Environmental Stewardship, Natural Resources and the ATV Club

> Bryan M Pellerin Base Environment Officer Jason Martin Base Natural Resources

Outline

- Environmental Stewardship
- Species at Risk
- Terrestrial Invasive Species

Environmental Stewardship

Bryan M Pellerin Base Environment Officer

Outline

ATV Club Activities

- Environmental Impacts of ATV Club Activities
- Terms and Concepts
- The Law
- Avoiding / Minimizing Environmental Impacts
- More Info

ATV Club Activities

- ATV operation
- Refueling
- Mechanical breakdowns, maintenance and recovery
- Trail construction
- Trail maintenance

Potential Environmental Impacts of ATV Club Activities

- Vegetation damage
- Stream bank erosion
- Waterway pollution
- Waterway siltation
- Fish habitat damage
- Wildlife habitat damage
- Wildlife harassment
- Noise pollution

Terms and Concepts

- Environment
- Sustainable Development
- Pollution
- Hazardous Materials
- Due Diligence

Environment

Components of the earth and includes:

- □ Air, land and water;
- All layers of the atmosphere;
- All organic and inorganic matter and living organisms; and
- Interacting natural systems that include the three components listed above

Sustainable Development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Pollution

Pollution is the harmful change in the environment caused by human activities.

Examples include:

- exhaust emissions
- release of toxic substances (e.g. spills of POL or other vehicle fluids)
- deposit and/or disturbance of silt in water (e.g. when fording)
- improper disposal of wastes
- noise

Shifting Emphasis of Environmental Management



Hazardous Materials

Any material that, if handled improperly, can endanger human health and well-being or the environment or equipment.

Examples:

POL poisons corrosive agents flammable substances ammunition radioactive substances



Due Diligence

Due diligence is the reasonable standard of care for the environment and for the health and safety of others that individuals shall exercise in the course of their actions and duties

It is up to you or the organization to prove innocence (reverse onus)

Standard of Care

• A duty to:

- behave responsibly by observing applicable laws and practices
- prepare for potential risks
- respond to incidents in a timely manner

Degree of Care

Gravity of potential harm or activity

- Reasonable alternatives available
- Knowledge and skill of personnel carrying out the activity

The Law

Fisheries Act

Canadian Environmental Protection Act

Canadian Environmental Assessment Act

Species at Risk Act

Fisheries Act

Protect fish, fish habitat and use by man of fish

Section 35 – Habitat Protection (DFO)

Section 36 – Deleterious Substance (Env Cda)

Canadian Environmental Protection Act

- Protect human health and environment from toxic substances
- Pollution prevention
- Sustainable development (management)

Canadian Environmental Assessment Act

Requirement to determine environmental impacts of project or activity before beginning project or activity

Planning tool

• OPI responsibility

Environmental Policies

DAOD 4003 series

Environmental Directives

BBSAI

RSOs

Avoiding / Minimizing Environmental Impacts

- Stay out of waterways
- Stay on designated trails
- Prevent spills
- Have a spill clean up plan and capability
- Report all spills regardless of size
- Report any significant trail damage
- Ensure well maintained ATV
- No garbage left behind
- No cat sanitation
- Enforce of Club rules

More Info

B Env O (loc 3853)

EH&S BBSAI (1000 series)

Borden EH&S Website http://borden.mil.ca/39/1.aspx

Species at Risk

C.F.B Borden Natural Resources Office Local: 2925

Blanding's Turtle

Emydoidea blandingii



Blanding's Turtle

Emydoidea blandingii

- Description: This turtle is approximately 20 cm (8 in.) in length. The dome shaped shell is black with yellow flecks. The underside of the neck and head is bright yellow and the bottom of the turtle is yellow with black patches.
- Habitat: Shallow water, generally in large marshes, shallow lakes, and similar water bodies. They feed on insects, molluscs, crustaceans, and vegetation. These turtles may travel on land, but typically do not wander very far from water except to nest.
- Ecology: Eggs may be laid between mid-June and mid-July. The young hatch in late summer and immediately move to water.
- Status: Listed as Threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 2005.
- Picture on previous slide is a Blanding's turtle female observed near Dieppe Rd. in 2011.

<u>Milksnake</u>

Lampropeltis triangulum



<u>Milksnake</u>

Lampropeltis triangulum

- Description: This snake is about 66-132 cm (26-52 in.) long. It is a slender snake with the head only slightly wider than the neck; large brown or reddish blotches on back with black edges on a tan or light gray background.
- Habitat: Milksnakes occur in a wide variety of terrestrial habitats, both forested and non-forested; requires suitable cover for egg laying, hibernation and body temperature regulation. This snake feeds primarily on small mammals, especially mice and smaller ground-nesting birds.
- Ecology: Mating generally occurs in May; the female lays the eggs in June and July. Eggs are usually deposited under rocks, boards, and other debris. However, they can also be laid in rotting vegetation, logs, or the burrows of mammals.
- **Status:** Listed as Threatened by COSEWIC in 2002.
- The snake on the left was found on base in 2009. The Milksnake is our most observed Species at Risk and can be found in most habitats on base.

Butternut

Juglans cinerea



Butternut

Juglans cinerea

- Description: Butternut is a medium-sized tree that can reach up to 30 m in height. It belongs to the walnut family and produces edible nuts in the fall. The bark of younger trees is grey and smooth, becoming ridged as it ages. Butternut is easily recognized by its compound leaves, which are made up of 11 to 17 leaflets (each nine to 15 centimetres long) arranged in a feather-like pattern. The fruit is a large nut that contains a single seed surrounded by a light green, sticky, fuzzy husk.
- Habitat: In Ontario, Butternut usually grows alone or in small groups in deciduous forests. It prefers moist, well-drained soil and is often found along streams. It is also found on well-drained gravel sites and rarely on dry rocky soil. This species does not do well in the shade, and often grows in sunny openings and near forest edges.
- Range: Butternut can be found throughout central and eastern North America. In Ontario, this species is found throughout the southwest, north to the Bruce Peninsula, and south of the Canadian Shield.
- **Status:** Designated Endangered in November 2003 by COSEWIC.
- <u>Note:</u> If tree removal is required (controlled by Range Standing Orders, Section 309) and you are not sure of the species of tree. Do <u>not</u> cut it and call Natural Resources local 2925

Chimney Swift

Chaetura pelagica



Chimney Swift *Chaetura pelagica*

- **Description:** This small bird is approximately 12-14 cm (4.7-5.5 in.) in length. It can be distinguished by its cigar-shaped body as well as its long, narrow, and pointed wings. It is dark brown in colour, has a brownish-gray throat, and shiny plumage.
- **Habitat:** Chimney Swifts are mainly associated with urban and rural areas where the birds can find chimneys to use as nesting and resting sites. They also nest in the trunks of hollow trees as well as on cave walls and rock crevices. This species of bird feeds solely on insects, which it spends most of its day hunting. It is common to find large flocks of Chimney Swifts near bodies of water due to the abundance of insects.
- **Ecology:** Each nesting site generally houses a single pair or birds. However, nesting sites such as larger trees and chimneys may serve as roosting sites before or after breeding. Chimney Swifts return every year to the same breeding and nesting site, which consists of a self-built nest attached to a vertical surface.
- Status: Listed as Threatened by COSEWIC in 2007.

Common Nighthawk

Chorideiles minor



Common Nighthawk

Chorideiles minor

- Description: This medium-sized bird is generally 21.5-25.5 cm (8.5-10 in.) in length. It has a large flattened head with larger eyes and a smaller bill; this species of bird also has long pointed wings with a white patch. This bird has a long rectangular tail that is notched at the tip and its underside is whitish with dark gray bars.
- Habitat: Nests in a wide range of open, vegetation-free habitats including sand dunes, recently harvested forests, burnt-over areas, grasslands, pastures, marshes, and river banks. This species also inhabits mixed and coniferous forests. The Common Nighthawk feeds on a variety of insects at dusk or dawn. It feeds primarily on flying ants and beetles, which it locates by utilizing its excellent night vision.
- Ecology: This migratory bird arrives in Canada from early May to mid-June. Diligently returning to nesting sites, females lay an average of two eggs directly on the ground up to mid-August.
- **Status:** Listed as Threatened by COSEWIC in 2007.

Whip-poor-will *Caprimulgus vociferus*



Whip-poor-will

Caprimulgus vociferus

- Description: This medium-sized bird is typically 23-25 cm (9.1-9.8 in.) long. It is mottled grayish brown with black spots and streaks. Whip-poorwills have large dark eyes, black chins, and rounded wings that have a reddish tinge.
- Habitat: Whip-poor-wills can be found in a variety of habitats including open woodlands, along forest edges, and pine plantations. They prefer to live in second growth forests, especially dry woods near fields and other open areas. These birds construct their nests directly on leaf litter on the forest floor beneath trees, bushes, or fallen branches near open areas. This species of bird flies during dusk and dawn as well as during full moons to catch its prey, which consists of insects such as moths and mosquitoes. These birds have been found at CFB Borden in 2007 during nocturnal road-based surveys.
- Ecology: This species of bird breeds twice per year, through May and June. The hatching of chicks is closely tied to moon cycles, resulting in better moonlit nights, allowing the parents to hunt longer and therefore supply the additional energy demands of their hatchlings.
- **Status:** Designated Threatened in April 2009 by COSEWIC.

Laura's Clubtail

Stylurus laurae



Laura's Clubtail

Stylurus laurae

- Description: This dragonfly is approximately 6.1-6.5 cm (2.4-2.6 in.) long. The head is greenish-yellow with a distinct black cross stripe on the face.
- Habitat: This species of dragonfly prefers clean, sandy-bottomed rivers and streams. They can occur in shallow, well shaded rivers and streams with cobble, sand or mud substrate. Laura's Clubtails prey on other insects.
- Ecology: These dragonflies are most active in the evening hours. It has been found that this species commonly rests on leaves approximately 0.3-3 m (1-10 ft.) above water and can easily be approached and identified.
- **Status:** Designated Endangered in April 2010 by COSEWIC.

Five-Lined Skink

Eumeces fasciatus



Five-Lined Skink

Eumeces fasciatus

- Description: This sole Ontario lizard is approximately 20 cm (8 in.) in length. It is generally black or gray in colour with five white or yellow stripes along its back. The colour of the tail is gray. As these lizards age, the stripes darken, resulting in a less contrasting pattern.
- Habitat: Five-lined skinks prefer wooded locations with sandy soil but can also be found in rocky habitat with crevices for concealment. These lizards like to sunbathe, meaning they can often be seen in sunny locations. They hibernate in small openings among rocks or buried in the soil. This species of lizard feed on organisms such as insects and worms. A specimen at the Royal Ontario Museum was found in Tosoronto Township which includes the west half of CFB Borden; meaning that suitable habitat does exist on the base.
- Ecology: These lizards can move quite quickly, making them hard to observe, especially when running through vegetation. Mating takes place between early and late March. The female lays eggs during the month of June; these eggs are usually deposited in a nest chamber that has been constructed inside a rotting log or under a board, flat rock or log.
- **Status:** Listed as Special Concern by COSEWIC in 2007.

Red-headed Woodpecker

Melanerpes erythrocephalus



Red-headed Woodpecker

Melanerpes erythrocephalus

- Description: This medium-sized bird is about 22-25cm (8.5-10 in.) long. It has a bright red head with large white wing-patch and white rump. The tail is blackish brown and the breast and belly is white.
- Habitat: Red-headed Woodpeckers prefer timber stands treated with pesticides or burned as well as savannah-like grasslands with forest edges and scattered trees. It can also be found in open deciduous woodlands, city parks, marshes, farmyards, along rivers and roads, and most open areas that contain dead standing trees (snags) and lush ground vegetation. This diet of this woodpecker consists of insects, fruit, nuts, corn, other birds, and mice.
- Ecology: The male chooses the nesting site, preferring cavities of dead or dying deciduous trees. These woodpeckers will also nest in healthy trees, hollow posts, and utility poles. The mating pair frequently returns to the same cavity or tree every year to build a nest, which begins as early as February. The female lays her eggs between mid-April and July. In some parts of its southern range, including Ontario, Red-headed Woodpeckers have been known to raise two broods of hatchlings.
- **Status:** Listed as Threatened by COSEWIC in 2007.

Species at Risk Act (S.C. 2002, c. 29) General Prohibitions

- 32. (1) No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species.
- (2) No person shall possess, collect, buy, sell or trade an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species, or any part or derivative of such an individual.
- 33. No person shall damage or destroy the residence of one or more individuals of a wildlife species that is listed as an endangered species or a threatened species, or that is listed as an extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada.
- Be aware that there are significant fines for contravening this act, up to \$50,000 for an individual and much higher for an organization.

If you find suspected Species at Risk

- Leave it alone. Move away from the location.
- Report sighting (time of day, location, species) to Natural Resources (local: 2925)

Terrestrial Invasive Species

CFB Borden Natural Resources Becky Mullin Local 7968

What are Invasive Species?

Any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem; and whose introduction does or is likely to cause economic or environmental harm or harm to human health.' (from www.invasive.org Center for invasive species and ecosystem health)



What are the impacts of Invasive

Species?

- Economic: impacts to forestry, agriculture and fisheries sectors.
- Ecological: decreases biodiversity. Put endangered and threatened species at further risk. In fact, invasive species are the second leading cause of animal population decline and extinction worldwide.
- Environment or human health: may impact soil or water quality or be a vector for disease



Common Reed (Phragmites australis)



Common Reed (Phragmites australis)

- Description: This plant is a tall perennial grass that is between 1.5-5m (5-16') in height. Common Reed can be distinguished from native reeds by the colour of the stem. The stems on native reeds are red to brown during the growing season, while the stems on Common Reeds are tan.
- Habitat: The Common Reed has a wide variety of habitats including wetlands, stream banks, lakeshores, ponds, wet fields and ditches.
- Dispersion: Seeds are carried by wind and water, but the most common method of transfer is from pieces of the root system being carried away on tires of vehicles.

Garlic Mustard (Allaria petiolata)



Garlic Mustard (Allaria petiolata)

- Description: In the first year the plant consists of a cluster of 3 or 4 dark green, kidney shaped leaves. These leaves overwinter and in the second year the plant has triangular and sharply toothed leaves. Numerous white flowers with 4 petals each are located at the top of the usually 1 metre tall 2nd year plant stems. The fruit is slender, typically 2-6cm long and holds 10-20 thin black seeds.
- Habitat: Garlic Mustard often grows in the understory of forests or along forest edges.
- Dispersion: This species of plant reproduces only by seed and can self-pollinate. Seeds can be transported by humans in their clothing, vehicles etc. as well as by wildlife such as deer, birds and rodents. Seeds may remain viable in soil for up to five years

Spotted Knapweed (Centaurea maculosa)



Spotted Knapweed (Centaurea

maculosa)

- Description: Spotted Knapweed gets its spotted appearance from the black tipped bracts on the flower head. The plant typically forms a rosette in the 1st year and forms a flowering stem in subsequent years. Flowers are purple to pink, rarely white. This plant grows to a height of 1.5m and has a stout taproot. Knapweed releases a toxin into the soil that hinders or prevents the growth of other plants around it.
- Habitat: Spotted Knapweed is most common in sunny habitats with well-drained or gravelly soils. It grows on heavily disturbed sites, roadsides, agricultural field margins and sandy ridges.
- Dispersion: This plant spreads mainly by seed and is a prolific seed producer, individual plants produce up to 140 000 seeds/m². Seeds are carried and spread when the plants are snagged on the undercarriage of vehicles, including ATVs.

Purple Loosestrife (Lythrum salicaria)





Purple Loosestrife (Lythrum salicaria)

- Description: Purple loosestrife is an erect perennial herb that grows up to 2.5m tall, develops a strong taproot and may have up to 50 stems arising from its base. The stem of this plant is square in cross-section. This plant has an enormous capacity to reproduce, grows rapidly and lacks natural diseases or predators in our environment.
- Habitat: Purple loosestrife usually grows in ditches, fens, marshes and the borders of ponds and rivers.
- Dispersion: This plant can be spread by seed or by reproducing vegetatively at the rate of about 1 foot per year. A mature plant may have as many as thirty flowering stems and is capable of producing an estimated two to three million seeds per year. Seeds are tiny, like grains of sand and can be carried away by people, vehicles, animals and birds.

Wild Parsnip (Pastinaca sativa)



Wild Parsnip (Pastinaca sativa)

- Description: This is the escaped wild version of domestic parsnip. In the first year the plant forms a rosette of leaves. In the second year parsnip grows up to 1.5 m tall and has a hollow, deeply grooved stem. Compound leaves form at the base of the plant resemble and celery. The yellow flowers are in an umbel shape at the top of the stem.
- Habitat: Parsnip thrives in rich, alkaline, moist soil, but can survive in almost any conditions. It is commonly found along roadsides and in pastures and fields.
- Dispersion: This plant reproduces by seed and can quickly invade and modify open habitats.
- Warning: This plant contains chemicals called psoralens that can cause a phyto-photodermatitis. If you get the sap on your skin and it is exposed to the sun, it will cause a severe rash/burn on the affected area. Please report any sightings of this plant to Natural Resources (local 7968)

Comparing the Culprits: Wild Parsnip vs. Poison Ivy

	Wild parsnip	Poison ivy
History of contact	No previous exposure required. Everyone can be affected if sufficiently exposed.	Prior exposure and sensitization to poison ivy required. Only 50-85 percent of the population will ever develop an immune response to poison ivy (and to chemically related poison oak and poison sumac).
Onset	First exposure – redness within 24 hours, blisters for several days.	It may take repeated exposures to develop sensitivity, though for many, one touch is enough.
	Subsequent exposures – same reaction as first exposure	Subsequent exposures – symptoms occur in several hours to 2 days. Because poison ivy's reactive oil can last for months on clothing, pet fur and other surfaces, exposure can occur repeatedly
Location on body	Limited to areas exposed to sun.	Can occur anywhere poison ivy's reactive oil contacts the skin; often transferred by hands or clothing to areas "where the sun don't shine."
Symptoms	Burning pain, which is short-lived.	Itching, which can last for weeks if untreated.
Course	No new redness or blisters over time; condition confined to initial sites.	New lesions can appear over a week or more; different skin areas react at different rates.
"Signature" on skin	Reddish or brownish pigmentation, noticeable for months or years.	None.

*Adapted from Sommer, Robert G. and Otis F. Jillson, 1967. "Phytophotodermatitis." New England Journal of Medicine 276(26): 1484-6 From the story, "Burned by wild parsnip" Wisconsin Natural Resources magazine 1999-06-01

Japanese Knotweed (Fallopia japonica)



Japanese Knotweed (Fallopia japonica)

- Description: Japanese knotweed is an upright, shrublike, herbaceous perennial that can grow to over 3 m in height. As with all members of this family, the base of the stem above each joint is surrounded by a membranous sheath. Stems of Japanese knotweed are smooth, stout and swollen at joints where the leaf meets the stem. Although leaf size may vary, they are normally about 15 cm long by 7-10 cm wide, broadly oval to somewhat triangular and pointed at the tip. The minute greenish-white flowers occur in attractive, branched sprays in summer and are followed soon after by small winged fruits. Seeds are triangular, shiny, and very small, about 25 mm long
- Habitat: Japanese knotweed can tolerate a variety of adverse conditions including full shade, high temperatures, high salinity, and drought. It is found near water sources, such as along streams and rivers, in low-lying areas, waste places, utility rights-of-way, and around old homesites. It can quickly become an invasive pest in natural areas after escaping from cultivated gardens.
- Dispersion: This plant reproduces by seed and vegetatively. Seeds mature in the autumn and can be spread long distances by people, wind and animals. Vegetatively, a centimetre of root can produce a new plant every ten days and remain dormant underground for nearly twenty years and roots can spread up to 18 m from the parent plant. Japanese Knotweed is a very aggressive, fast spreading, hard to control plant. The best way to control it, is to prevent its spread in the first place.

What you can do to prevent the spread of invasives.

- Wear outer layers of clothing that are not `seed-friendly'. For instance, low-tread footwear that doesn't hold soils, seeds or plant parts. Avoid exposing Velcro, bulky knits (wool, fleece), pants with cuffs or any loose woven material that can hold seeds. Wear a hat to cover hair.
- Check yourself for soils, seeds and plant parts. Do not clean clothing, footwear or gear in or near waterways, you may spread invasives downstream.
- Prior to moving equipment, vehicles and trailers, spray, scrape or brush soils, seeds and plant parts from exterior surfaces to minimize the risk of transporting them. A car wash is ideal for this, don't forget to spray the tire treads and undercarriage as well.

What you can do to prevent the spread of invasives.

Stay on designated trails, roads, and other developed areas. Minimize soil disturbance; it may promote invasive plant seed germination and establishment. By venturing into uninfested areas, you may introduce invasive species by carrying seeds or roots.



Thank you



Thank you!

