



Before



After

# Nature Study Area Program Guide



Friends of the Rouge Watershed

# Contents

---

What is this program guide? .....	1
Who is this guide for? .....	1
Appendix A – Resources.....	1
Appendix B – Lesson Plans & Worksheets.....	2
Project Partners .....	3
About Friends of the Rouge Watershed .....	4
Introduction .....	5
What is a Nature Study Area (NSA)?.....	5
Challenges to using Nature Study Areas.....	5
This Program .....	5
What if our school doesn't have a Nature Study Area? .....	6
Essential Skills & Tips .....	6
Getting Started.....	6
Caring for your Nature Study Area.....	6
Funding.....	7
Resources .....	7
Taking Students Outdoors.....	8
Inquiry Based Learning.....	8
Subjects .....	9
Safety Outdoors .....	9
Stewardship.....	10
Developing a Plan.....	10
Seasonal Work .....	12
Threats & Stewardship Actions.....	12
Table 1. Stewardship Actions.....	13
Learning Objectives.....	15
Citizenship .....	15
Lessons Plans.....	16
Looking for more? .....	17

## What is this program guide?

This program encourages the use of outdoor and natural learning spaces at schools. It includes:

- tips for keeping these outdoor spaces healthy and safe;
- ways to engage students in hands-on stewardship of the school yard
- lesson plans that link outdoor learning to the curriculum
- resources to get you started

## Who is this guide for?

The lessons and resources in this program guide for educators who want to include outdoor learning into their teaching practice. This Guide includes lesson plans and ideas for grades 1 – 12, based on the Ontario Curriculum.

## Appendix A – Resources

Section	Resource
A1	Safety Guidelines for Bringing Students Outside
A2	Dressing for the Weather
A3	Stewardship Plan Template
A4	How to Plant a Tree
A5	Litter Clean-up
A6	Mulching 101
A7	Tree Care 101
A8	Invasive Species Removal
A9	Collecting Wildflower Seeds
A10	Benefits of Trees and Forests Handout
A11	CO2 and Trees Calculations
A12	TDSB Acceptable & Problematic Species to Plant in NSAs

## Appendix B – Lesson Plans & Worksheets

Lesson	Subject(s)	Season	Grade(s)	Section
<b>Bird Survey</b>	Science	Winter	5-8	B1 LP
			k-4	B2 LP
<b>Worksheets</b>			5-8	B1 WS
			k-4	B2 WS
<b>Stormwater Management</b>	Geography	Spring & Fall	9	B3 LP
<b>Litter Art Collage</b>	Visual Art, Science & Technology	Early Spring	k-4	B4 LP
<b>Biodiversity Survey</b>	Science & Technology, Geography, Math	Spring & Fall	6-8	B5 LP
			9 & 11	B6 LP
<b>Worksheets</b>			6-8	B5 WS
			9 & 11	B6 WS
<b>Building Seed Capsules</b>	Science & Technology	Fall	5-6	B7 LP
<b>Worksheet</b>			5-6	B7 WS
<b>Soil in the NSA</b>	Science	Fall & Spring	3	B8 LP
<b>Worksheet</b>			3	B8 WS
<b>Garbage Clean-up</b>	Math, Science & Technology	All	k-4	B9 LP
<b>Worksheet</b>			k-4	B9 WS
<b>Tracking Wildlife</b>	Science & Technology, Math	Winter	1-4	B10 LP
<b>NSA Mapping</b>	Geography	All	7-9	B11 LP
<b>Measuring Trees</b>	Math	Fall & Spring	5-10	B12 LP
<b>Worksheet</b>			5-10	B12 WS

## Project Partners

This project was made possible by funding from:

- Toronto District School Board, Office of Sustainability
- The Weston Family Parks Challenge – an initiative of The W. Garfield Weston Foundation in collaboration with the Ontario Trillium Foundation and administered by Toronto Park People
- TD Friends of the Environment Foundation
- City of Toronto
- Great Lakes Guardian Community Fund



This program would not be possible without the help and support of the staff and students at our partner schools. Throughout this guide you will find tips and ideas that were used at these schools entitled “*What Worked?*”. The participating TDSB schools included:

- Corvette Jr. P.S.
- Fleming P.S.
- Guildwood Jr. P.S.
- Lynnwood Heights Jr. P.S.
- R.H. King Academy
- Warden Ave. P.S.

The staff, administration and students at these schools were instrumental in the creation and delivery of the pilot project that led to the development of this guide. We would like to thank all of our partners for their support throughout this project.

Friends of the Rouge Watershed also wishes to thank those who contributed to the development of this program including: the staff at TDSB EcoSchools, Gail Bornstein, Richard Christie, Bruce Day, Pam Miller and Erin Wood; FRW’s Education Advisory Committee, Dave Gordon, Fiona Hall, Mark Jensen, Sadhana Sivasubramaniam and Mark Yearwood; and Teacher Candidate Alexandra Conliffe.

### What Worked?

Guildwood Jr. P.S. hosts a Community Garden Day every year to involve parents and neighbours in stewardship of the school yard. Community volunteers also help with NSA programming.

## About Friends of the Rouge Watershed

Friends of the Rouge Watershed (FRW) is a community-based, charitable conservation organization. FRW's mandate is to work with youth and community volunteers, leaders and groups to protect and improve ecosystem, watershed, parkland and community health within and surrounding the Rouge River Watershed. FRW forms productive conservation partnerships with schools, community and faith organizations, businesses, municipalities, government agencies, community leaders and environmental groups. We collaborate with our many partners to:

- 1) Encourage an ecosystem, watershed and community approach to environmental planning and protection;
- 2) Encourage environmental education, ethics and stewardship, and a sense of connection with nature;
- 3) Motivate youth and community volunteers to improve watershed, ecosystem, parkland and community health;
- 4) Monitor and communicate key indicators of watershed, ecosystem, parkland and community health.

Through environmental education, outreach and stewardship, FRW empowers youth and community volunteers to be catalysts for a healthier environmental future. From our small leased office in the TDSB's Hillside Outdoor Education School in the heart of Rouge Park, FRW proudly serves the culturally diverse communities of the eastern Greater Toronto Area.

### Friends of the Rouge Watershed

2259 Meadowvale Road

Scarborough, ON M1X 1R2

tel: 416-208-0252

[www.frw.ca](http://www.frw.ca)

Twitter & Instagram: @frwatershed



# Introduction

---

## What is a Nature Study Area (NSA)?

Nature Study Areas (referred to as NSAs) are an initiative of the Toronto District School Board. They are places for students and teachers to access nature in their own school yard. Beginning in 2006, several schools stopped mowing a section of their school yard to see what vegetation would emerge. These areas quickly became living, outdoor labs for studying nature.

Not all schools have NSAs and each area is unique to the environmental conditions in that particular school yard. These areas were designed to have very little start-up and maintenance costs. The simple act of not mowing the grass allowed some school yard areas to re-naturalize. This also reduced mowing costs and associated noise and air pollution.

## Challenges to using Nature Study Areas

Many NSAs are being used by students, teachers and the community across Toronto. However, three challenges have become apparent:

- 1) Maintenance of the Nature Study Areas needs to be ongoing to sustain an attractive, ecologically healthy, interesting and safe environment;
- 2) Teachers and students need support and resources to effectively create, steward, explore, and learn in these spaces;
- 3) NSAs need long term plans to ensure they are not lost or neglected due to changes in leadership within schools and the TDSB.

### What Worked?

The annual school-wide litter clean-up and ongoing outreach by the Environmental Council at R.H. King promotes responsible use of the NSA and creates a safe, relaxing space for students and community members.

Whether you are starting an NSA from the beginning or adding to existing NSA programs, the resources in this guide will encourage the responsible use of NSAs to effectively engage students in outdoor learning, environmental education and nature exploration.

## This Program

This program provides guidance and resources for the creation, utilization and stewardship of Nature Study Areas. This guide will help you to effectively engage students in nature inspired learning in an outdoor environment. Many of the lesson plans, guidelines and information can be applied to school gardens, outdoor classrooms and other accessible natural areas. These resources were developed to make it easier and exciting to get students learning outside the classroom.

Experiential learning and experiences with the natural world will help to strengthen our understanding and appreciation of nature and the complex web of life which supports our health and

well-being. To Paraphrase Chief Seattle: *We do not weave the web of life. We are merely a strand of it. Whatever we do to the web, we do to ourselves.*

The lessons included in this guide have been developed with the help of our partner schools. Drawing on our past experiences engaging youth and community in environmental action, FRW worked with 6 schools in Scarborough, Ontario, to pilot the NSA program from 2014-2016. We would like to thank the staff and students at these schools for their participation and feedback.

## What if our school doesn't have a Nature Study Area?

Almost any natural space can be a Nature Study Area. You do not need to have a formal NSA in order to use the lesson plans in this guide. Many of the lessons can be used in a learning garden, outdoor classroom or the school yard in general. If you are interested in establishing a formal Nature Study Area at your school you should contact an EcoSchools representative at your Board.

# Essential Skills & Tips

---

## Getting Started

To start a new Nature Study Area (or plant on your school grounds) you will need to consult with an EcoSchools representative (TDSB – 416-395-2960).

Schools can also use outdoor learning areas on/near their school grounds by:

- Creating a garden which can include native shrubs, trees, wildflowers and food plants.
- Creating an outdoor classroom with log or stone seating to take lessons outside preferably with some shade from existing or planted trees.
- Using a nearby natural area – local public parks and ravines are great places to explore.
- Using existing trees and natural areas in the school yard.

You will need to get approval from your principal and consult with your caretaker or school yard management representative before you start doing stewardship activities in your school yard. If you are creating a Nature Study Area, garden or outdoor classroom you will need a few other teachers who are dedicated to using and maintaining the space and you should consult with EcoSchools.

## Caring for your Nature Study Area

Involving students, staff and community in the active care of your school's NSA is at the core of the NSA Program. Although NSAs should be designed to be fairly easy to maintain, seasonal maintenance is necessary to keep the area attractive, safe and ecologically healthy. Regular use of the NSA by the school and community

### What Worked?

Warden Ave. P.S. and Corvette Jr. P.S. held "World Café" sessions to gather ideas and consult with staff, students and community members in order to develop a vision for their NSA.

usually leads to a cleaner, more biodiverse natural area, and a safer space for students to explore nature. The most common stewardship actions that are needed in NSAs are:

- Removing litter
- Removing invasive plants
- Mulching and maintaining trails
- Planting, mulching and watering trees, shrubs and wildflowers
- Maintaining necessary sightlines

New NSAs tend to look good when they are first established. In the 2-5 year range their 'wildness' sometimes appears unkempt to the public. It is important to communicate during this time that the NSA is undergoing a transformation that will result in a better long term condition. Performing some modest trimming of vegetation may be needed to maintain trails, tidiness and sightlines. Remember, the NSA is meant to evolve towards a more natural, self-sustaining environment; therefore maintenance should take place only when necessary.

## Funding

Your school and the broader community is a valuable source of in-kind donations, inspiration and support for NSA projects. EcoSchools and/or your Board may also have resources to help pay for planting materials and program expenses.

Although Nature Study Areas can be created with modest financial resources and input, some schools may want to participate in tree/shrub/wildflower plantings to enhance the NSA and promote native species, beauty and biodiversity. Some schools add large logs, benches or stones for seating to encourage student, teacher and community use of the NSA. There are some funding programs to help with these costs. It is always advisable to contact a granting agency to discuss funding options and make sure your project is a good fit for their priorities. Here are a few we recommend:

- Evergreen – [School Ground Greening Grant](#)
- TD Friends of the Environment Foundation – [Community Grant](#)
- Ontario EcoSchools also keeps a [list of potential funders](#)

## Resources

There are many online resources to help you explore the natural world with students. Your local environmental, naturalist or watershed group is an invaluable resource for identifying native and non-native species and providing other support. Look into resources and programs that may be available in your area. Below are a few links to useful online resources to get you started.

### What Worked?

The Environment Council at R.H. King Academy partnered with students in technology classes to build bird nesting boxes and bat boxes for their NSA. They will be responsible for cleaning them annually.

## Species Guides

[Trees of the Oak Ridges Moraine](#) – EcoSpark

[Treepedia Online Database](#) - ACER

[Native Species Online Database](#) - Evergreen

[Common Species in GTA and Niagara and Common Invasive Species](#) – ACER

## Invasive Species Identification, Reporting & Resources

[Ministry of Natural Resources, Ontario](#)

## Poisonous species

[Giant Hogweed](#) – causes severe skin rashes, invasive

[Poison Ivey](#) – causes skin rashes, native

## Species-at-risk

[Ontario Species-at-risk in Toronto region](#) - MNR

## Taking Students Outside Guides

[Nature as a Classroom](#) – David Suzuki Foundation

[Tips for Taking Your Students Outside](#) – Sierra Club BC

## Creating Outdoor Classrooms

[Outdoor Classroom Guide](#) – TD FEF

### What Worked?

At Lynnwood Heights Jr. P.S. students in grade 1 each adopted a tree in the NSA. They knew what kind of tree it was and how to identify it. Throughout the year they spent time with their tree.

# Taking Students Outdoors

## Inquiry Based Learning

The lessons in this program encourage student-led exploration of an NSA. Teachers do not need to be, for example, an expert ornithologist to study birds with their class. Inquiry based learning allows for flexibility in teaching so classes can explore different elements in the NSA as they spark students' curiosity. This is especially relevant to outdoor learning when nature or the weather do not present what we may expect or hope for. These situations offer opportunities to question the health or state of a natural area and explore other factors acting on the NSA.

We know that spending time in nature is important for developing and maintaining good physical and emotional health. Learning outside the classroom requires planning and preparation for changing weather conditions. Adopting a flexible approach to outdoor lessons is therefore essential. A natural resource manager would call this an “adaptive management” approach; you prepare for contingencies and you update your plan in response to the changing circumstances. In the classroom a similar concept would be inquiry-based learning – the idea that when students to lead their own learning through inquiry they will better understand concepts. This approach does not rely on teachers to have all the answers. It encourages both students and teachers to explore nature.

The intrinsic value of having access to and being in nature benefits learners and tends to lead to novel and rich experiences outside the classroom. A great resource on Environmental Inquiry can be found at [Natural Curiosity](#).

---

### What Worked?

Grade 3 students at Fleming P.S. used their NSA to study native plants as part of their Aboriginal Studies unit. Students learned about traditional uses of plants for food and medicine.

---

## Subjects

Nature provides a platform for diverse learning opportunities. Many lessons in this guide draw on STEM (Science, Technology, Engineering and Math) subjects. NSAs are perfect settings in which to study ecology, biodiversity, botany and climate change. While environmental and natural sciences are a typical starting point for outdoor learning, this program adds mathematics, art, social science and comprehension.

Being physically active and exploring the natural sciences are just some of the many possible subjects to explore outdoors. Every subject can take advantage of natural areas and outdoor learning. As students become more comfortable with spending time outside it is possible to teach some conventional lessons outside at an outdoor seating area or by sitting on grass.

## Safety Outdoors

The General Outdoor Education Safety Guidelines apply for taking students out to NSAs or nearby natural areas (included in SECTION A1). Below are some basic safety steps.

### 1. Dressing for the Weather

Planning and preparation are necessary to ensure students are dressed appropriately and comfortably for outdoor learning. Being weather-ready is a great Canadian learning opportunity about the importance of planning, preparation, contingency planning and wise decision-making. Students should not be outdoors in thunder or lightening storms. Online weather radar sites provide useful information about incoming systems. Check your school's policy for sending students outside in extremely cold or hot weather. You may need to modify lessons to limit outdoor exposure during adverse weather or high UV periods. When appropriate, exploring the NSA in many types of weather is encouraged as part of the learning experience and can increase the general appreciation of nature. See our *Dressing for the Weather* resource (SECTION A2).

### 2. Let Parents & Office Know

Notifying parents and guardians in advance that a lesson will be held outside is important. This helps parents and students prepare for the weather and it can introduce the NSA and the idea of outdoor learning to parents. Keeping outdoor lessons short initially will help to acclimatize students to outdoor learning and allow everyone to build confidence in using the NSA. Let the school office know your class is outside in case they need to contact you or a student.

---

### What Worked?

Primary students at Warden Ave. P.S. used the NSA to explore colour and texture in art class, while intermediate students used pieces found in the NSA to mimic natural lines and shapes.

---

### 3. NSA Safety Check

You will want to conduct a brief safety review or walk-around prior to bringing students into the NSA. Look for any hazards such as suspended dead branches, wasp nests or poisonous plants. Avoid any safety hazards and notify your principal and caretaker to prompt corrective actions. Tell students where they should and should not go – perhaps because flowers or saplings are growing or there is an experimental plot.

### 4. Establish Reasonable Rules for the NSA

Some schools only allow students in the NSA when they are with their teacher or class (not at recess or lunch) because it is difficult for teachers to see students. In general, encouraging walking, not running, through the NSA on designated paths is best for student, plant and wildlife safety. Teachers may want to take students off the designated paths to explore something during lessons. Students should try to follow the trail you create and touch the species that you touch.

## Stewardship

---

Stewardship is the act of caring for your NSA. It encompasses the responsibilities, ethics and actions necessary to protect, enhance and nurture your schoolyard natural area. By empowering youth to become stewards of their school NSA, you are cultivating a sense of shared responsibility for other school and community areas, other natural areas, the environment and our planet.

Stewardship actions in your NSA can be broken down into two main categories: Those that

1. Either address threats to the NSA or protect and enhance the ecological health;
2. Encourage observation, exploration and learning in the NSA.

Together, these two categories will inform the stewardship actions of your school. Appendix A3 provides a Stewardship Plan Template that can be filled in by staff and/or students.

### Developing a Plan

The Stewardship Plan Template (SECTION A3) will take you and your class through the steps of planning activities in your NSA for the year. Stewardship Plans are used by environmental professionals to document biodiversity, evaluate the ecological health of a natural area and inform action for NSA protection and education. The Template will allow you to record the history of your NSA (to your knowledge), document what is currently there, develop a future vision and identify actions to achieve that vision.

#### What Worked?

Grade 8 students at Fleming P.S. used their NSA for quiet reading. The class did several clean-ups & work days in the gardens to create a space that they enjoyed spending time in – in and out of school time.

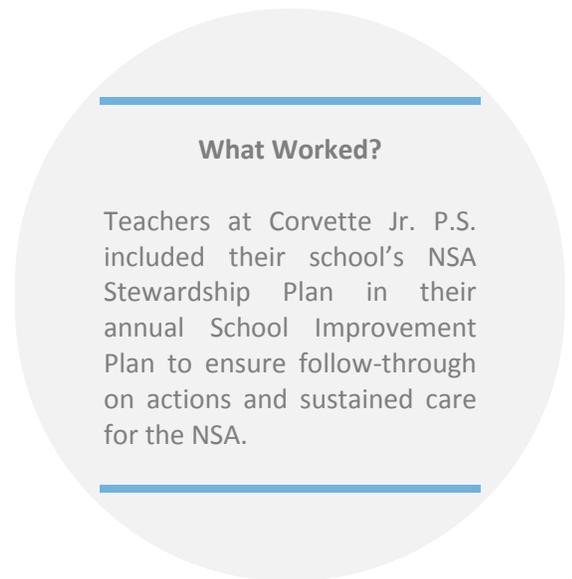
The Template includes areas to document the following:

- Vision for your NSA
- Description of the terrain, soils, wildlife and plant species
- History of your NSA
- Action items and timelines

Activities in the NSA can fall into two categories:

1. Improvement of the overall health of the area by addressing threats and opportunities; and
2. Exploration of the NSA to enrich learning experiences, curriculum expectations and/or inquiry-based learning.

The template provides a table to detail activities for category. Together, they will provide information for the Stewardship Plan which summarizes all the activities.



The Stewardship Plan can be updated throughout the year as needed. Plans should be updated at minimum once a year to ensure information remains current and to record details of necessary stewardship actions. Updating the Plan gives students and staff an opportunity to celebrate and evaluate their work and plan for the future.

Stewardship planning can be undertaken by anyone associated with the NSA: teachers, classes, administrators and/or clubs. The goal should be to involve each student and staff member in the NSA at some point over the course of the year. This goal reflects the principle that the more people involved in the NSA, the more advocates there are to ensure long-term health of the space. To encourage a variety of classes and groups to use the NSA, planning may need to include multiple individuals and groups. To effectively address certain stewardship threats it is important to work

cooperatively and designate an individual or group to be in charge of specific tasks (even if multiple groups are involved), to ensure necessary actions are completed.

## Seasonal Work

Some NSA stewardship tasks are seasonally dependant (ex. planting trees in Spring or Fall, not Summer or Winter). Working within the limits of seasonal changes and natural capacity will ensure that stewardship lessons and tasks occur at the proper times during the year. When using nature as a learning tool it is important to coordinate activities for the appropriate time of day, season and year; be flexible; and work within the limits of the Nature Study Area. This is why planning stewardship activities ahead of time is so important, as some activities may only be possible during certain times of the school year.

## Threats & Stewardship Actions

Table 1 lists common tasks and actions with tips for caring for vegetation in your NSA. Some tasks like planning or litter clean up can be done in any season. Other tasks like tree planting should be planned for early spring and late fall when the trees are dormant and the cool moist soil conditions reduce transplanting shock. Not all stewardship tasks will be applicable for every NSA; additional tasks may also be required that are not listed here.

Many stewardship actions will address a threat or opportunity in your NSA. The most common threats to an NSA are:

- Invasive species
- Trampling of plants and snapping branches
- Lawn mowers damaging the base of trees
- Lack or loss of biodiversity
- Litter
- Poor soil
- Community complaints about the NSA and demands for mowing

### What Worked?

The invasive Emerald Ash Borer killed almost all of the mature trees at Guildwood Jr. P.S. In response, they planted diverse native species to improve the diversity and resiliency of their NSA.

**Table 1. Stewardship Actions**

What	When	Further Information
<b>Tree &amp; Shrub Planting</b>	<b>Spring &amp; Fall</b>	<b>SECTION A4</b>
It is best to purchase trees and shrubs that are grown in a pot (as opposed to bare root trees) as these have the best survival; if you order trees through the Board they will likely send mature trees (5-10 years old, known as calliper trees) which will be planted by the Board. Always plant native species and, where possible, purchase local stock (where the seeds were sourced locally).	Early spring, just after the ground has thawed, is the best time to plant trees; shrubs can be planted throughout the spring; deciduous trees can also be planted in the Fall (late Sept – Nov)	<ul style="list-style-type: none"> <li>- Always plant native species to increase biodiversity (from locally sourced seed, if possible); see <i>Resources</i> under <i>Essential Skills &amp; Tips</i> for more information on native species</li> <li>- Contact <a href="#">Ontario One Call</a> to have the school yard cleared for underground infrastructure (cables, pipelines etc.) before you dig (1-800-400-2255); this is called ‘getting a locate’</li> <li>- For student plantings, ensure pot size is appropriate (1-5 Gallon, based on students’ age) so that students can handle the weight</li> </ul>
<b>Litter</b>	<b>Any time</b>	<b>SECTION B9</b>
Garbage tends to collect in NSAs, especially along fences.	Any time is a great time for a litter clean-up. Early Spring after the snow has melted is especially good.	<ul style="list-style-type: none"> <li>- Be prepared to sort the litter that is collected into recyclable and garbage</li> <li>- Using (mulch) buckets make it easy for students to collect litter</li> <li>- Use cloth or plastic gloves and be sure to go over safety precautions regarding picking up sharp and unsanitary objects</li> </ul>
<b>Mulching</b>	<b>Any time</b>	<b>SECTION A6</b>
Mulch is the wood chips that are put around trees and shrubs to add organic content to the soil, keep soil moist and shade competing adjacent vegetation. Mulch can also be added to pathways to avoid soil compaction.	Mulch can be added at any time of year; avoid moving mulch when air temperature is below freezing. Consider ordering piles in the winter in preparation for early Spring	<ul style="list-style-type: none"> <li>- Order piles of mulch through your custodian and arrange to have it dropped off as close to your NSA as possible</li> <li>- Mulch may not be able to be dropped when conditions are wet</li> <li>- Distribute mulch with empty buckets; you can ask a local ‘make-your-own wine’ store or Home Depot for left over 5-Gallon buckets or ask your custodial staff to save buckets</li> <li>- Where possible, plan to use a mulch pile in 1-2 weeks after drop-off as it may turn mouldy if left for a while (you can wear face masks when moving mouldy mulch to avoid breathing it in)</li> </ul>

What	When	Further Information
<b>Tree Care</b>	<b>Winter</b>	<b>SECTION A7</b>
Pruning trees and shrubs and cutting long grasses is optional but sometimes necessary to keep the NSA healthy and safe	The best time to prune most trees and shrubs is late summer, fall & winter	<ul style="list-style-type: none"> <li>- Talk to your caretaker and EcoSchools staff about pruning or cutting that need to get done</li> <li>- The NSA is meant to be left in a natural state however maintaining sight lines, NSA access and tree health may require pruning</li> </ul>
<b>Invasive Species</b>	<b>Spring &amp; Summer</b>	<b>SECTION A8</b>
Rapidly spreading, usually non-native, plants may grow in the NSA and should be removed to enable native species to grow.	Most non-native and invasive species should be removed during the growing season; it is best to remove species when they have flowered but before they seed	<ul style="list-style-type: none"> <li>- The most common herbaceous invasive species are garlic mustard, dog strangling vine and phragmites; non-native tree species include Norway Maple and Manitoba Maple</li> <li>- Most herbaceous plants and saplings can be removed by hand; larger trees require an arborist to be taken down; speak with your custodian and contact the Board</li> <li>- In rare circumstances harmful plants may grow, like poison ivy or giant hogweed; <b>do not touch them</b>; if these species are found contact Eco Schools immediately</li> </ul>
<b>Seed Collecting</b>	<b>Fall</b>	<b>SECTION A9</b>
Students can collect and store native seeds to plant in the NSA the following Spring.	Once the plant has flowered and produced seeds you can collect the seed head	<ul style="list-style-type: none"> <li>- Collect only 10% of the seed available for each species in your NSA to ensure responsible and ethical collection</li> <li>- Store seeds in a cool, dry place over the winter and plant in the Spring</li> </ul>

# Learning Objectives

---

Linking outdoor learning activities to curriculum objectives is an important part of promoting effective use of the NSA. Unstructured time in the NSA is beneficial for relaxation, curiosity and informal learning. However teachers will be able to better utilize the NSAs if they have lessons that cover curriculum expectations and encourage a deeper understanding and respect for nature. Having students and staff engage with the NSA on a regular basis will promote sustained stewardship of the area for future classes and the community to enjoy.

Staff and students can set goals for the Nature Study Area and how they want to incorporate nature into their learning experience. Learning opportunities will build on each other culminating in interdisciplinary learning experiences where the sciences, ethics and active living merge with art, language and mathematics. Exploring various subjects within the curriculum will help to diversify the scope of the learning opportunities in the NSA.

Using nature as a learning tool requires flexibility and a willingness to shift expectations. Nature tends to not perform on demand. Instead of declaring failure of a bird watching expedition where you don't see something, finding alternative approaches (like searching for nests or bird droppings) and repeating the lesson at a different time, you may have a very different outcome from the one you hoped for. This is all part of the inquiry process and sharing this with students is important.

## Citizenship

Building a strong relationship with nature often leads to improved environmental knowledge, ethics and actions. As students and staff explore the NSA there will be opportunities to discuss current environmental issues such as climate change, species declines and water quality, to name a few. The NSA provides a platform for active citizenship. It can help students to understand and reduce their own impacts on the natural world. Natural and scientific studies engage students when they illuminate local and global environmental problems and opportunities. NSAs offer a great opportunity to “think global and act local”.

Today's students know that they are inheriting serious environmental challenges from older generations. This can be a daunting thought. It can leave some students feeling disheartened or overwhelmed. It is important to acknowledge these emotions and allow students to express them. You can use NSAs to help your students develop the environmental knowledge, attitudes and skills they will need to overcome local and global environmental challenges. When small steps are taken to understand and address a big challenge, it can create a great sense of empowerment and optimism. This program is designed to give students and staff tangible actions to improve their NSA, school yard and the environment at large; thereby providing a healthy outlet for students to address local environmental issues.

### What Worked?

The grade 6 class at Corvette Jr. P.S. used their NSA throughout the year to study Biodiversity. By the time they reached that Science Unit, they had already explored major concepts first-hand.

### What Worked?

Students at Warden P.S. participated in the provincial review of the Greenbelt Plan by submitting comments on why the Greenbelt is important to them through an initiative by EcoSpark.

By incorporating citizenship into your NSA lessons you can empower students to take action on environmental issues. Students can research issues and send letters to elected officials, get involved in suitable environmental campaigns and participate in environmental planning processes. These are viable outlets to express concerns about the environment, participate in democratic decision-making and catalyze positive change. You can consult the *Citizenship Education Framework* in the Social Studies curriculum for more information.

Friends of the Rouge Watershed often leads environmental awareness and involvement campaigns. These campaigns engage students and the public in environmental challenges and encourage actions by decision-makers to improve environmental and community health. The creation of a healthy and sustainable 100+ km<sup>2</sup> National Rouge Park is one of our successful and ongoing campaigns.

Staff and students can research and take action on environmental issues they encounter while studying the NSA. The [Ontario Environmental Registry](#) posts information on various provincial environmental issues. It is a good source of technical information on proposals undergoing public review and accepting comment.

Many environmental organizations engage students in timely and effective actions to create positive environmental change through their campaigns. Some of the organizations we have worked with include:

- [Ontario Nature Youth Council](#)
- [EcoSpark](#)
- [Sierra Youth Coalition](#)
- [Earth Day Canada](#)
- [Environmental Defence – Young Reporters](#)

Additional organizations that run environmental campaigns include:

- [David Suzuki Foundation](#)
- [Toronto Environmental Alliance](#)
- [World Wildlife Fund](#)

## Lessons Plans

In Appendix B you will find lesson plans for grades K – 12 that will take staff and students outdoors to learn with and in nature. These lessons can be adapted to suit your needs and spark new ways to use the NSA and school yard. Some of the lessons focus on stewardship actions for your NSA; others encourage the exploration and appreciation of nature.

The lessons included in this program are only a starting point. There are many curriculum-linked opportunities for nature-based learning and educators can explore new ways to use outdoor spaces in

every-day learning. Consult Ontario’s environmental education policy document, [\*Acting Today, Shaping Tomorrow\*](#), for more ideas on how to engage students.

There is a full list of the lessons that were piloted as part of the NSA program on page 2, Appendix B, with associated worksheets.

## Looking for more?

Here are some organizations that provide further resources for outdoor and nature-based learning:

- TDSB EcoSchools
- Ontario EcoSchools
- EcoSpark
- Evergreen
- Monarch Teachers Network
- David Suzuki Foundation
- Canadian Museum of Nature
- UofT OISE – Environmental & Sustainability Education
- Project WILD
- Council of Outdoor Educators of Ontario

### What Worked?

At Lynnwood Heights Jr. P.S. the Grade 1/2 class made a habit of doing at least one class outside each week in June which allowed students to become more comfortable learning in the outdoor space.