Provide training materials to heavy machinery operators and construction companies on clean equipment protocols.

Measures of Success:

Objectives	Indicators
2.0: By 2024, key <i>Phragmites australis</i> propagule sources in the Big Creek watershed are managed.	<ul style="list-style-type: none">- # ha improved- # km improved- # landowners participating in management- # individuals trained to manage Phragmites

STRATEGY 3: Develop policy guidance on invasive species management that supports ecosystem restoration for Species at Risk.

Benefitting Conservation Target(s): Coastal Wetlands and Inner Bay, Beaches and Coastal Dunes

Direct Threat(s) Addressed: Invasive Species

Theory of Change:

The following results chain (Figure 6) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 3. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

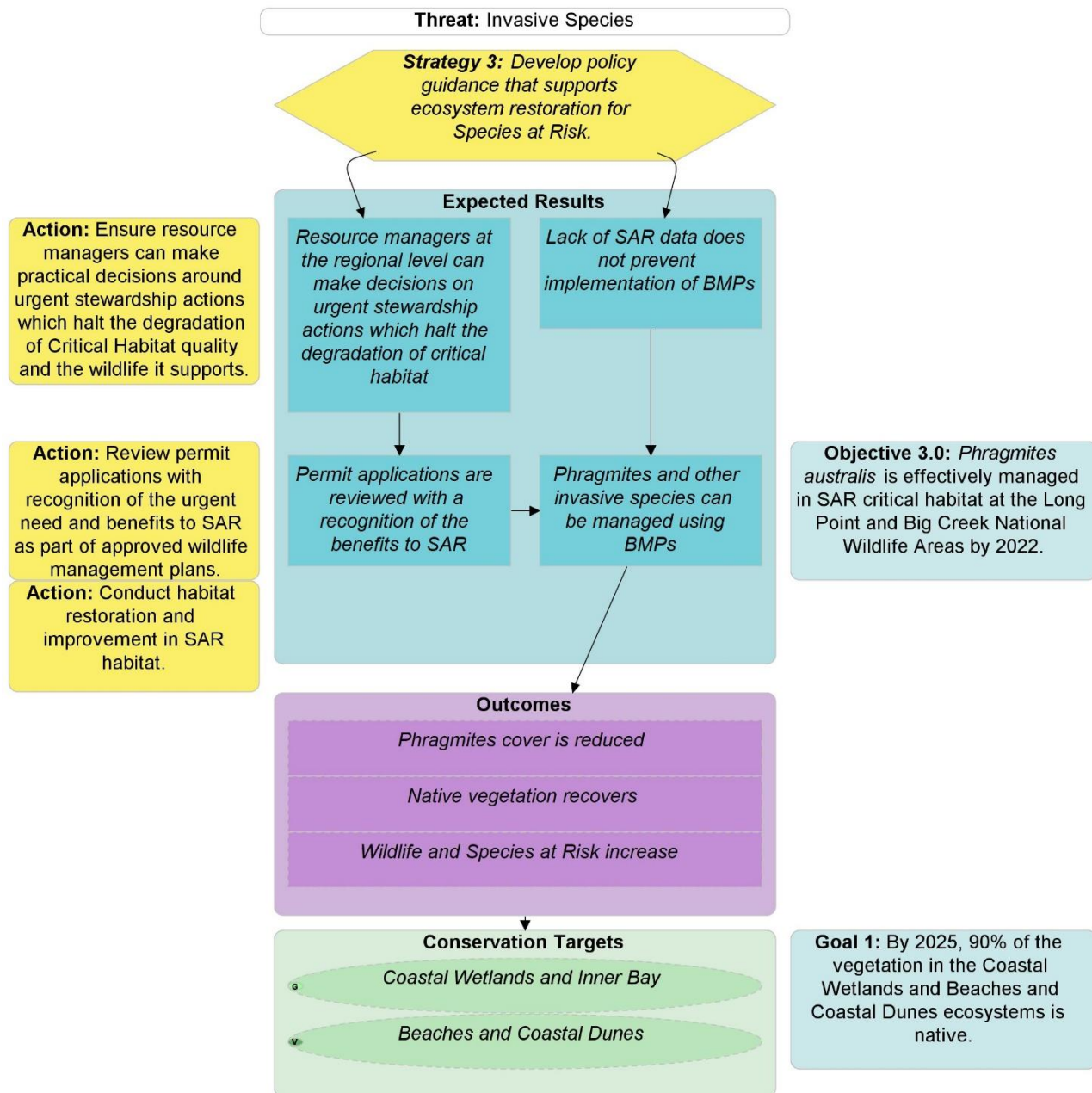


FIGURE 6. STRATEGY 3 - THEORY OF CHANGE.

Actions:

- Ensure resource managers can make practical decisions around urgent stewardship actions which halt the degradation of Critical Habitat quality and the wildlife it supports.
- Review permit applications with recognition of the urgent need and benefits to SAR as part of approved wildlife management plans.
- Conduct habitat restoration and improvement in SAR habitat.

Measures of Success

Objectives	Indicators
3.0: <i>Phragmites australis</i> is effectively managed in SAR critical habitat at the Long Point and Big Creek National Wildlife Areas by 2022.	- # ha of SAR critical habitat improved

STRATEGY 4: Increase awareness on the threat of roads to wildlife and engage the local community in stewardship efforts.

Benefitting Conservation Target(s): Amphibians and Reptiles

Direct Threat(s) Addressed: Roads

Theory of Change:

The following results chain (Figure 7) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 4. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

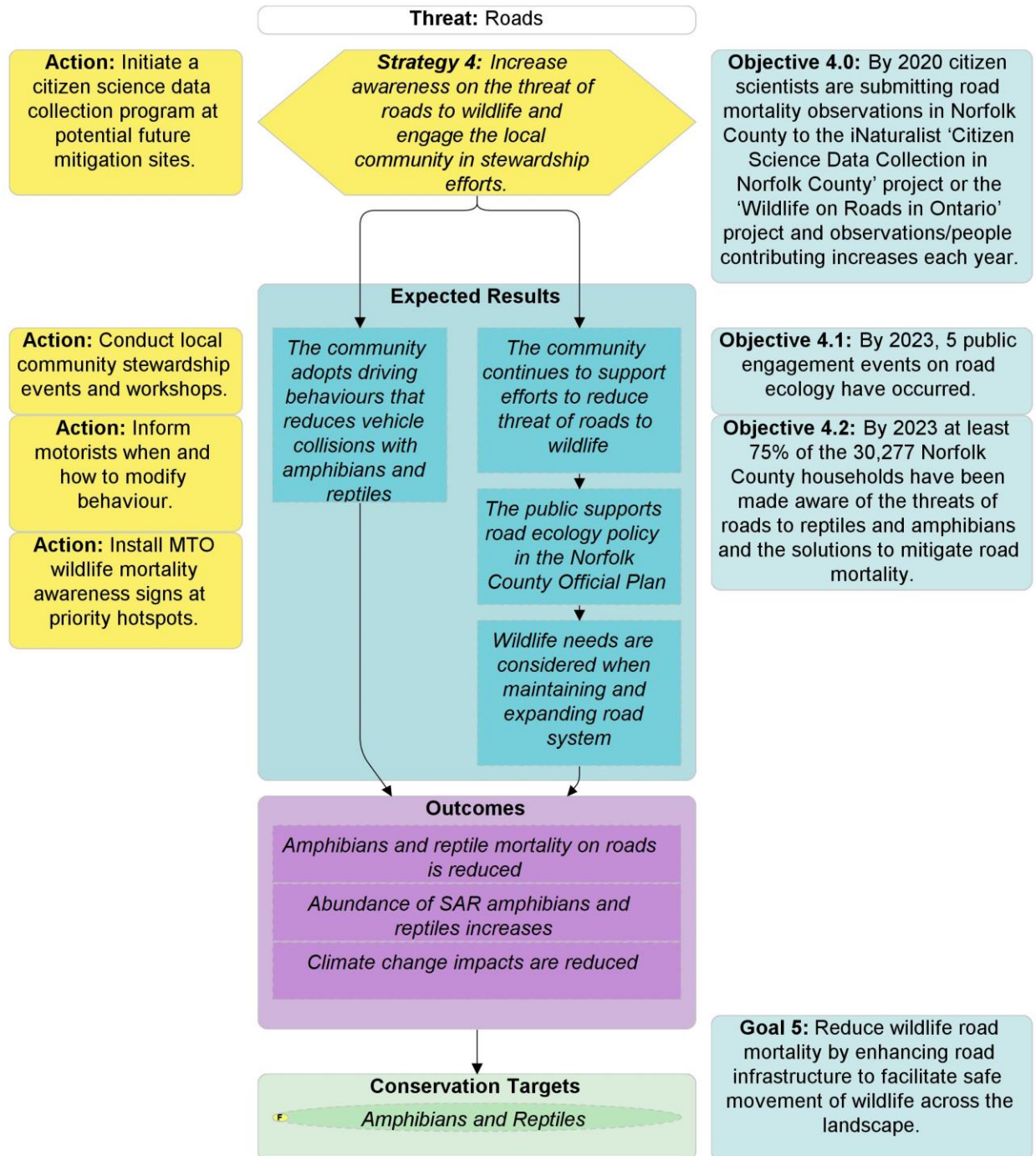


FIGURE 7. STRATEGY 4 - THEORY OF CHANGE.

Actions:

- Initiate a citizen science data collection program at potential future mitigation sites.
- Conduct local community stewardship events and workshops.
- Inform motorists when and how to modify behaviour.
- Install MTO wildlife mortality awareness signs at priority hotspots.

Measures of Success:

Objectives	Indicators
4.0: By 2020, citizen scientists are submitting road mortality observations in Norfolk County to the iNaturalist 'Citizen Science Data Collection in Norfolk County' project or the 'Wildlife on Roads in Ontario' project and observations/people contributing increases each year.	<ul style="list-style-type: none">- # people (citizen scientists) conducting road mortality surveys on Norfolk County roads- # road mortality observations submitted to the iNaturalist 'Citizen Science Data Collection in Norfolk County' project or the 'Wildlife on Roads in Ontario' project (in Norfolk County) to inform future management
4.1: By 2023, 5 public engagement events on road ecology have occurred.	<ul style="list-style-type: none">- # public engagement events- # attendees at each event
4.2: By 2023, at least 75% of the 30,277 Norfolk County households have been made aware of the threats of roads to reptiles and amphibians and the solutions to mitigate road mortality.	<ul style="list-style-type: none">- # households and/or residents reached- # Ministry of Transportation Ontario wildlife mortality awareness signs posted at priority hotspots

STRATEGY 5: Incorporate road ecology mitigation policy and guidelines in the Norfolk County Official Plan and Road Asset Management Plan.

Benefitting Conservation Target(s): Amphibians and Reptiles

Direct Threat(s) Addressed: Roads

Theory of Change:

The following results chain (Figure 8) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 5. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

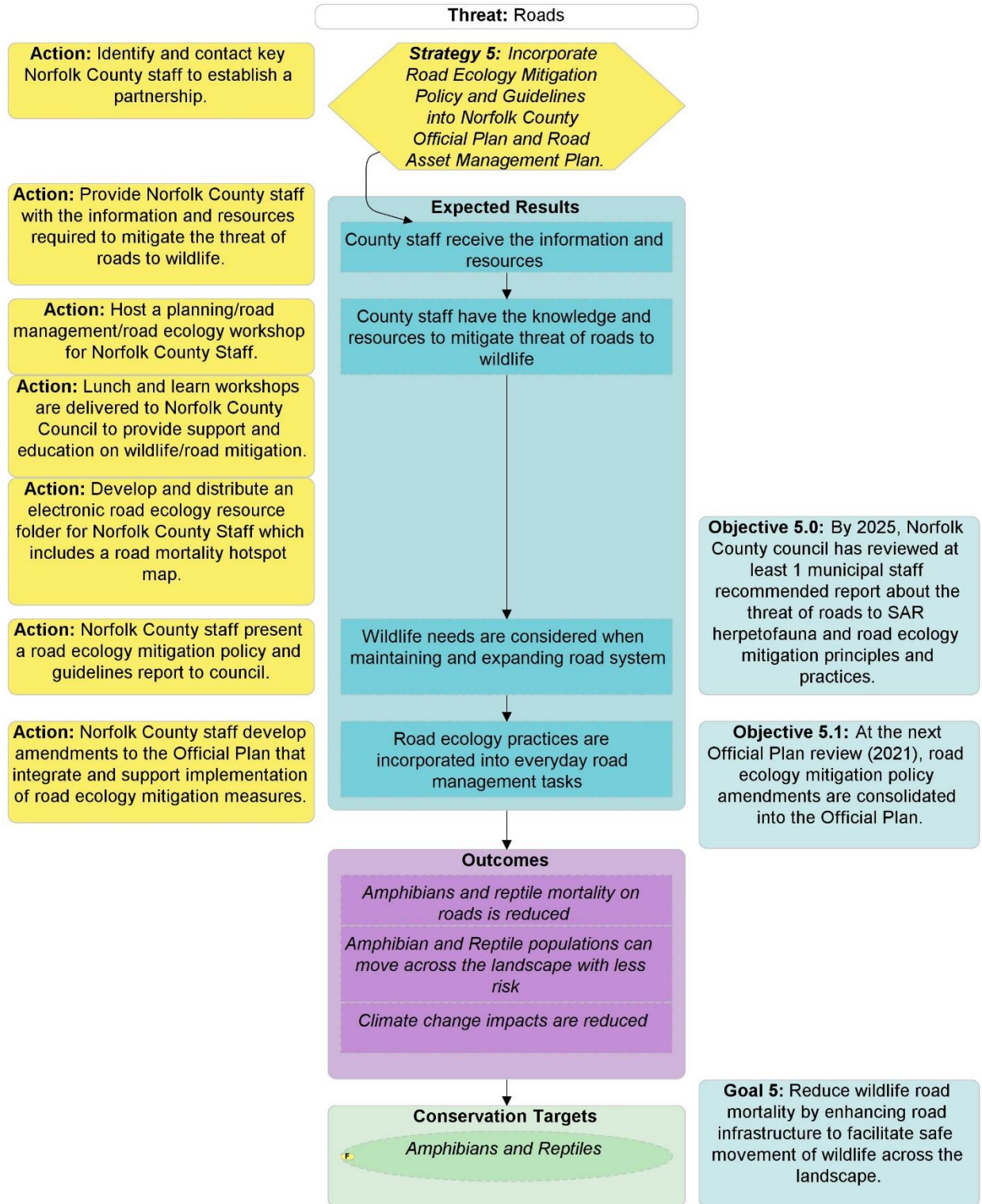


FIGURE 8. STRATEGY 5 - THEORY OF CHANGE.

Actions:

- Identify and contact key Norfolk County staff to establish a partnership.
- Provide Norfolk County staff with the information and resources required to mitigate the threat of roads to wildlife.
- Host a planning/road management/road ecology workshop for Norfolk County Staff.
- Lunch and learn workshops are delivered to Norfolk County Council to provide support and education on wildlife/road mitigation.
- Develop and distribute an electronic road ecology resource folder for Norfolk County Staff which includes a road mortality hot spot map.
- Norfolk County staff present a road ecology mitigation policy and guidelines report to council.
- Norfolk County staff develop amendments to the Official Plan that integrate and support implementation of road ecology mitigation measures.

Measures of Success:

Objectives	Indicators
5.0: By 2025, Norfolk County council has reviewed at least 1 municipal staff recommended report about the threat of roads to SAR herpetofauna and road ecology mitigation principles and practices.	- # reports reviewed
5.1: At the next Official Plan review (2021), road ecology mitigation policy amendments are consolidated into the Official Plan.	- An updated Norfolk County Official Plan which includes road ecology mitigation policy amendments.

STRATEGY 6: Install and maintain dedicated road mitigation infrastructure for Species at Risk amphibians and reptiles.

Benefitting Conservation Target(s): Amphibians and Reptiles

Direct Threat(s) Addressed: Roads

Theory of Change:

The following results chain (Figure 9) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 6. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

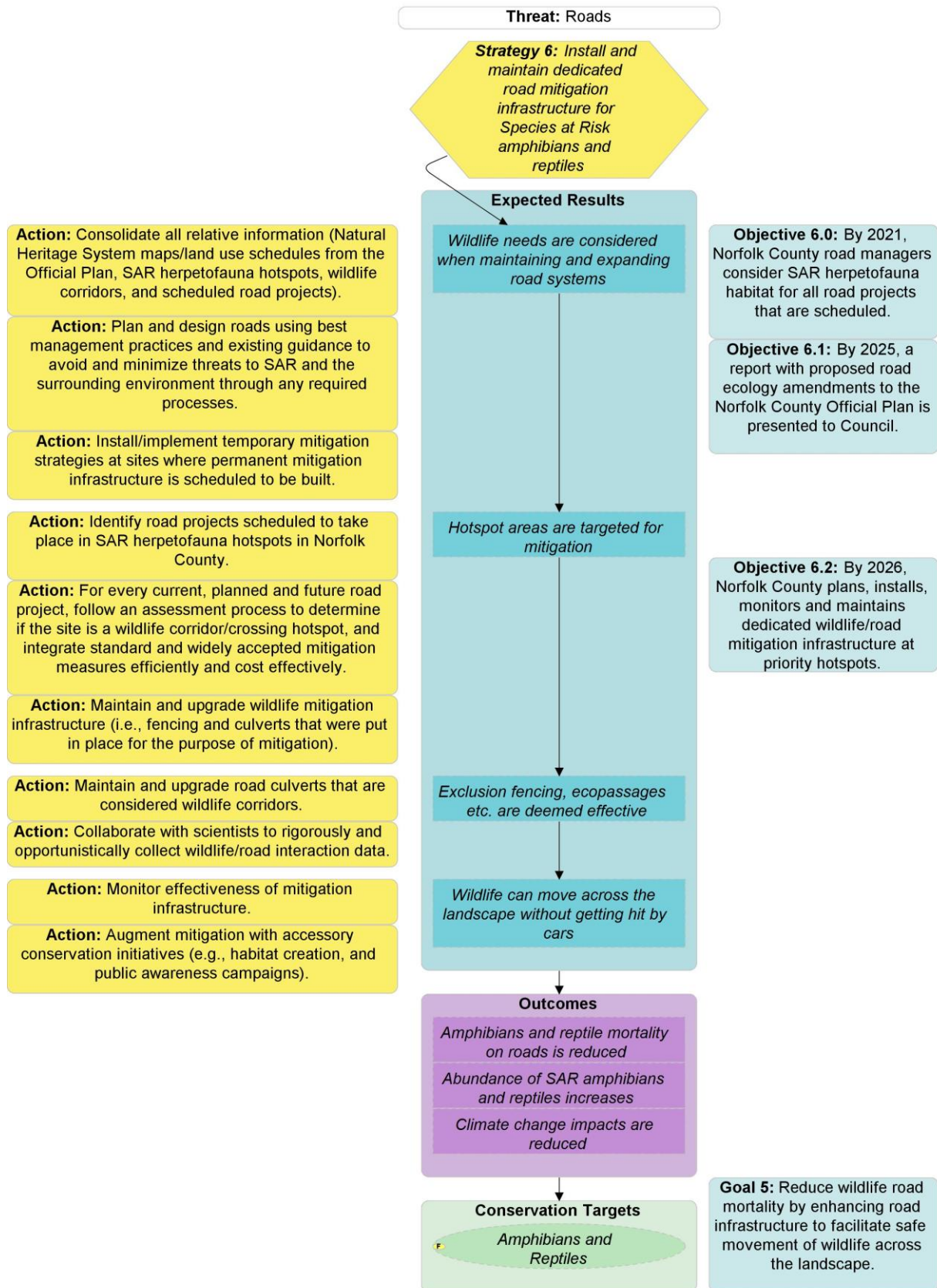


FIGURE 9. STRATEGY 6 - THEORY OF CHANGE.

Actions:

- Consolidate all relative information (Natural Heritage System maps/land use schedules from the Official Plan, SAR herpetofauna hotspots, wildlife corridors, and scheduled road projects).
- Plan and design roads using best management practices and existing guidance to avoid and minimize threats to SAR and the surrounding environment through any required processes.
- Install/implement temporary mitigation strategies at sites where permanent mitigation infrastructure is scheduled to be built.
- Identify road projects scheduled to take place in SAR herpetofauna hotspots in Norfolk County.
- For every current, planned and future road project, follow an assessment process to determine if the site is a wildlife corridor/crossing hotspot, and integrate standard and widely accepted mitigation measures efficiently and cost effectively as required.
- Maintain and upgrade wildlife mitigation infrastructure (i.e., fencing and culverts that were put in place for the purpose of mitigation).
- Maintain and upgrade road culverts that are considered wildlife corridors.
- Collaborate with scientists to rigorously and opportunistically collect wildlife/road interaction data.
- Monitor effectiveness of mitigation infrastructure.
- Augment mitigation with accessory conservation initiatives (e.g., habitat creation, and public awareness campaigns).

Measures of Success:

Objectives	Indicators
6.0: By 2021, Norfolk County road managers consider SAR herpetofauna habitat for all road projects that are scheduled.	<ul style="list-style-type: none">- % road project proposals that include an assessment of the potential for herpetofauna road mortality- % projects include considerations for SAR herpetofauna
6.1: By 2025, a report with proposed road ecology amendments to the Norfolk County Official Plan is presented to council.	<ul style="list-style-type: none">- Road ecology amendments to the Norfolk County Official Plan are completed- # presentations to Council on road ecology amendments
6.2: By 2026, Norfolk County plans, installs, monitors and maintains dedicated wildlife/road mitigation infrastructure at priority hotspots.	<ul style="list-style-type: none">- # wildlife road mitigation infrastructure projects being maintained and/or implemented at priority SAR herpetofauna hotspots- # projects that are inspected/ repaired per year- # projects for which surveys are conducted to measure effectiveness in reducing road mortality

STRATEGY 7: Maintain a geospatial database for tallgrass habitat with information on management and monitoring activities.

Benefitting Conservation Target(s): Open Country

Direct Threat(s) Addressed: Fire Suppression in Tallgrass Communities

Theory of Change:

The following results chain (Figure 10) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 7. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

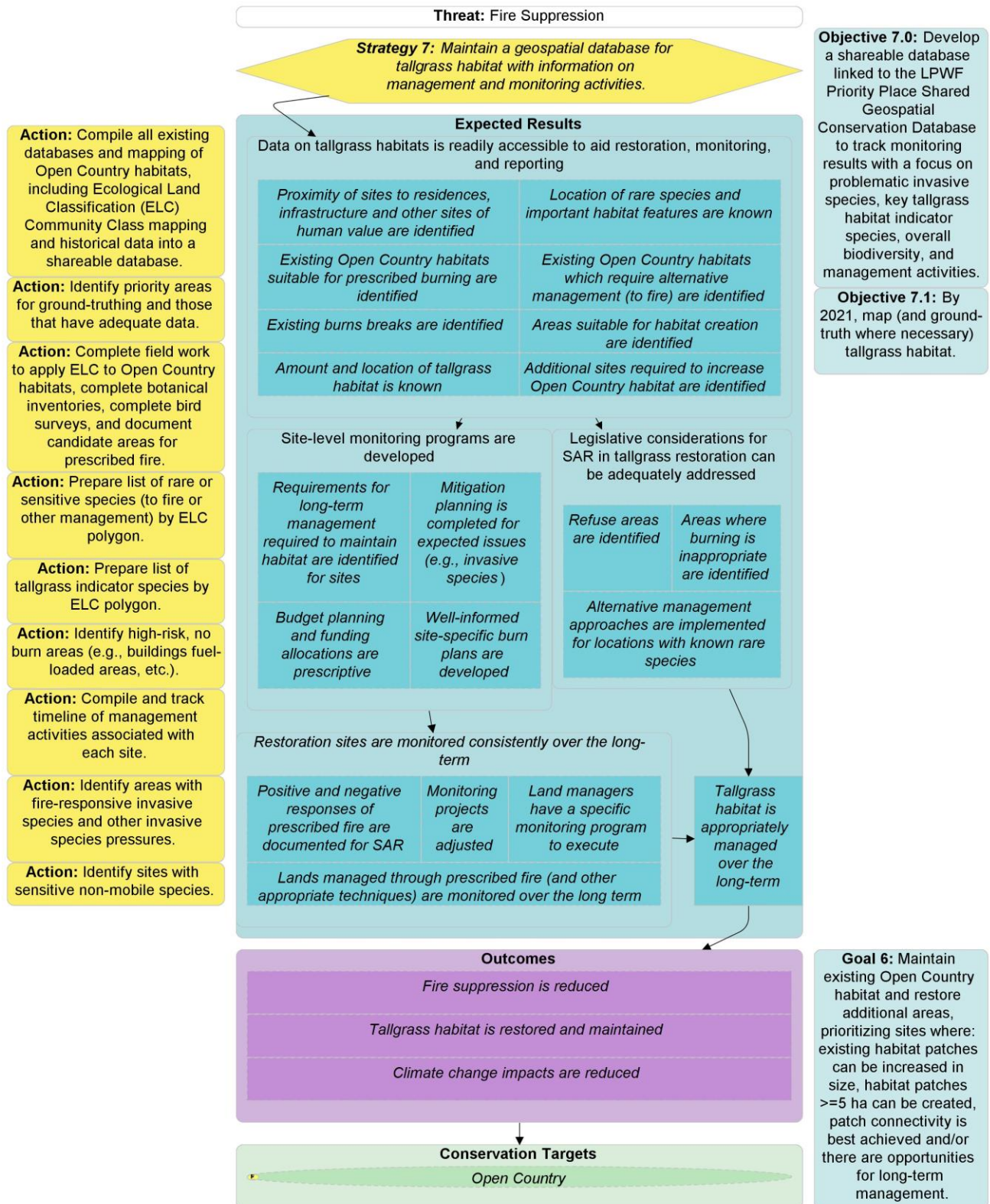


FIGURE 10. STRATEGY 7 - THEORY OF CHANGE.

Actions:

- Compile all existing databases and mapping of Open Country habitats, including Ecological Land Classification (ELC) Community Class mapping and historical data into a shareable database.
- Identify priority areas for ground-truthing and those that have adequate data.
- Complete field work to apply ELC to Open Country habitats, complete botanical inventories, complete bird surveys, and document candidate areas for prescribed fire.
- Prepare list of rare or sensitive species (to fire or other management) by ELC polygon.
- Prepare list of tallgrass indicator species by ELC polygon.
- Identify high-risk, no burn areas (e.g. buildings, fuel-loaded areas, etc.).
- Compile and track timeline of management activities associated with each site.
- Identify areas with fire-responsive invasive species and other invasive species pressures.
- Identify sites with sensitive non-mobile species.

Measures of Success:

Objectives	Indicators
7.0: Develop a shareable database linked to the LPWF Shared Geospatial Conservation Database to track monitoring results with a focus on problematic invasive species, key tallgrass habitat indicator species, overall biodiversity, and management activities.	- An updated geospatial database for tallgrass habitat is created
7.1: By 2021, map (and ground-truth where necessary) tallgrass habitat.	- Tallgrass habitat is mapped in a geospatial database

STRATEGY 8: Implement a landscape-level Open Country habitat management plan to restore and maintain Open Country habitat on private and public lands.

Benefitting Conservation Target(s): Open Country

Direct Threat(s) Addressed: Fire Suppression in Tallgrass Communities

Theory of Change:

The following results chain (Figure 11) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 8. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

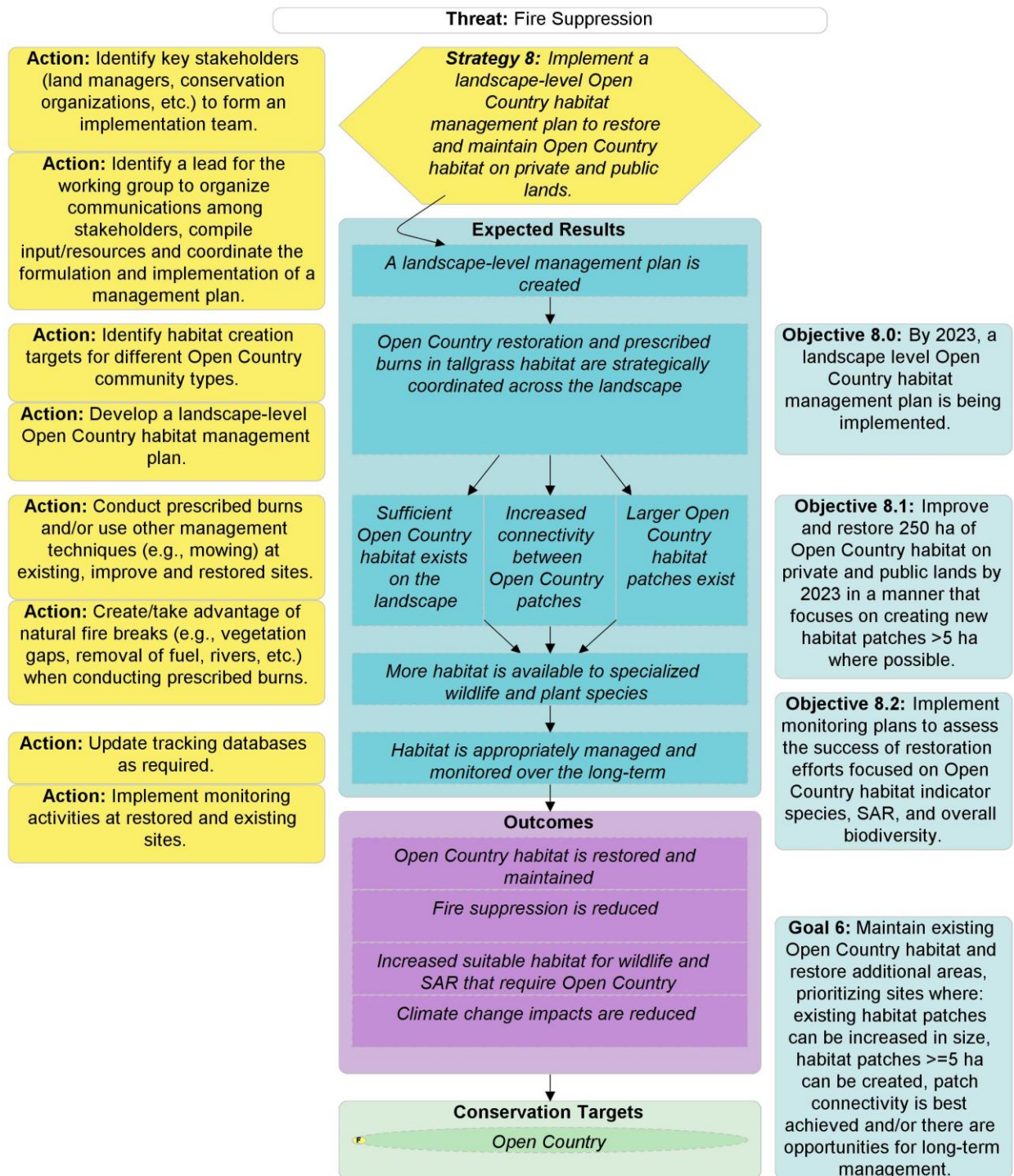


FIGURE 11. STRATEGY 8 - THEORY OF CHANGE.

Actions:

- Identify key stakeholders (land managers, land owners, conservation organizations etc.) to form an implementation team.
- Identify a lead for the working group to organize communication among stakeholders, compile input/resources and coordinate the formulation and implementation of a management plan.

- Identify habitat creation targets for different Open Country community types.
- Develop a landscape-level Open Country habitat management plan which includes:
 - Description and mapping of existing Open Country communities, landscape-level habitat connectivity, and sites suitable for habitat restoration and improvement;
 - Recommendations for the proportion of different successional stages within the landscape (e.g., X number of ha should be maintained as tallgrass prairie, X number of ha should be maintained as savanna, etc.);
 - Identification of high-priority management needs (e.g., sites where canopy closure threatens Open Country communities, invasive species are prevalent, etc.);
 - Identification of site-specific habitat management objectives, prescriptions and cycles (e.g., Property A should be maintained as oak savanna through prescribed fire every 10-15 years);
 - Identification of existing natural and required fire breaks;
 - Identification of existing and desired habitat linkages;
 - Specific areas where Open Country habitat patches can be increased in overall size identified;
 - Recommendations for short and long-term monitoring; and
 - Recommendations for seed collection and assisted dispersal.
- Conduct prescribed burns and/or use other management techniques (e.g., mowing) at existing, improved and restored sites.
- Create/take advantage of natural fire breaks (e.g., vegetation gaps, removal of fuel, rivers etc.) when conducting prescribed burns.
- Update tracking databases (e.g., the LPWF Shared Geospatial Conservation Database) as required.
- Implement monitoring activities at restored and existing sites.

Measures of Success:

Objectives	Indicators
8.0: By 2023, a landscape level Open Country habitat management plan is being implemented.	<ul style="list-style-type: none"> - A landscape level Open Country habitat management plan is created for LPWF Priority Place - # ha covered by a restoration plan
8.1: Improve and restore 250 ha of Open Country habitat on private and public lands by 2023 in a manner that focuses on creating new habitat patches >5 ha where possible.	<ul style="list-style-type: none"> - # projects funded - # ha habitat restored - # ha habitat improved - # new Open Country habitat patches created >5 ha - # ha of tallgrass habitat improved using prescribed burn or other methods for reducing woody encroachment and invasive species
8.2: Implement monitoring plans to assess the success of restoration efforts focused on Open Country habitat indicator species, SAR, and overall biodiversity.	<ul style="list-style-type: none"> - # sites with pre and post restoration data is collected - # sites where a systematic monitoring program has been implemented

STRATEGY 9: Increase public awareness about the importance of Open Country communities and the use of fire as a management tool in maintaining tallgrass habitat.

Benefitting Conservation Target(s): Open Country

Direct Threat(s) Addressed: Fire Suppression in Tallgrass Communities

Theory of Change:

The following results chain (Figure 12) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 9. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

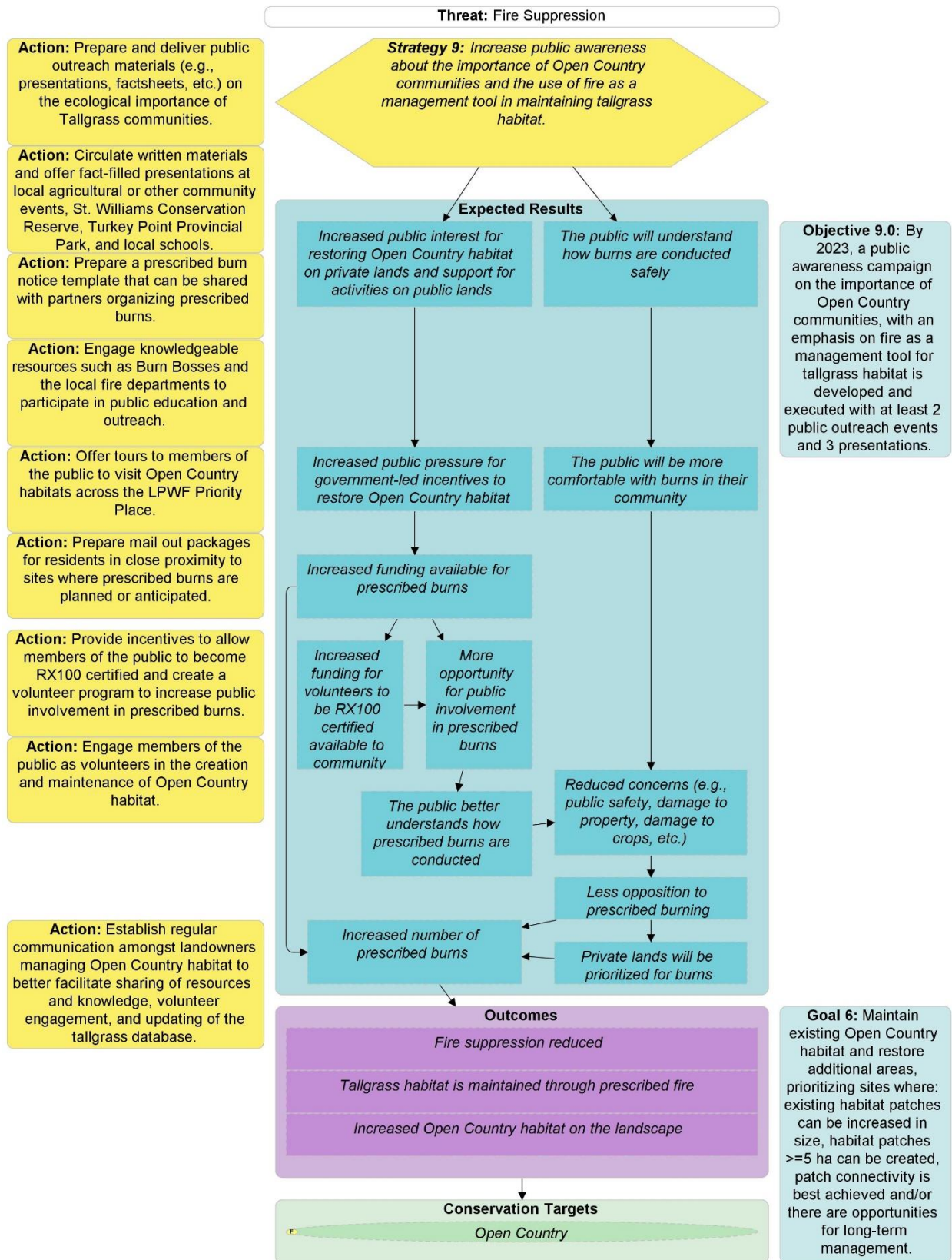


FIGURE 12. STRATEGY 9 - THEORY OF CHANGE.

Actions:

- Prepare and deliver public outreach materials (presentations, factsheets etc.) on the ecological importance of Tallgrass communities.
- Circulate written materials and offer fact-filled presentations at local agricultural or other community events, St. Williams Conservation Reserve, Turkey Point Provincial Park, and local schools.
- Prepare a prescribed burn notice template that can be shared with partners organizing prescribed burns.
- Engage knowledgeable resources such as Burn Bosses and the local fire departments to participate in public education and outreach.
- Offer tours to members of the public to visit Open Country habitats across the LPWF Priority Place.
- Prepare mail out packages for residents in close proximity to sites where prescribed burns are planned or anticipated.
- Provide incentives to allow members of the public to become RX100 certified and create a volunteer program to increase public involvement in prescribed burns.
- Engage members of the public as volunteers in the creation and maintenance of Open Country habitat.

Measures of Success:

Objectives	Indicators
9.0: By 2023, a public awareness campaign on the importance of Open Country communities, with an emphasis on fire as a management tool for Tallgrass habitat, is developed and executed with at least 2 public outreach events and 3 presentations given.	<ul style="list-style-type: none">- # public outreach events- # presentations- # people engaged at events or presentations- # private landowners with Tallgrass communities engaged in targeted outreach

STRATEGY 10: Provide support and opportunities for landowners to manage, restore and maintain Open Country habitat on private lands.

Benefitting Conservation Target(s): Open Country

Direct Threat(s) Addressed: Fire Suppression in Tallgrass Communities

Theory of Change:

The following results chain (Figure 13) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 10. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

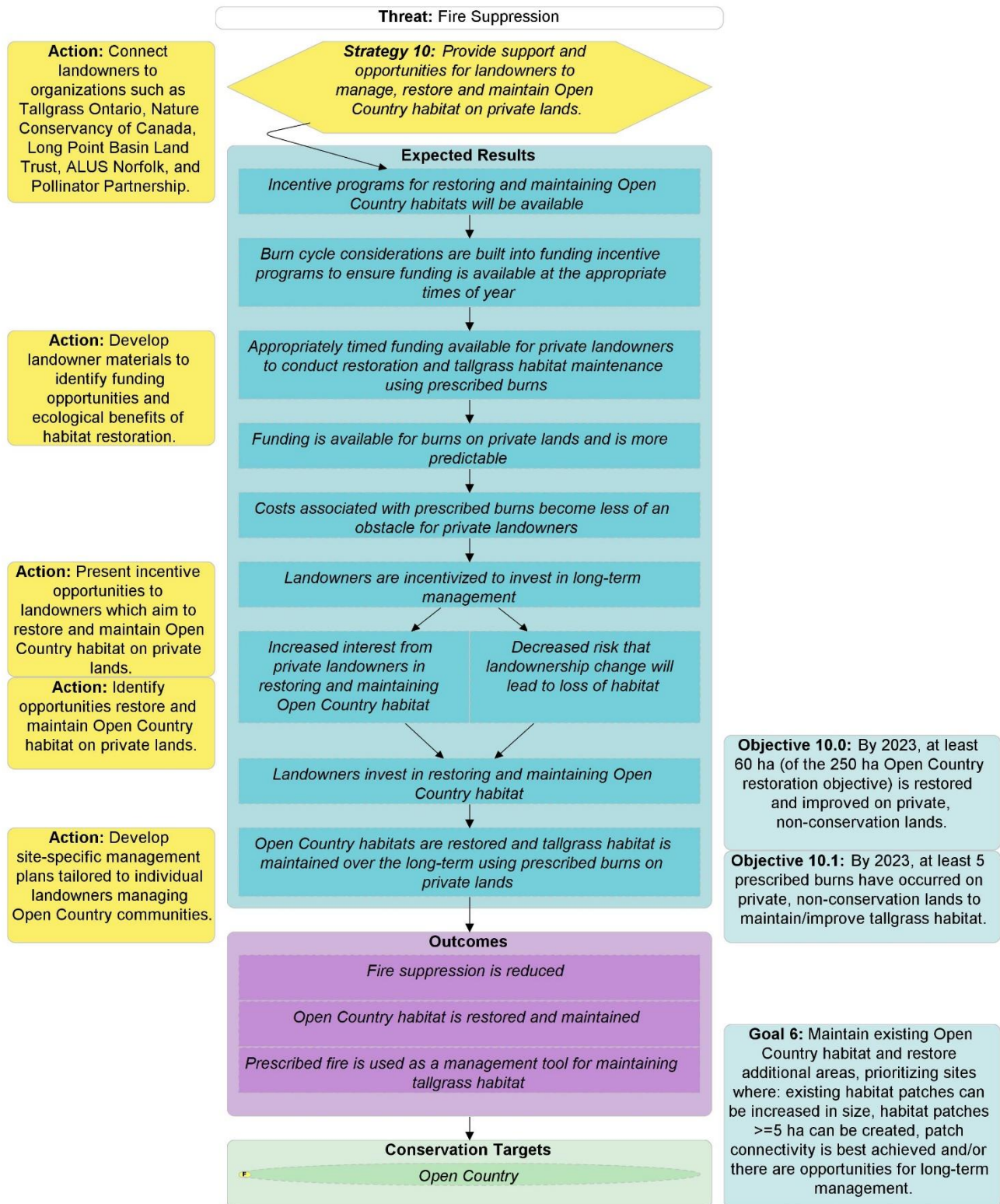


FIGURE 13. STRATEGY 10 - THEORY OF CHANGE.

Actions:

- Connect landowners to organizations such as Tallgrass Ontario, Nature Conservancy of Canada, Long Point Basin Land Trust, ALUS Norfolk, and Pollinator Partnership.
- Develop landowner materials to identify funding opportunities and ecological benefits of habitat restoration.
- Present incentive opportunities to landowners which aim to restore and maintain Open Country habitat on private lands (government led incentive programs, seed give-a-ways, education on habitat creation and maintenance, etc.).
- Identify opportunities to restore and maintain Open Country habitat on private lands.
- Develop site-specific management plans tailored to individual landowners managing Open Country communities.

Measures of Success:

Objectives	Indicators
10.0: By 2023, at least 60 ha (of the 250 ha Open Country restoration objective) is restored and improved on private, non-conservation lands.	<ul style="list-style-type: none"> - # ha habitat restored on private non-conservation lands - # ha habitat improved on private non-conservation lands
10.1: By 2023, at least 5 prescribed burns have occurred on private, non-conservation lands to maintain/improve tallgrass habitat.	<ul style="list-style-type: none"> - # prescribed burns conducted on private non-conservation lands - # ha habitat improved on private non-conservation lands through prescribed burns

STRATEGY 11: Restore, improve, and maintain natural features on agricultural lands.

Benefitting Conservation Target(s): Watercourses and Riparian Areas, Coastal Wetlands and Inner Bay, Open Country, Forests & Treed Swamps, Beaches and Coastal Dunes

Direct Threat(s) Addressed: Agricultural Runoff

Theory of Change:

The following results chain (Figure 14) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 10. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

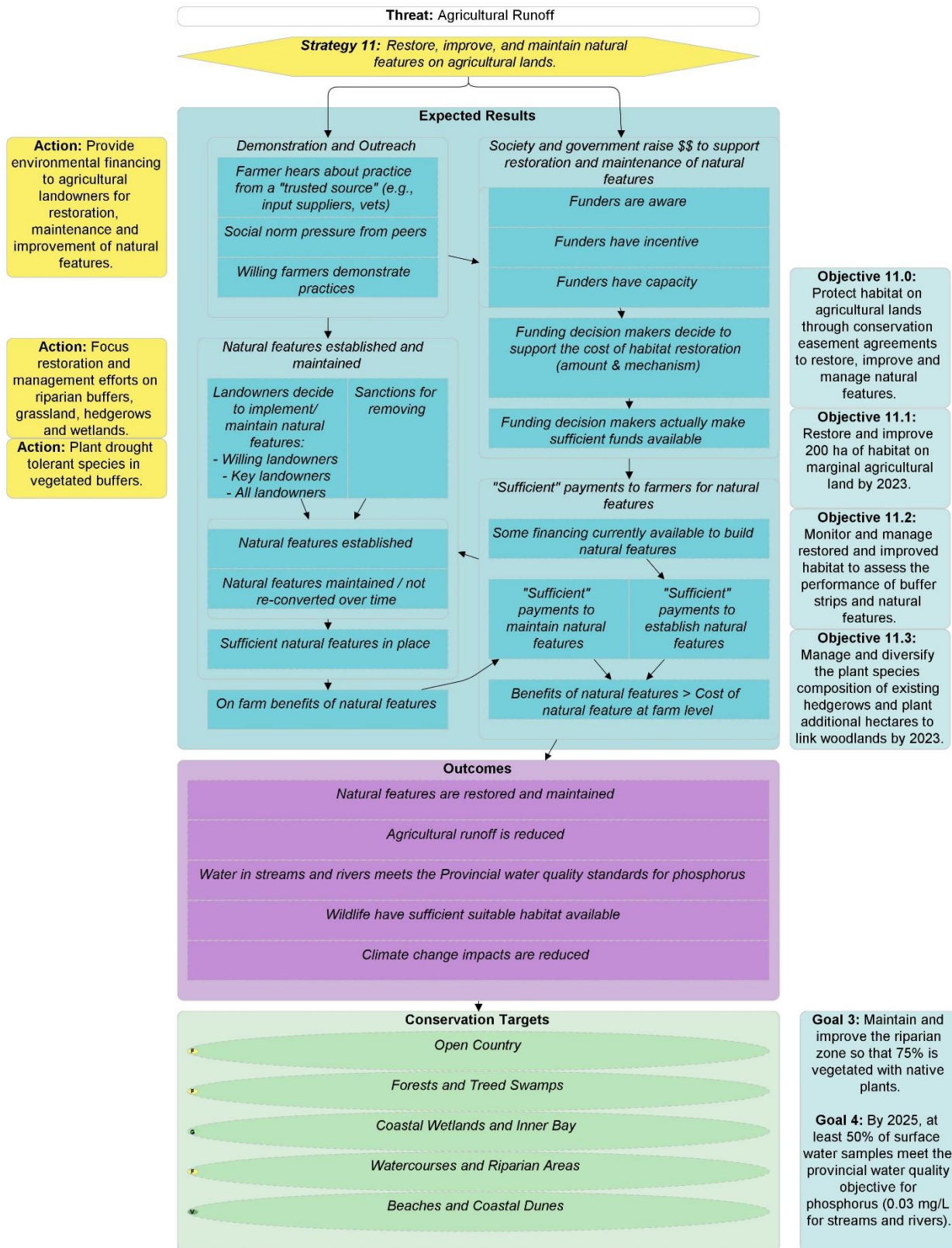


FIGURE 14. STRATEGY 11 - THEORY OF CHANGE.

Actions:

- Provide environmental financing to agricultural landowners for restoration, maintenance, and improvement of natural features.
- Focus restoration and maintenance efforts on riparian buffers, grassland, hedgerows, and wetlands.
- Plant drought tolerant species in vegetated buffers.

Measures of Success:

Objectives	Indicators
11.0: Protect habitat on agricultural land through conservation easement agreements to restore, improve and manage natural features.	- # ha secured
11.1: Restore and improve 200 ha of habitat on marginal agricultural land by 2023.	- # ha habitat restored - # km habitat restored - # ha improved - # km improved
11.2: Monitor and manage restored and improved habitat to assess the performance of buffer strips and natural features.	- # ha monitored - # ha managed
11.3: Manage and diversify the plant species composition of existing hedgerows and plant additional hectares to link woodlands by 2023.	- # ha hedgerows managed - # ha hedgerows planted

STRATEGY 12: Promote the adoption of agricultural BMPs through existing incentive programs.

Benefitting Conservation Target(s): Watercourses and Riparian Areas, Coastal Wetlands and Inner Bay, Open Country, Forests & Treed Swamps, Beaches and Coastal Dunes

Direct Threat(s) Addressed: Agricultural Runoff/Agriculture Sector

Theory of Change:

The following results chain (Figure 15) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 12. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

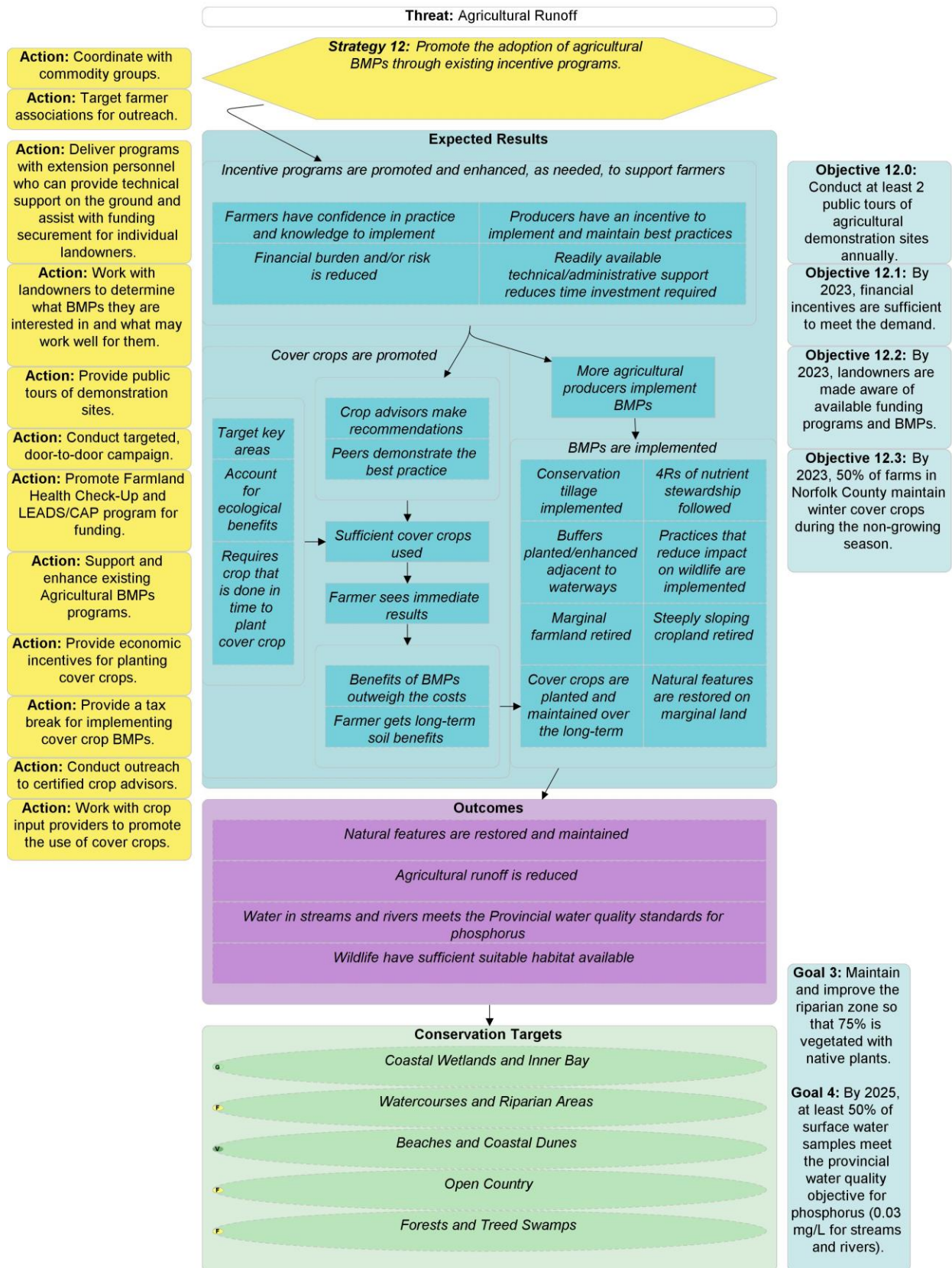


FIGURE 15. STRATEGY 12 - THEORY OF CHANGE.

Actions:

- Coordinate with commodity groups.
- Target farmer associations for outreach.
- Deliver programs with extension personnel who can provide technical support on the ground and assist with funding securement for individual landowners.
- Work with landowners to determine what BMPs they are interested in and what may work well for them.
- Provide public tours of demonstration sites.
- Conduct targeted, door-to-door campaign.
- Promote Farmland Health Check-Up and LEADS/CAP program for funding.
- Support and enhance existing Agricultural BMP programs.
- Provide economic incentives for planting cover crops.
- Provide a tax break for implementing cover crop BMPs.
- Conduct outreach to certified crop advisors.
- Work with crop input providers to promote the use of cover crops.

Measures of Success:

Objectives	Indicators
12.0: Conduct at least 2 public tours of agricultural demonstration sites annually.	<ul style="list-style-type: none"> - # tours/year - # farmers attending tours/year - # expressions of interest in the ALUS program following the event
12.1: By 2023, financial incentives are sufficient to meet the demand.	<ul style="list-style-type: none"> - % qualifying funding applications that are funded
12.2: By 2023, landowners are made aware of available funding programs and BMPs.	<ul style="list-style-type: none"> - # individuals reached
12.3: By 2023, 50% of farms in Norfolk County maintain winter cover crops during the non-growing season.	<ul style="list-style-type: none"> - % farms in Norfolk County maintaining at least a single field of winter cover crops - # ha managed with winter cover crops

STRATEGY 13: Restore, improve and manage forest and treed swamp habitat with a focus on increasing connectivity and diversity.

Benefitting Conservation Target(s): Forests and Treed Swamps

Direct Threat(s) Addressed: Logging & Wood Harvesting, Invasive Species, Recreational Activities, Climate Change

Theory of Change:

The following results chain (Figure 16) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 13. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

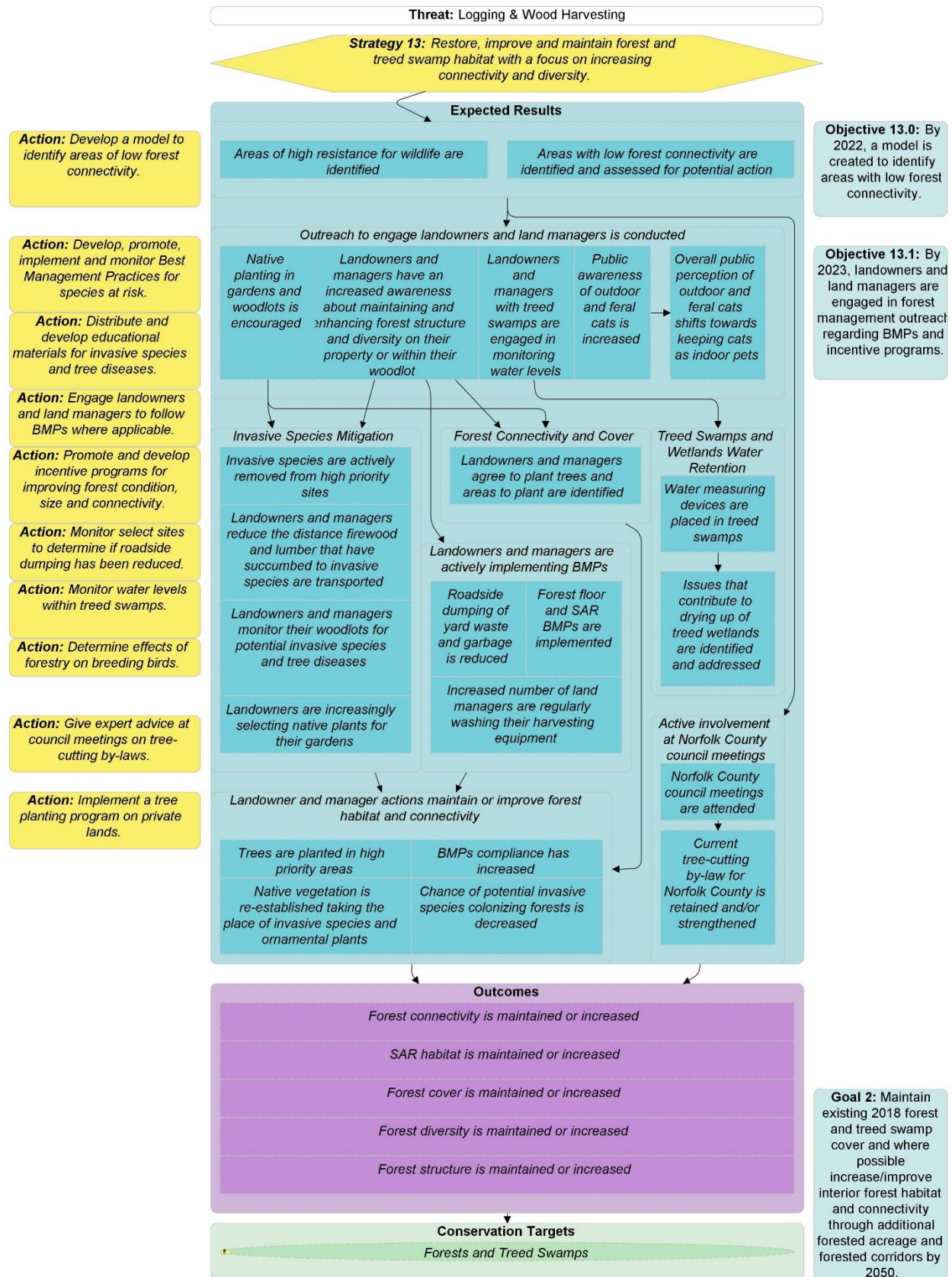


FIGURE 16. STRATEGY 13 - THEORY OF CHANGE.

Actions:

- Develop a model to identify areas of low forest connectivity.
- Develop, promote, implement and monitor Best Management Practices for species at risk and the forest floor.
- Distribute and develop educational materials about invasive species and tree diseases.
- Engage landowners and land managers to follow BMPs where applicable.
- Promote and develop incentive programs for improving forest condition, size and connectivity.
- Monitor select sites to determine if roadside dumping has been reduced.
- Monitor water levels within treed swamps.
- Determine effects of forestry on breeding birds.
- Give expert advice at Norfolk County Council meetings on tree-cutting by-laws.
- Implement a tree planting program on private lands.

Measures of Success:

Objectives	Indicators
13.0: By 2022, a model is created to identify areas with low forest connectivity.	- # ha identified as area with low forest connectivity
13.1: By 2023, landowners and land managers are engaged in forest management outreach regarding BMPs and incentive programs.	- # landowners implementing BMPs - # land managers implementing BMPs - # landowners and land managers engaged in BMP outreach - # ha habitat managed based on BMPs - # ha improved - # ha restored - # trees planted to increase forest cover

STRATEGY 14: Acquire significant land through fee simple purchases and conservation easements.

Benefitting Conservation Target(s): Coastal Wetlands and Inner Bay, Beaches and Coastal Dunes, Open Country, Watercourses and Riparian Areas, and Forests and Treed Swamps

Direct Threat(s) Addressed: Housing and Urban Areas, Annual and Perennial Non-Timber Crops, Other Ecosystem Modifications

Theory of Change:

The following results chain (Figure 17) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 14. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

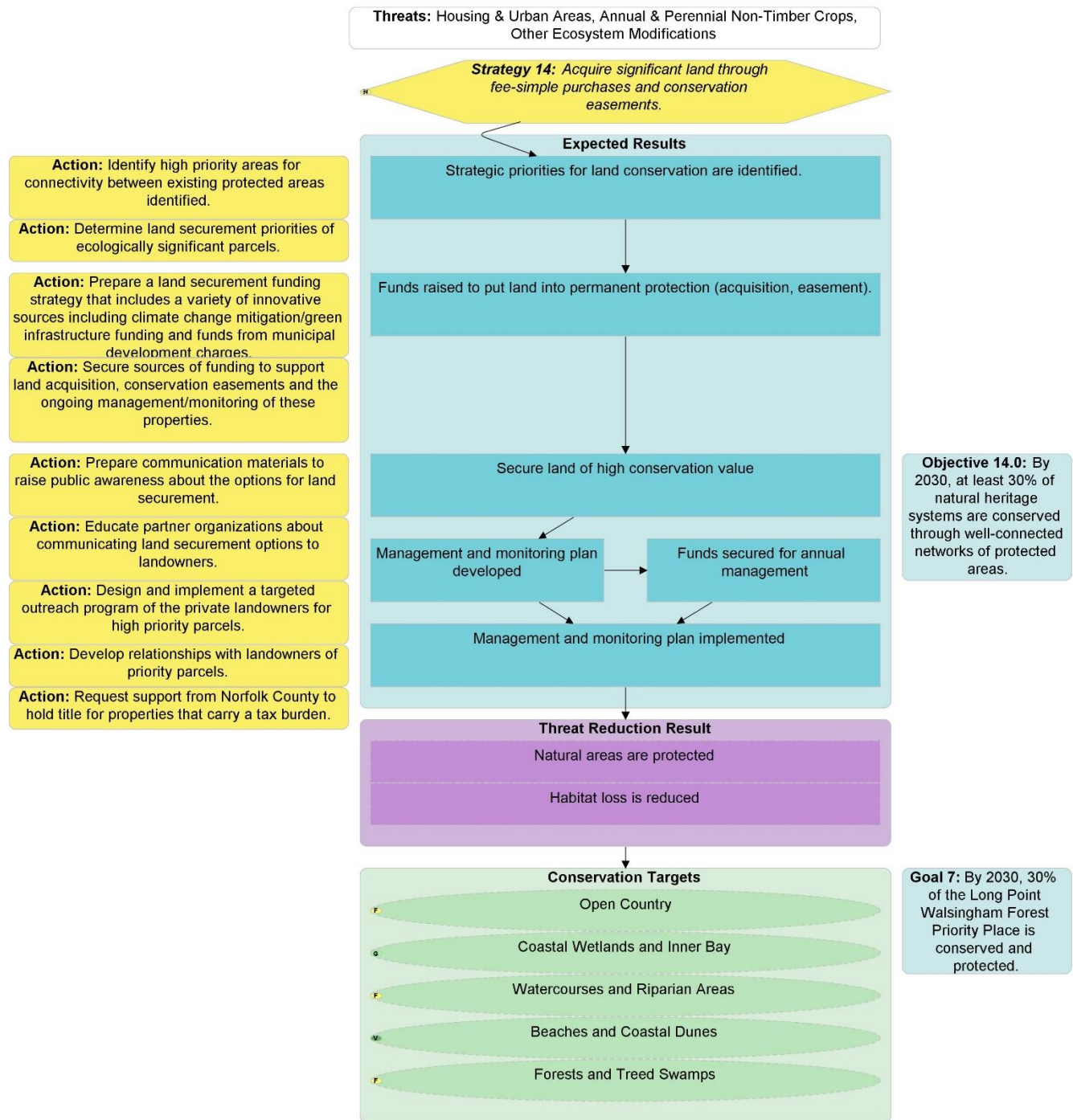


FIGURE 17. STRATEGY 14 – THEORY OF CHANGE.

Actions:

- Identify high priority areas for connectivity between protected areas.
- Determine land securement priorities of ecologically significant parcels.
- Prepare a land securement funding strategy that includes a variety of innovative sources including climate change mitigation/green infrastructure funding and funds from municipal development charges.
- Secure sources of funding to support land acquisition, conservation easements and the ongoing management/monitoring of these properties.
- Prepare communication materials to raise public awareness about the options for land securement.
 - Design and implement a targeted outreach program of the private landowners for high priority parcels.
 - Educate partner organizations about communicating land securement options to landowners.
- Develop relationships with landowners of priority parcels.
- Request support from Norfolk County to hold title for properties that carry a tax burden.

Measures of Success:

Objectives	Indicators
14.0: By 2030, at least 30% of natural heritage systems are conserved through well-connected networks of protected areas.	<ul style="list-style-type: none">- # ha acquired through fee-simple purchase or conservation easement agreement- # private landowners participating in voluntary conservation management agreements

STRATEGY 15: Identify and develop a “Natural Heritage System” and strategy for Norfolk County.

Benefitting Conservation Target(s): Coastal Wetlands and Inner Bay, Beaches and Coastal Dunes, Open Country, Watercourses and Riparian Areas, and Forests and Treed Swamps

Direct Threat(s) Addressed: Housing and Urban Areas, Annual and Perennial Non-Timber Crops, Other Ecosystem Modifications

Theory of Change:

The following results chain (Figure 18) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 15. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

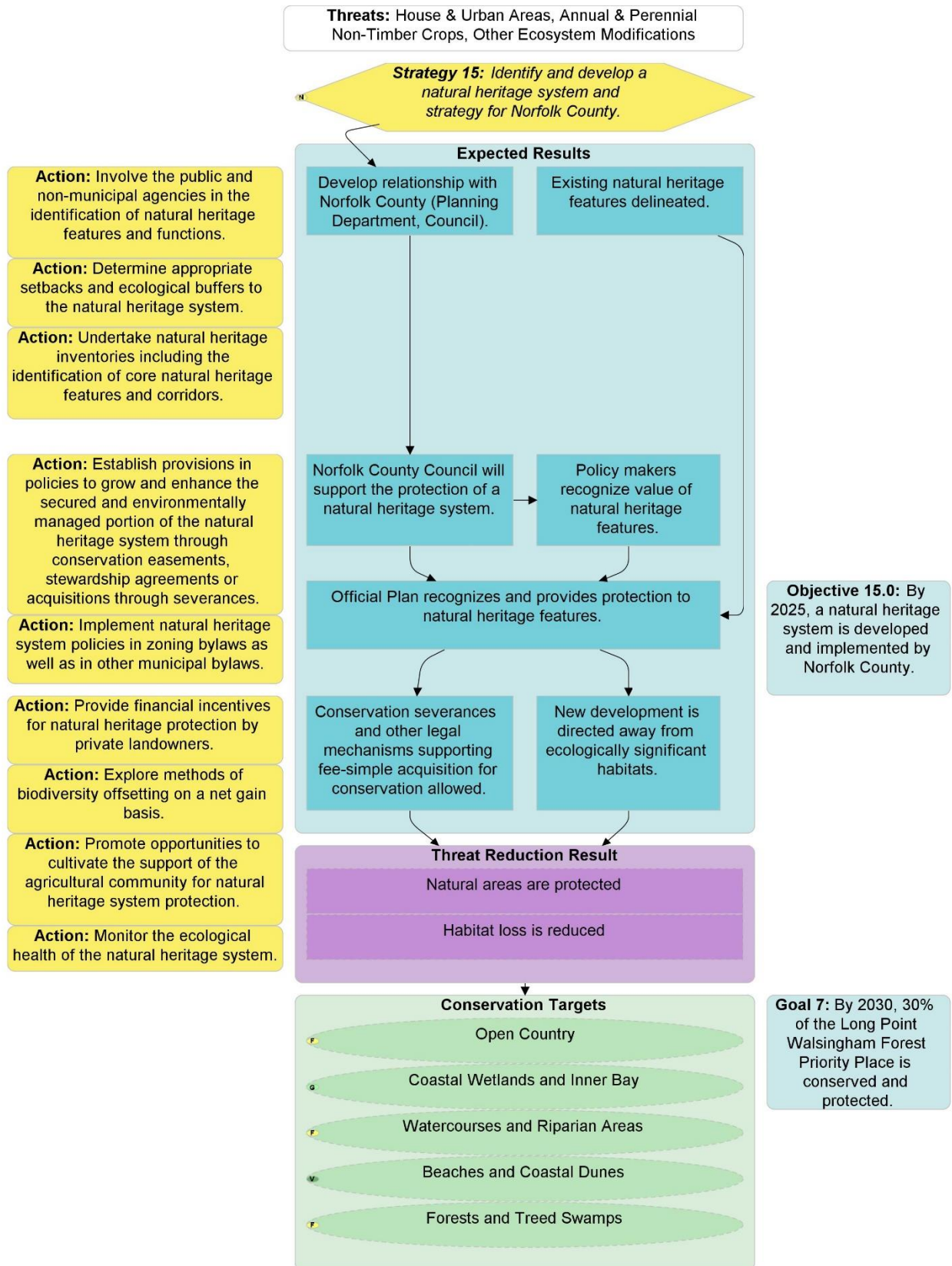


FIGURE 18. STRATEGY 15 – THEORY OF CHANGE.

Actions:

- Involve the public and non-municipal agencies in the identification of natural heritage features and functions.
- Determine appropriate setbacks and ecological buffers to the natural heritage system.
- Undertake natural heritage inventories including the identification of core natural heritage features and corridors.
- Establish provisions in policies to grow and enhance the secured and environmentally managed portion of the natural heritage system through conservation easements, stewardship agreements or acquisitions through severances.
- Implement natural heritage system policies in zoning bylaws as well as in other municipal bylaws.
- Provide financial incentives for natural heritage protection by private landowners.
- Explore methods of biodiversity offsetting on a net gain basis.
- Promote opportunities to cultivate the support of the agricultural community for natural heritage system protection.
- Monitor the ecological health of the natural heritage system.

Measures of Success:

Objectives	Indicators
15.0: By 2025, a natural heritage system is developed and implemented by Norfolk County.	<ul style="list-style-type: none">- Existing natural heritage features delineated- Official Plan recognizes and provides protection to natural heritage features

STRATEGY 16: Manage invasive plants in conservation lands and adjacent roadsides using best management practices.

Benefitting Conservation Target(s): Coastal Wetlands and Inner Bay, Beaches and Coastal Dunes, Open Country, Watercourses and Riparian Areas, and Forests and Treed Swamps

Direct Threat(s) Addressed: Invasive Species

Theory of Change:

The following results chain (Figure 19) identifies the short and long term intermediate results that are expected to contribute to the threat reduction results and long term conservation target goals through the implementation of Strategy 16. Actions are noted at key steps in the chain. Objectives have also been identified at crucial intervention points.

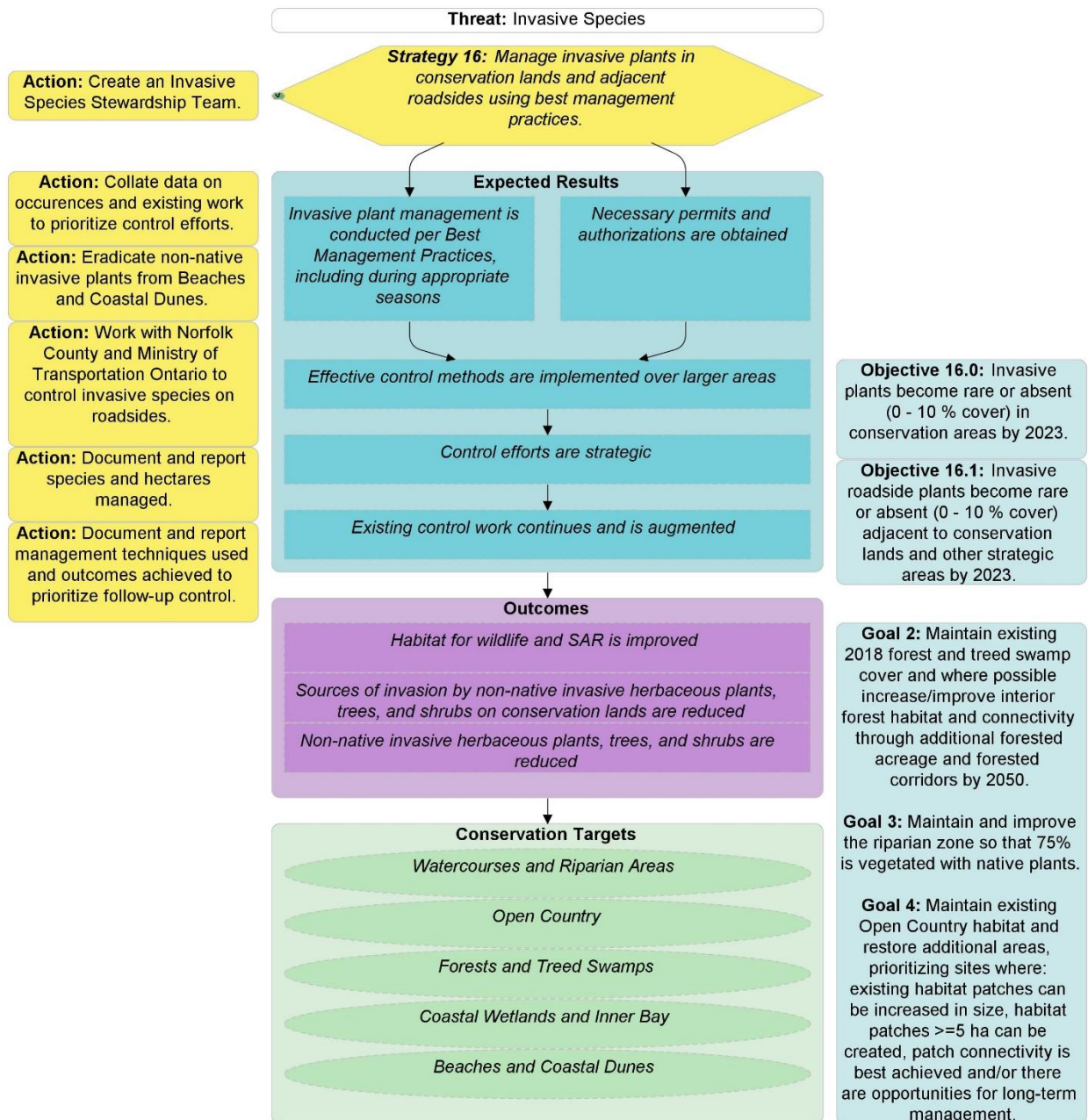


FIGURE 19. STRATEGY 16 – THEORY OF CHANGE.

Actions:

- Create an Invasive Species Stewardship Team.
- Collate data on occurrences and existing work to prioritize control efforts.
- Eradicate non-native plants from Beaches and Coastal Dunes.
- Work with Norfolk Country and Ministry of Transportation Ontario to control invasive species on roadsides.
- Document and report species and hectares managed.
- Document and report management techniques used and outcomes achieved to prioritize follow-up control.

Measures of Success:

Objectives	Indicators
16.0: Invasive plants become rare or absent (0-10% cover) in conservation areas by 2023.	- # hectares managed - # hectares improved
16.1: Invasive roadside plants become rare or absent (0-10% cover) adjacent to conservation lands and other strategic areas by 2023.	- # km managed - # km improved

4. Monitoring Plan and Reporting on Progress

Monitoring and measuring the effectiveness of conservation action is central to good adaptive management. The CIP will apply three types of monitoring:

1. Status monitoring: tracking the viability of the conservation targets and achievement of long term goals.
2. Effectiveness monitoring: tracking whether strategies are having their intended impacts through the achievement of objectives and reduction in threats.
3. Project results monitoring: tracking the immediate outputs of the projects implementing the CIP.

Table 4 provides an overview of the monitoring plan and the information being tracked. Progress on the implementation of the CIP will be reported on annually. The Canadian Wildlife Service maintains a more detailed version of this table.

TABLE 4. OVERVIEW OF MONITORING PLAN.

Goal/ Objective Number	Goal/Objective	Baseline (2018)	Indicators/Variables	Monitoring Activities	Timeframe
OBJ 1.0	Maintain <i>Phragmites australis</i> cover in the Long Point coastal wetlands to <10%.	Total estimated <i>Phragmites australis</i> cover: 711 ha with 33% margin of error.	<ul style="list-style-type: none"> - # ha habitat improved - % <i>phragmites</i> cover 	<ul style="list-style-type: none"> - Track hectares improved by the Invasive Species Working Group members. 	Annually
OBJ 1.1	A funded and coordinated <i>Phragmites</i> management program is implemented on the Long Point and Big Creek National Wildlife Areas annually from 2019-2025.	No funded and coordinated <i>Phragmites</i> management program.	<ul style="list-style-type: none"> - Program established - # ha habitat improved - % <i>phragmites</i> cover - % <i>phragmites</i> cover based on vegetation plots - % change in <i>Phragmites</i> cover based on satellite imagery 	<ul style="list-style-type: none"> - Track continued implementation of the Program and hectares improved. - Collect and analyze vegetation plot data. - Collect and analyze satellite imagery. - Collect water and sediment samples at select treatment locations. 	Annually from 2019-2025
OBJ 1.2	Evaluate native vegetation recovery capacity.		<ul style="list-style-type: none"> - % native cover - Change in presence and abundance of SAR vegetation - Species richness of vegetation present in seedbank 	<ul style="list-style-type: none"> - Collect and analyze vegetation plot data. - Conduct seedbank analysis. 	Annually
OBJ 1.3	Evaluate effects of treatment on wetland biota habitat use.		<ul style="list-style-type: none"> - Relative abundance of turtles in treated vs control areas - Relative abundance of marsh birds in treated vs control areas - Relative abundance of anurans in treated vs control areas - Relative abundance of Fowler's Toads in treated vs control areas - % conversion of <i>Phragmites</i> to fish habitat 	<ul style="list-style-type: none"> - Collect and analyze ARU data. - Collect SAR snake visual encounter data. - Collect Fowler's Toad survey data. - Collect SAR frog, turtle and snake data. - Collect wetland bird data. 	Annually
OBJ 2.0	By 2024, key <i>Phragmites australis</i> propagule sources in Big Creek watershed are managed.	No coordinated management in the Big Creek watershed.	<ul style="list-style-type: none"> - # ha improved - # km improved - # landowners participating in management 	<ul style="list-style-type: none"> - Track hectares improved by the Invasive Species Working Group members. 	Annually

			- # individuals trained to manage Phragmites		
OBJ 3.0	Phragmites australis is effectively managed in SAR critical habitat at the Long Point and Big Creek National Wildlife Areas by 2022.	0 ha	- # ha of SAR critical habitat improved	- Track hectares of SAR critical habitat that are improved.	2022
OBJ 4.0	By 2020, citizen scientists are submitting road mortality observations in Norfolk County to the iNaturalist 'Citizen Science Data Collection in Norfolk County' project or the 'Wildlife on Roads in Ontario' project and observations/people contributing increases each year.	No coordinated collection of citizen scientist data on amphibian and reptile road mortality in Norfolk County.	- # people (citizen scientists) conducting road mortality surveys on Norfolk County roads - # road mortality observations submitted to the iNaturalist 'Citizen Science Data Collection in Norfolk County' project or the 'Wildlife on Roads in Ontario' project (in Norfolk County) to inform future management	- Track observations submitted to both iNaturalist projects. - Track people conducting road mortality surveys.	Annually
OBJ 4.1	By 2023, 5 public engagement events on road ecology have occurred.		- # public engagement events - # attendees at each event	- Track engagement events organized or attended by Roads Working Group members.	Annually
OBJ 4.2	By 2023, at least 75% of Norfolk County residents have been made aware of the threats of roads to reptiles and amphibians and the solutions to mitigate road mortality.		- # households and/or residents reached	- Collect data from postcard mail-outs.	Spring 2020
OBJ 5.0	By 2025, Norfolk County council has reviewed at least 1 municipal staff recommended report about the threat of roads to SAR herpetofauna and road ecology mitigation principles and practices.		- # reports reviewed	- Track reports reviewed.	Annually
OBJ 5.1	At the next Official Plan review (2021), road ecology mitigation policy amendments are consolidated into the Official Plan.		- An updated Norfolk County Official Plan which includes road ecology mitigation policy amendments.	- Review updated Norfolk County Official Plan.	At the next Official Plan update.

OBJ 6.0	By 2021, Norfolk County road managers consider SAR herpetofauna habitat for all road projects that are scheduled.		<ul style="list-style-type: none"> - % road project proposals that include an assessment of the potential for herpetofauna road mortality - % projects include considerations (an analysis or mitigation plan if appropriate) for SAR herpetofauna 	<ul style="list-style-type: none"> - Track road project proposals that include an assessment of the potential for herpetofauna road mortality and projects that include considerations for SAR herpetofauna. 	Annually
OBJ 6.1	By 2025, a report with proposed road ecology amendments to the Norfolk County Official Plan is presented to council		<ul style="list-style-type: none"> - Road ecology amendments to the Norfolk County Official Plan are completed - # presentations to Council on road ecology amendments 	<ul style="list-style-type: none"> - Track presentations to Council on road ecology amendments by the Roads Working Group. 	Annually
OBJ 6.2	By 2026, Norfolk County plans, installs, monitors and maintains dedicated wildlife/road mitigation infrastructure at priority hotspots.		<ul style="list-style-type: none"> - # wildlife road mitigation infrastructure projects being maintained and/or implemented at priority SAR herpetofauna hotspots - # projects that are inspected/ repaired per year - # projects for which surveys are conducted to measure effectiveness in reducing road mortality 	<ul style="list-style-type: none"> - Track road mitigation infrastructure projects being maintained and/or implemented at Priority SAR herpetofauna hotspots, projects inspected or repaired each year and projects for which surveys are conducted. 	Annually
OBJ 7.0	Develop a shareable database linked to the LPWF Shared Geospatial Conservation Database to track monitoring results with a focus on problematic invasive species, key tallgrass habitat indicator species, overall biodiversity, and management activities.		<ul style="list-style-type: none"> - An updated geospatial database for tallgrass habitat is created 	<ul style="list-style-type: none"> - Expansion of Tallgrass Ontario data to regional habitat database and/OR Arc Collector shareable platform. 	As needed
OBJ 7.1	By 2021, map (and ground-truth where necessary) tallgrass habitat.	2016: Norfolk Sand Plain Remnant/Created/ Unknown Prairies,	<ul style="list-style-type: none"> - Tallgrass habitat is mapped in a geospatial database 	<ul style="list-style-type: none"> - Identify sites where restoration activities such as prescribed burns have occurred, rare or sensitive species, invasive species, and new 	Annually

		Savannas and Woodlands mapped.		protected lands that have been acquired.	
OBJ 8.0	By 2023, a landscape level Open Country habitat management plan is being implemented.		<ul style="list-style-type: none"> - Open country habitat restoration and management is implemented in a coordinated and strategic manner by the working group 	<ul style="list-style-type: none"> - Fire Suppression Working Group coordinates Habitat restoration and management work. 	Annually
OBJ 8.1	Improve and restore 250 ha of Open Country habitat on private and public lands by 2023 in a manner that focuses on creating new habitat patches >5 ha where possible.	1333 ha of tallgrass habitat in the LPWF area (842 ha re-planted native tallgrass prairie, 67 ha tallgrass savanna, and 424 ha tallgrass woodland).	<ul style="list-style-type: none"> - # projects funded - # ha habitat restored - # ha habitat improved - # new Open Country habitat patches created >5 ha - # ha of tallgrass habitat improved using prescribed burn or other methods for reducing woody encroachment and invasive species 	<ul style="list-style-type: none"> - Track hectares improved and restored by the Fire Suppression Working Group members. - Track the number of Open Country habitat patches created >5 hectares. 	Annually
OBJ 8.2	Implement monitoring plans to assess the success of restoration efforts focused on Open Country habitat indicator species, SAR, and overall biodiversity.		<ul style="list-style-type: none"> - # sites with pre and post restoration data is collected - # sites where a systematic monitoring program has been implemented 	<ul style="list-style-type: none"> - Collect data from long-term Snake Ratio Telemetry Tracking and cover board monitoring. - Collect data from long-term insect biodiversity monitoring. - Collect data from standardized biodiversity monitoring program. - Collect data from vegetation monitoring surveys. 	Annually
OBJ 9.0	By 2023, a public awareness campaign on the importance of Open Country communities, with an emphasis on fire as a management tool for tallgrass habitat is developed and executed with at least 2 public outreach events and 3 presentations given.		<ul style="list-style-type: none"> - # public outreach events - # presentations - # attendees at events or presentations - # private landowners with Tallgrass communities engaged in targeted outreach 	<ul style="list-style-type: none"> - Track tours and volunteer events offered to the public. - Track outreach materials delivered on the ecological important of Open Country habitat. 	Annually
OBJ 10.0	By 2023, at least 60 ha (of the 250 ha Open Country restoration objective) is restored and improved on private lands.		<ul style="list-style-type: none"> - # ha of habitat restored on private lands - # ha habitat improved on private lands 	<ul style="list-style-type: none"> - Track hectares improved and restored by the Fire Suppression Working Group members. 	Annually

OBJ 10.1	By 2023, at least 5 prescribed burns have occurred on private lands to maintain/improve tallgrass habitat.		<ul style="list-style-type: none"> - # prescribed burns conducted on private lands - # ha of habitat improved through prescribed burns 	- Track hectares improved through prescribed burning by the Fire Suppression Working Group members.	Annually
OBJ 11.0	Protect habitat on agricultural land through conservation easement agreements to restore, improve and manage natural features.		<ul style="list-style-type: none"> - # ha secured 	- Track hectares secured by the Agricultural Runoff Working Group members.	Annually
OBJ 11.1	Restore and improve 200 ha of natural features on marginal agricultural land by 2023.		<ul style="list-style-type: none"> - # ha habitat restored - # km habitat restored - # ha improved - # km improved 	- Track hectares and kilometers improved and restored by the Agricultural Runoff Working Group members.	Annually
OBJ 11.2	Monitor and manage restored and improved habitat to assess the performance of buffer strips and natural features.		<ul style="list-style-type: none"> - # ha monitored - # ha managed 	- Track hectares monitored and managed by the Agricultural Runoff Working Group members and landowners.	Annually
OBJ 11.3	Manage and diversify the plant species composition of existing hedgerows and plant additional hectares to link woodlands by 2023.		<ul style="list-style-type: none"> - # ha hedgerows managed - # ha hedgerows planted 	- Track hedgerows managed and planted by the Agricultural Runoff Working Group members.	Annually
OBJ 12.0	Conduct at least 2 public tours of agricultural demonstration sites annually.		<ul style="list-style-type: none"> - # tours/year - # of farmers attending tours/year - # of farmers that indicate they will implement one or more BMPs in the following growing season 	- Track public tours hosted by Agricultural Runoff Working Group members.	Annually
OBJ 12.1	By 2023, financial incentives are sufficient to meet the demand.		<ul style="list-style-type: none"> - % of qualifying funding applications that are funded 	- Track qualifying funding applications that are funded.	Annually
OBJ 12.2	By 2023, a public awareness and engagement campaign is created and implemented to notify landowners of available funding programs and BMPs.		<ul style="list-style-type: none"> - # of individuals reached 	- Track public engagement by Agricultural Runoff Working Group members.	Annually
OBJ 12.3	By 2023, 50% of farms in Norfolk County maintain winter cover	2016: 42% of farms (546) in Norfolk County maintain winter cover	<ul style="list-style-type: none"> - % farms in Norfolk County maintaining at least a single field of winter cover crops 	- Track number of farms that are implementing BMPs and hectares managed.	Annually

	crops during the non-growing season.	crops during the non-growing season (Statistics Canada, 2016).	- # of hectares with winter cover crops		
OBJ 13.0	By 2022, a model is created to identify areas with low forest connectivity.	No model created.	- # ha identified as area with low forest connectivity	- Create model to identify areas with low forest connectivity.	Spring 2022
OBJ 13.1	By 2023, landowners and land managers are engaged in forest management outreach regarding BMPs and incentive programs.		<ul style="list-style-type: none"> - # landowners implementing BMPs - # land managers implementing BMPs - # landowners and land managers engaged through incentive programs - # ha habitat managed - # trees planted to increase forest cover 	- Track hectares managed and number of trees planted by the Forests & Treed Swamps Working Group members.	Annually
OBJ 14.0	By 2025, at least 17% of natural heritage systems are conserved through well-connected networks of protected areas.		<ul style="list-style-type: none"> - # ha acquired through fee-simple purchase or conservation easement agreement - # private landowners participating in voluntary conservation management agreements 	<ul style="list-style-type: none"> - Track hectares securement across Grant and Contribution projects of all Working Groups. - Track the number of private landowners participating in voluntary conservation management agreements. 	Annually
OBJ 15.0	By 2025, natural heritage systems are developed and implemented by Norfolk County.		<ul style="list-style-type: none"> - Existing natural heritage features delineated - Official Plan recognizes and provides protection to natural heritage features 	- Norfolk County identifies a Natural Heritage System.	Annually
OBJ 16.0	Invasive plants become rare or absent (0-10% cover) in conservation areas by 2023		<ul style="list-style-type: none"> - # hectares managed - # hectares improved 	- Track hectares managed and improved by the Stewardship Team members.	Annually
OBJ 16.1	Invasive roadside plants become rare or absent (0-10% cover) adjacent to conservation lands and other strategic areas by 2023.		<ul style="list-style-type: none"> - # km managed - # km improved 	- Track kilometers managed and improved by the Stewardship Team members.	Annually

Goal 1	By 2025, 90% of the vegetation in the Coastal Wetlands and Beaches and Coastal Dunes ecosystems is native.		<ul style="list-style-type: none"> - % coastal wetland cover - % Phragmites cover 	<ul style="list-style-type: none"> - Track vegetation cover in Coastal Wetlands and Beaches and Coastal Dunes. 	2025
Goal 2	Maintain existing 2018 Forests and Treed Swamps cover and where possible increase/improve interior forest habitat and connectivity through additional forested acreage and forested corridors by 2050.		<ul style="list-style-type: none"> - # of large forest patches - % forest cover - Amount of resistance to movement - # of Cerulean Warblers and Acadian Flycatchers 	<ul style="list-style-type: none"> - Track large forest patches and forest cover. - Track number of Cerulean Warblers and Acadian Flycatchers. 	2050
Goal 3	Maintain and improve the riparian zone so that 75% is vegetated with native plants.		<ul style="list-style-type: none"> - % of 5m buffer (adjacent to drains) naturally vegetated - % of 30m buffer (adjacent to watercourses) naturally vegetated 	<ul style="list-style-type: none"> - Track kilometers of buffers adjacent to drains and watercourses improved and vegetated with native plants. 	2025
Goal 4	By 2025, at least 50% of surface water samples meet the provincial water quality objective for phosphorus (0.03 mg/L for streams and rivers).		<ul style="list-style-type: none"> - Total Phosphorus (mg/L) 	<ul style="list-style-type: none"> - Collect surface water samples. 	2025
Goal 5	Reduce wildlife road mortality by enhancing road infrastructure to facilitate safe movement of wildlife across the landscape.		<ul style="list-style-type: none"> - Extent of habitat identified as having potential to contain biophysical attributes required by nested targets to support one or more life stages (% of LPWF) - Proportion of species assessed by COSEWIC as endangered - Road mortality risk - % of total suitable habitat (habitat within which biophysical attributes likely to be found) intersecting high risk roads 	<ul style="list-style-type: none"> - Identify habitat with potential to contain biophysical attributes required by nested SAR to support one or more life stages. - Identify percentage of species assessed as endangered by COSEWIC. - Identify percentage of suitable habitat intersecting high risk roads. 	2026
Goal 6	Maintain existing Open Country habitat and restore additional areas, prioritizing sites where: existing habitat patches can be		<ul style="list-style-type: none"> - # of hectares of Open Country communities (meadow, prairie, savanna and woodland) in LPWF - # of patches >5 ha 	<ul style="list-style-type: none"> - Track number of hectares of Open Country communities in LPWF and those managed to maintain early successional habitat. 	2023

	increased in size, habitat patches ≥ 5 ha can be created, patch connectivity is best achieved and/or there are opportunities for long-term management.		<ul style="list-style-type: none"> - % of Open Country habitats managed to maintain early successional stages - Distance between habitat patches 	<ul style="list-style-type: none"> - Track number of patches > 5ha. - Identify distance between patches. 	
Goal 7	By 2030, 30% of the Long Point Walsingham Forest Priority Place is conserved and protected.		<ul style="list-style-type: none"> - % of the Long Point Walsingham Forest Priority Place that is conserved and protected 	<ul style="list-style-type: none"> - Track number of hectares conserved and protected in the Canadian Protected and Conserved Areas Database. 	2030