

Odonata Survey 2005:  
(Damselflies and Dragonflies)  
Whites Point Property,  
Digby County, Nova Scotia

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## Summary and Comments

I spent two days, August 6th and 7th, surveying for Odonata (Damselflies and Dragonflies) on the Whites Point Property, accompanied by my son Michael, and on the morning of the 6th by David Kern. We visited all freshwater and brackish habitats at the appropriate time of day and weather condition for effective sampling of these insects.

I documented all aquatic habitats, and we took 51 records of 21 species. Only one species we encountered is of some conservation concern - *Lestes forcipatus*, which is ranked as undetermined due to past confusion with the similar and common *L. disjunctus* -the balance being species common in Nova Scotia.

Isug gest in Table 1 other Odonata species which may be found in the aquatic habitats of the property, depending upon season of survey.

The principal Odonata diversity on the property occurs in man-made habitats. Whether this diversity will persist through active industrial activities will be dependent upon the nature of those activities.

During the reclamation phase of the project, efforts should be made to ensure that the freshwater aquatic habitats recover their diversity in Odonata. This may be beneficial, as small still-water habitats are rare along North Mountain, and that area of the province may host migratory Odonata (*Anax junius* in particular) which would benefit from the presence of those habitats. At this time, there is no indication of rare Odonata in the natural bog and stream habitats present on the property, and hence no particular concern that the still-water species will compete with them. If rare Odonata are discovered in the future outside of the man-made habitats, consideration should be given to removing the constructed still-water habitats during the reclamation phase.

## The Property

The Whites Point Property is located on Digby Neck, Digby County, Nova Scotia. It is on NTIS 1:50,000 map 21B08, and 70y1 of The Nova Scotia Atlas.

The property extends from the top of North Mountain to the shore of the Bay of Fundy.

North Mountain is a basalt formation extending from Long Island to the Blomidon Peninsula. On Digby Neck it has a shallow over-burden of plant material and in places glacial till. There are few natural habitats on the slopes of the mountain - some intermittent streams of very short catchment and a coastal bog - and most aquatic habitats on the property are man-made, or heavily man-influenced.

Past impacts include a gravel pit at Whites Cove, and logging on the top of the mountain - with attendant road construction.

## Methods

We collected and documented all Odonata to species at each specific site within the property, and are depositing all voucher specimens with this report. We encountered no exuviae or larvae.

We visited all sites twice on August 6th, and once for a longer period each on August 7th. The weather was sunny and clear during the visits on both days, ideal weather for studying Odonata. Sites were located by GPS ( $\pm 10$  metres), and photographed.

I am reasonably sure that we have vouchered representatives of all species present as adults on the property on those two days, with the exception of *Celithemis elisa* and *Pantala flavescens* - which I can identify unambiguously on the wing.

Records and sites have been documented according to the ADIP (Atlantic Dragonfly Inventory Program) protocols.

Some species have not been encountered at water, and are recorded as from 'Whites Point Area'.

**Figure 1: Freshwater aquatic sites on the Whites Point Property**



## Sites

See Figure 1, page 3, for locations of sites on the property.

There are three natural sites on the property which appear largely undisturbed.

**'Whites Point Bog Stream'** is a small, intermittent stream which flows down into 'Whites Point Bog'. During our visit it was dry, and it seems unlikely to be a viable habitat for Odonata. ADIP Site Code NS0855, 44.4691°N, -66.1372°W. Figure 1, number 1.

**'Whites Point Stream'** is also a small stream which flows down just east of Whites Point. It may harbour Damselfly species, although none were encountered. It has been mildly affected by the ATV trail along the shore. ADIP Site Code NS0854, 44.4668°N, -66.1423°W. Figure 1, number 2.

**'Whites Point Bog'** is a circumneutral bog/fen in an un-named cove midway between Whites Point and West Mink Cove. The area just behind the cobble beach is wet, with shallow pools, and may house some species of interest, although the wet area is very small in extent and largely lacking in *Sphagnum* moss. The oily surface of the small ponds may be a result of ATV activity in the area, or of minerals naturally occurring. The inland area of the bog is dry, and probably does not harbour larval Odonata. ADIP Site Code NS0853, 44.4691°N, -66.1382°W. Figure 1, number 3.

There are five sites on the property which appear to be man-made, or heavily altered by human activity.

**'Typha Marsh'** is on the top of the mountain. It has little standing water and a dense growth of *Typha latifolia* (Cattail). It is a viable habitat for many Odonata species. The marsh has likely been formed or altered by road construction push-off. ADIP Site Code NS0847, 44.4559°N, -66.1386°W. Figure 1, number 4.

**'Chara Pond'** is also on the top of the mountain. It was likely formed by excavation of till and soil for road construction. The substrate is thin organic silt over bedrock. It is surprising that the dominant plant of the pond is *Chara algae* (Stinkwort), which is characteristic of water rich in calcium. This site was diverse in Odonata species. ADIP Site Code NS0848, 44.4554°N, -66.1391°W. Figure 1, number 5.

**'Abandoned Pit Fen'** is just inland of Whites Cove. It was apparently a gravel pit in the past, but the east side has become a small circumneutral fen, which may house species of that habitat type. The open pond area on the west side is included with the next site. ADIP Site Code NS0849, 44.4641°N, -66.1427°W. Figure 1, number 6.

**'New Settle Pond'** is also just inland of Whites Cove, constructed recently as a settle pond for run-off and cleaning water. It was shallow during our visit, but has the capacity for deeper water. It was rich in Odonata species, and has the potential for a very large list during the full

Odonata Survey 2005:  
(Damselflies and Dragonflies)  
Whites Point Property,  
Digby County, Nova Scotia

6

season. Included in this site are the pond on the west side of the old gravel pit, and the secondary settle pond on the west site of the main settle pond. ADIP Site Code NS0851, 44.4641°N, -66.1427°W. Figure 1, number 7.

**'Whites Point Marsh'** is formed by the overflow from the secondary settle pond, but may have had a natural origin. It drains to the shore immediately east of Whites Point. It has a small potential for Odonata, and has been somewhat affected by the ATV track along the shore. ADIP Site Code NS0852, 44.4647°N, 66.1441°W. Figure 1, number 8.

## Species

We encountered the following species on August 6th and/or 7th, 2005. See Table 1 for conservation ranks. Six-digit numbers are ADIP Specimen Numbers.

### Suborder Zygoptera – Damselflies

#### Family Lestidae – Spreadwings

*Lestes disjunctus* Sélys 1862-Northern Spreadwing

309006 - Specimen - Adult - 'New Settle Pond' August 7 2005 - Paul M. Brunelle

*One female taken, the only individual of the species seen.*

*Lestes forcipatus* Rambur 1842 - Sweetflag Spreadwing

308965 - Specimen - Adult - 'Chara Pond'

August 6 2005 - Paul M. Brunelle

*Second visit this date. Towing pairs were laying in marginal plants, including Juncus Sp.*

309011 - Photograph - Adult - 'Chara Pond'

August 7 2005 - Paul M. Brunelle.

#### Family Coenagrionidae - Pond Damsels

*Enallagma aspersum* (Hagen 1861) - Azure Bluet

308968 - Specimen - Adult - 'Chara Pond'

August 6 2005 - Paul M. Brunelle

*Second visit this date. Males were perching on the Chara surface; towing and laying pairs similarly.*

309013 - Photograph - Adult - 'Chara Pond'

August 7 2005 - Paul M. Brunelle.

309005 - Specimen - Adult - Whites Point Area

August 6 2005 - Paul M. Brunelle

*One male foraging in grass beside the ATV track.*

*Enallagma civile* (Hagen 1861) - Familiar Bluet

308982 - Specimen-Adult-'New Settle Pond'

August 6 2005 - Michael E. Brunelle.

309003 - Specimen-Adult-'New Settle Pond'

August 7 2005 - Paul M. Brunelle

308992-Specimen-Adult - Whites Point Area

August 6 2005 - Paul M. Brunelle

*One male foraging in grass beside ATV track.*

Odonata Survey 2005:  
(Damselflies and Dragonflies)  
Whites Point Property,  
Digby County, Nova Scotia

8

***Ischnura posita*** (Hagen 1861) - Fragile Forktail

**308971** - Specimen - Adult - 'Chara Pond'

August 6 2005 - Paul M. Brunelle

*Second visit this date. Males perching on Chara. Towing pairs seen.*

**309015** - Observation - Adult - 'Chara Pond'

August 7 2005 - Paul M. Brunelle.

***Ischnura verticalis*** (Say 1839) - Eastern Forktail

**308969** - Observation - Adult - 'Chara Pond'

August 6 2005 - Paul M. Brunelle

*Second visit this date. Males perching on Chara surface, females laying similarly.*

**309014** - Observation - Adult - 'Chara Pond'

August 7 2005 - Paul M. Brunelle

**308979** - Observation - Adult - 'New Settle Pond'

August 6 2005 - Paul M. Brunelle

**308983** - Specimen - Adult - 'Whites Point Bog'

August 6 2005 - Paul M. Brunelle

**308996** - Observation - Adult - 'Whites Point Bog'

August 7 2005 - Paul M. Brunelle.

***Nehalennia irene*** (Hagen 1861) - Sedge Sprite

**308963** - Specimen - Adult - 'Typha Marsh'

August 6 2005 - Paul M. Brunelle

*Second visit this date. Laying in *Typha latifolia* near the water surface.*

**309009** - Observation - Adult - Typha Marsh

August 7 2005 - Paul M. Brunelle

**308984**-Specimen-Adult-'Whites Point Bog'

August 6 2005 - Paul M. Brunelle

*Only at small ponds in the bog.*

**308995**-Observation-Adult-'WhitesPoint Bog'

August 7 2005 - Paul M. Brunelle.

**Suborder Anisoptera – Dragonflies**

**Family Aeshnidae – Darners**

***Aeshna canadensis*** Walker 1908-Canada Darner

**308974** - Specimen - Adult - 'Abandoned Pit Fen'

August 6 2005 - Paul M. Brunelle

*A female foraging over the fen - possibly resident.*



***Aeshna eremita*** Scudder 1866 - Lake Darner  
**308989**-Specimen-Adult - Whites Point Area  
August 6 2005 - Michael E. Brunelle  
*Flying along the ATV track near the treeline*

***Aeshna interrupta interrupta*** Walker 1908 – Variable Darner  
**308962** - Specimen - Adult - 'Typha Marsh'  
August 6 2005 - Paul M. Brunelle  
*Second visit this date. Hovering in typical fashion over the few areas of surface water.*  
**309007**-Observation - Adult - 'Typha Marsh'  
August 7 2005 - Paul M. Brunelle  
**308987**-Specimen-Adult- 'Whites Point Bog'  
August 6 2005 - Paul M. Brunelle  
*One female feeding low over the drier uphill sections of the bog.*

***Aeshna tuberculifera*** Walker 1908-Black-tipped Darner  
**308967** - Specimen - Adult - 'Chara Pond'  
August 6 2005 - Paul M. Brunelle  
*Second visit this date. Foraging over the pond about two metres above the water surface.*

***Aeshna umbrosa umbrosa*** Walker 1908- Shadow Darner  
**309010** - In Hand - Adult - 'Typha Marsh'  
August 7 2005 - Paul M. Brunelle  
*Foraging on the road near 'Typha Marsh', possibly not resident in the marsh.*  
**309016**-Specimen-Adult - 'New Settle Pond'  
August 7 2005 - Paul M. Brunelle  
*Female taken while ovipositing in the mud along the edge of the pond.*

***Anax junius*** (Drury 1770)-Common Green Darner  
**308975**-Observation-Adult-'New Settle Pond'  
August 6 2005 - Michael E. Brunelle.  
**308997**-Specimen-Adult - 'New Settle Pond'  
August 7 2005 - Michael E. Brunelle  
*A towing pair observed, indicating ovipositing.*  
**308986**-Observation-Adult - 'Whites Point Bog'  
August 6 2005 - Paul M. Brunelle  
*Feeding over the bog and shore.*

### **Family Corduliidae – Emeralds**

*Somatochlora elongata* (Scudder 1866)-Ski-tailed Emerald

**308980**-Specimen-Adult - 'New Settle Pond'

August 6 2005 - Michael E. Brunelle

*Males patrolling along the shore.*

**308998** - Observation - Adult - 'New Settle Pond'

August 7 2005 - Paul M. Brunelle

*Males patrolling, and a female seen ovipositing at the pond margin.*

*Somatochlora walshii* (Scudder 1866) - Brush-tipped Emerald

**308972**- Specimen-Adult-'Abandoned Pit Fen'

August 6 2005 - Paul M. Brunelle

*A male territorial over the fen.*

**308994** - Observation - Adult - 'Abandoned Pit Fen'

August 7 2005 - Paul M. Brunelle

*One male patrolling over the fen.*

### **Family Libellulidae – Skimmers**

*Celithemis elisa* (Hagen 1861) - Calico Pennant

**308999** - Observation - Adult - 'New Settle Pond'

August 7 2005 - Paul M. Brunelle

*One male perched on the grass at the pond edge.*

*Libellula pulchella* Drury 1770-Twelve-spotted Skimmer

**308978**-Observation-Adult-'New Settle Pond'

August 6 2005 - Michael E. Brunelle.

**309000**-Specimen-Adult - 'New Settle Pond'

August 7 2005 - Michael E. Brunelle

*Males present in small numbers; females were observed ovipositing several times, generally in shallows at edge of the pond.*

*Libellula quadrimaculata* Linnaeus 1758 – Four-spotted Skimmer

**308966** - Specimen - Adult - 'Chara Pond'

August 6 2005 - Paul M. Brunelle

*Second visit this date. Males were abundant and fighting. Females were seen ovipositing several times; one was taken into wheel.*

**309012** - Observation - Adult - 'Chara Pond'

August 7 2005 - Paul M. Brunelle

**309017** - Observation - Adult - 'New Settle Pond'

August 7 2005 - Paul M. Brunelle.

***Pantala flavescens*** (Fabricius 1798) – Wandering Glider

**308977** - Observation - Adult - 'New Settle Pond'

August 6 2005 - Paul M. Brunelle.

**309002** - Observation - Adult - 'New Settle Pond'

August 7 2005 - Paul M. Brunelle.

***Plathemis lydia***(Drury1770)-Common Whitetail

**308970** - Observation - Adult - 'Chara Pond'

August 6 2005 - Paul M. Brunelle

*Second visit this date. A male passing through, possibly not resident.*

**308976**-Observation-Adult-'NewSettle Pond'

August 6 2005 - Michael E. Brunelle

**309001**-Specimen-Adult - 'New Settle Pond'

August 7 2005 - Paul M. Brunelle

*Females were observed ovipositing several times, they are much smaller than L. pulchella females.*

***Sympetrum internum*** Montgomery 1943 - Cherry-faced Meadowhawk

**308964** - Specimen - Adult- 'Typha Marsh'

August 6 2005 - Paul M. Brunelle

*Second visit this date. Males were territorial on and around the marsh.*

**309008**-Observation - Adult - 'Typha Marsh'

August 7 2005 - Paul M. Brunelle

**308973** - Observation - Adult - 'Abandoned Pit Fen'

August 6 2005 - Paul M. Brunelle

*Males were territorial on the fen.*

**308981** - Specimen - Adult, Teneral - 'New Settle Pond'

August 6 2005 - Michael E. Brunelle

**309004** - Specimen - Adult - 'New Settle Pond'

August 7 2005 - Paul M. Brunelle.

Table 1:

Odonata species known in Nova Scotia, and their potential for the Whites Point Property.

- \* Encountered on the Whites Point Property during the August 6 and 7th, 2005, Odonata Survey (21 species).  
Throughout the table, ranks of conservation concern are given in bold type.

**Note 1: Global Ranking.**

Ranking by NatureServe. G1, G2, and G3 indicate global conservation concern. T or Q ranks indicate taxonomic complexities or uncertainty.

**Note 2: General Status of Species in Canada (GSSC) National Ranking.**

Website accessed August 17th, 2005: <http://www.wildspecies.ca>  
Ranks 1, 2, and 3 indicate conservation concern. Ranks 5 and 6 indicate potential conservation concern.

**Note 3: Nova Scotia Department of Natural Resources Provincial Colour Ranking.**

Currently based on assessment of GSSC ranks. These ranks may differ from those given on the NSDNR website (M. Elderkin, NSDNR, pers. comm.) and are converted from the GSSC Nova Scotian ranks (Note 4 below) as follows;

GSSC 1 or 2 = Red.  
GSSC 3 = Yellow.  
GSSC 4 = Green.  
GSSC 5 = Undetermined.  
GSSC 6 = Unassessed.

Red, and Yellow indicate conservation concern; Undetermined (Undet.) indicates potential provincial conservation concern. Historical (Hist.) indicates the species has not been found in the province in >50 years. Unassessed indicates that the species has not been formally ranked.

**Note 4: General Status of Species in Canada (GSSC) Nova Scotia Ranking.**

Website accessed August 17th, 2005: <http://www.wildspecies.ca>  
Ranks 1, 2, and 3 indicate provincial conservation concern. Ranks 5 and 6 indicates potential provincial conservation concern.

**Note 5: Property Status.**

This indicates the known or possible resident status of species on the Whites Point property.

- = unlikely to be present.

P = potentially present in some habitats as a resident population (larval development). If encountered during the 2005 survey, the species was found only away from aquatic habitats.

PE = 2005 survey was probably too early in the season to encounter adults of the species if present.

PL = 2005 survey was probably too late in the season to encounter adults of the species if present.

1 = known to be resident through emergence evidence (exuviae or teneral).

2.1 = likely to be resident as ovipositing has been observed.

2.2 = likely to be resident as mating behaviour has been observed.

3 = possibly resident, as adults were present at the appropriate habitat.

**Note 6: General.**

This indicates whether there is potential larval habitat for the species on the property.

NH = no aquatic habitat appropriate to the species is known on the Whites Point Property.

AH = aquatic habitat appropriate to the species is known on the Whites Point Property.

**Note 7: Site Columns.**

The remaining columns indicate the known and potential species status in each of the eight sites on the property.

P = indicates that the site could potentially harbour larvae of the species. These are assessments based on my experience with the species, and are not proof of presence.

In particular, note that the Coastal Bog is unlikely to harbour the number of species indicated as potentially present.

**Table 1: Odonata species known in Nova Scotia, and their potential for the Whites Point Property.**

Scientific Name	English Name	Global NatSrv	Canada GSSC	NSDNR Colour	NSDNR GSSC	Property Status	General	Typha Pond	Chara Pond	Settle Pond	Pit Fen	Overflow Marsh	Coastal Bog	Bog Stream	Point Stream
		1	2	3	4	5	6	7							
Suborder <i>Zygoptera</i>		Damselflies													
Family <i>Calopterygidae</i>		Broadwings													
<i>Calopteryx aequabilis</i> Say 1839	River Jewelwing	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Calopteryx amata</i> Hagen 1890	Superb Jewelwing	G4	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Calopteryx maculata</i> (Bea. 1805)	Ebony Jewelwing	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
Family <i>Lestidae</i>		Spreadwings													
<i>Lestes congener</i> Hagen 1861	Spotted Spreadwing	G5	4	Green	4	PE	AH	P	P	P	P	P	P	-	-
* <i>Lestes disjunctus</i> Sélys 1862	Northern Spreadwing	G5T5	4	Green	4	3	AH	P	3	P	-	P	-	-	-
<i>Lestes dryas</i> Kirby 1890	Emerald Spreadwing	G5	4	Green	4	PL	AH	P	P	P	P	P	P	-	-
<i>Lestes eurinus</i> Say 1839	Amber-winged Spreadw.	G4	4	Undet.	5	-	NH	-	-	-	-	-	P	-	-
* <i>Lestes forcipatus</i> Rambur 1842	Sweetflag Spreadwing	G5	4	Undet.	5	2.1	AH	P	2.1	P	-	P	-	-	-
<i>Lestes rectangularis</i> Say 1839	Slender Spreadwing	G5	4	Green	4	PL	AH	P	P	P	P	P	P	-	-
<i>Lestes unguiculatus</i> Hagen 1861	Lyre-tipped Spreadwing	G5	4	Green	4	PE	NH	P	P	P	P	P	P	-	-
<i>Lestes vigilax</i> Hagen 1862	Swamp Spreadwing	G5	3	Undet.	5	PL	AH	P	P	P	P	P	P	-	-
Family <i>Coenagrionidae</i>		Pond Damsels													
<i>Amphiagrion saucium</i> (Bu. 1839)	Eastern Red Damsel	G5	4	Green	4	PL	AH	-	-	-	P	P	P	-	-
<i>Argia f. violacea</i> (Hagen 1861)	Violet Dancer	G5T5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Argia moesta</i> (Hagen 1861)	Powdered Dancer	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Chromagrion conditum</i> (H. 1876)	Aurora Damsel	G5	4	Green	4	PL	AH	P	P	P	-	P	-	-	-
<i>Coenagrion interrogatum</i> (H. 1876)	Subarctic Bluet	G5	4	Undet.	5	PL	AH	-	-	-	P	-	P	-	-
<i>Coenagrion resolutum</i> (H. 1876)	Taiga Bluet	G5	4	Red	2	PL	AH	-	P	P	P	-	P	-	-
* <i>Enallagma aspersum</i> (H. 1861)	Azure Bluet	G5	4	Green	4	2.1	AH	-	2.1	P	-	-	-	-	-
<i>Enallagma boreale</i> Sélys 1875	Boreal Bluet	G5	4	Green	4	PL	AH	P	P	P	-	P	-	-	-
<i>Enallagma carunculatum</i> M. 1895	Tule Bluet	G5	4	Undet.	5	-	NH	-	-	-	-	-	-	-	-
* <i>Enallagma civile</i> (Hagen 1861)	Familiar Bluet	G5	4	Green	4	2.2	AH	-	-	2.2	-	-	-	-	-
<i>Enallagma cyathigerum</i> (Ch., 1840)	Northern Bluet	G5	4	Undet.	5	PL	AH	P	P	P	-	-	-	-	-
<i>Enallagma ebrium</i> (Hagen 1861)	Marsh Bluet	G5	4	Green	4	PL	AH	P	P	P	P	P	P	-	-
<i>Enallagma exulans</i> (Hagen 1861)	Stream Bluet	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Enallagma hageni</i> (Walsh 1863)	Hagen's Bluet	G5	4	Green	4	PL	AH	P	P	P	P	P	P	-	-
<i>Enallagma minusculum</i> M. 1895	Little Bluet	G3G4	3	Yellow	3	-	NH	-	-	-	-	-	-	-	-
<i>Enallagma signatum</i> (Hagen 1861)	Orange Bluet	G5	4	Undet.	5	-	NH	-	-	-	-	-	-	-	-
<i>Enallagma vernale</i> Gloyd 1943	Vernal Bluet	G4Q	5	Undet.	5	-	NH	-	-	-	-	-	-	-	-
<i>Enallagma vesperum</i> Calvert 1919	Vesper Bluet	G5	4	Undet.	5	-	NH	-	-	-	-	-	-	-	-
* <i>Ischnura posita</i> (Hagen 1861)	Fragile Forktail	G5	4	Green	4	2.2	AH	P	2.2	P	P	P	P	-	P
* <i>Ischnura verticalis</i> (Say 1839)	Eastern Forktail	G5	4	Green	4	2.2	AH	P	2.2	P	P	P	3	-	P

**Table 1: continued**

Scientific Name	English Name	Global NatSrv	Canada GSSC	NSDNR Colour	NSDNR GSSC	Property Status	General	Typha Pond	Chara Pond	Settle Pond	Pit Fen	Overflow Marsh	Coastal Bog	Bog Stream	Point Stream
		1	2	3	4	5	6	7							
<i>Nehalennia gracilis</i> Morse 1895	Sphagnum Sprite	G5	4	Undet.	5	PL	AH	-	-	-	P	-	P	-	-
* <i>Nehalennia irene</i> (Hagen 1861)	Sedge Sprite	G5	4	Green	4	2.1	AH	2.1	P	P	P	P	2.2	-	-
Suborder <i>Anisoptera</i>															
Family <i>Aeshnidae</i>															
* <i>Aeshna canadensis</i> Walker 1908	Canada Darner	G5	4	Green	4	3	AH	P	-	P	3	P	P	-	-
<i>Aeshna clepsydra</i> Say 1839	Mottled Darner	G4	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Aeshna constricta</i> Say 1839	Lance-tipped Darner	G5	4	Undet.	5	PL	AH	P	-	P	-	-	-	-	-
* <i>Aeshna eremita</i> Scudder 1866	Lake Darner	G5	4	Green	4	P	AH	-	-	-	-	-	-	-	-
* <i>Aeshna i. interrupta</i> Walker 1908	Variable Darner	G5T5	4	Green	4	3	AH	3	-	-	-	-	-	-	-
<i>Aeshna septentrionalis</i> Burm. 1839	Azure Darner	G5	4	Hist.	5	PE	AH	-	-	-	P	-	P	-	-
<i>Aeshna sitchensis</i> Hagen 1861	Zigzag Darner	G5	4	Green	4	PL	AH	-	-	-	P	-	P	-	-
<i>Aeshna subarctica</i> Walker 1908	Subarctic Darner	G5	4	Green	4	PE	AH	-	-	-	P	-	P	-	-
* <i>Aeshna tuberculifera</i> Walker 1908	Black-tipped Darner	G4	4	Green	4	P	AH	-	P	P	-	-	P	-	-
* <i>Aeshna u. umbrosa</i> Walker 1908	Shadow Darner	G5T5	4	Green	4	2.1	AH	P	P	2.1	P	P	P	-	-
<i>Aeshna verticalis</i> Hagen 1861	Green-striped Darner	G5	4	Green	4	PE	AH	-	-	-	P	-	P	-	-
* <i>Anax junius</i> (Drury 1770)	Common Green Darner	G5	4	Green	4	2.1	AH	P	-	2.1	-	-	P	-	-
<i>Basiaeschna janata</i> (Say 1839)	Springtime Darner	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Boyeria grafiana</i> Williamson 1907	Ocellated Darner	G5	4	Undet.	5	-	NH	-	-	-	-	-	-	-	-
<i>Boyeria vinosa</i> (Say 1839)	Fawn Darner	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Gomphaeschna furcillata</i> (S. 1839)	Harlequin Darner	G5	2	Red	2	PL	AH	-	-	-	P	-	P	-	-
<i>Rhionaeschna mutata</i> (H. 1861)	Spatterdock Darner	G3G4	2	Undet.	6	-	NH	-	-	-	-	-	-	-	-
Family <i>Gomphidae</i>															
<i>Dromogomphus spinosus</i> S. 1854	Black-shouldered Spinyl.	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Gomphus abbreviatus</i> Hagen 1878	Spine-crowned Clubtail	G3G4	2	Undet.	6	-	NH	-	-	-	-	-	-	-	-
<i>Gomphus adelphus</i> Sélys 1858	Moustached Clubtail	G4	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Gomphus borealis</i> (Needham 1901)	Beaverpond Clubtail	G4	4	Green	4	PL	PH	-	-	P	-	-	-	-	-
<i>Gomphus descriptus</i> (Banks 1896)	Harpoon Clubtail	G4	4	Yellow	3	-	NH	-	-	-	-	-	-	-	-
<i>Gomphus exilis</i> Sélys 1854	Lancet Clubtail	G5	4	Green	4	PL	PH	-	-	P	-	-	-	-	-
<i>Gomphus spicatus</i> Hagen 1854	Dusky Clubtail	G5	4	Green	4	PL	PH	-	-	P	-	-	-	-	-
<i>Gomphus ventricosus</i> (Walsh 1863)	Skillet Clubtail	G3	2	Red	2	-	NH	-	-	-	-	-	-	-	-
<i>Hagenius brevistylus</i> Sélys 1854	Dragonhunter	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Lanthus parvulus</i> (Sélys 1854)	Northern Pygmy Clubt.	G4	4	Yellow	3	PL	PH	-	-	-	-	-	-	P	P
<i>Ophiogomphus aspersus</i> M. 1895	Brook Snaketail	G3G4	4	Red	2	-	NH	-	-	-	-	-	-	-	-
<i>Ophiogomphus carolus</i> Need. 1897	Riffle Snaketail	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Ophiogomphus mainensis</i> P. 1863	Maine Snaketail	G4	4	Red	2	-	NH	-	-	-	-	-	-	-	-

**Table 1: continued**

Scientific Name	English Name	Global NatSrv	Canada GSSC	NSDNR Colour	NSDNR GSSC	Property Status	General	Typha Pond	Chara Pond	Settle Pond	Pit Fen	Overflow Marsh	Coastal Bog	Bog Stream	Point Stream
		1	2	3	4	5	6	7							
<i>Ophiogom. rupinsulensis</i> (W. 1862)	Rusty Snaketail	G5	4	Red	2	-	NH	-	-	-	-	-	-	-	-
<i>Stylogomphus albigylus</i> (H. 1878)	Eastern Least Clubtail	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Stylurus scudderi</i> (Sélys 1873)	Zebra Clubtail	G4	4	Undet.	5	-	NH	-	-	-	-	-	-	-	-
Family <i>Cordulegastridae</i>															
<i>Cordulegaster diastatops</i> (S. 1854)	Delta-spotted Spiketail	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Cordulegaster maculata</i> Sélys 1854	Twin-spotted Spiketail	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
Family <i>Macromiidae</i>															
<i>Didymops transversa</i> (Say 1839)	Stream Cruiser	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Macromia i. illinoensis</i> W. 1862	Illinois River Cruiser	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
Family <i>Corduliidae</i>															
<i>Cordulia shurtleffii</i> Scudder 1866	American Emerald	G5	4	Green	4	PL	AH	P	P	P	P	P	P	-	-
<i>Dorocordulia lepida</i> (Hagen 1871)	Petite Emerald	G5	4	Green	4	PL	AH	-	-	P	-	-	P	-	-
<i>Dorocordulia libera</i> (Sélys 1871)	Racket-tailed Emerald	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Epiheca canis</i> (McLachlan 1886)	Beaverpond Baskettail	G5	4	Green	4	PL	AH	P	P	P	-	P	-	-	-
<i>Epiheca cynosura</i> (Say 1839)	Common Baskettail	G5	4	Undet.	5	PL	AH	P	P	P	-	P	-	-	-
<i>Epiheca princeps</i> (Hagen 1861)	Prince Baskettail	G5	4	Yellow	3	-	NH	-	-	-	-	-	-	-	-
<i>Epiheca semiaquea</i> (Burm. 1839)	Mantled Baskettail	G4	5	Undet.	5	PL	AH	P	P	P	-	P	-	-	-
<i>Epiheca spinigera</i> (Sélys 1871)	Spiny Baskettail	G5	4	Green	4	PL	AH	P	P	P	-	P	-	-	-
<i>Helocordulia uhleri</i> (Sélys 1871)	Uhler's Sundragon	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Somatochlora albicincta</i> (B. 1839)	Ringed Emerald	G5	4	Red	2	-	NH	-	-	-	-	-	-	-	-
<i>Somatochlora brevicincta</i> Rob. 1954	Québec Emerald				G3	3	Yellow	5	PL	AH	-	-	-	P	-
<i>Somatochlora cingulata</i> Sélys 1871	Lake Emerald	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
* <i>Somatochlora elongata</i> (S. 1866)	Ski-tailed Emerald	G5	4	Green	4	2.1	AH	-	P	2.1	-	-	-	-	-
<i>Somatochlora forcipata</i> (S. 1861)	Forcipate Emerald	G5	4	Undet.	5	PL	AH	-	-	-	P	-	P	-	-
<i>Somatochlora franklini</i> (S. 1861)	Delicate Emerald	G5	4	Undet.	5	PL	AH	-	-	-	P	-	P	-	-
<i>Somatochlora incurvata</i> W. 1918	Incurvate Emerald	G4	4	Green	4	PE	AH	-	-	-	P	-	P	-	-
<i>Somatochlora kennedyi</i> W. 1918	Kennedy's Emerald	G5	4	Undet.	5	PL	AH	-	-	-	P	-	P	-	-
<i>Somatochlora minor</i> Calvert 1898	Ocellated Emerald	G5	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Somato. septentrionalis</i> (H. 1861)	Muskeg Emerald	G5	4	Yellow	3	-	NH	-	-	-	-	-	-	-	-
<i>Somatochlora tenebrosa</i> (Say 1839)	Clamp-tipped Emerald	G5	3	Yellow	3	-	NH	-	-	-	-	-	-	-	-
* <i>Somatochlora walshii</i> (S. 1866)	Brush-tipped Emerald	G5	4	Green	4	3	AH	-	-	-	3	-	P	-	-
<i>Somatochlora williamsoni</i> W. 1907	Williamson's Emerald	G5	4	Red	2	-	NH	-	-	-	-	-	-	-	-
<i>Williamsonia fletcheri</i> Will. 1923	Ebony Boghaunter	G3G4	3	Red	2	PL	AH	-	-	-	P	-	P	-	-
Family <i>Libellulidae</i>															
Skimmers															



\**Celithemis elisa* (Hagen 1861) Calico Pennant G5 4 Green 4 3 - - - 3 - - - - -

**Table 1: continued**

Scientific Name	English Name	Global NatSrv	Canada GSSC	NSDNR Colour	NSDNR GSSC	Property Status	General	Typha Pond	Chara Pond	Settle Pond	Pit Fen	Overflow Marsh	Coastal Bog	Bog Stream	Point Stream
		1	2	3	4	5	6	7							
<i>Celithemis martha</i> Will. 1922	Martha's Pennant	G4	5	Green	5	-	NH	-	-	-	-	-	-	-	-
<i>Erythrodiplax berenice</i> (D. 1770)	Seaside Dragonlet	G5	2	Red	2	-	NH	-	-	-	-	-	-	-	-
<i>Ladona exusta</i> (Say 1839)	White Corporal	G4	4	Green	4	-	NH	-	-	-	-	-	-	-	-
<i>Ladona julia</i> (Uhler 1857)	Chalk-fronted Corporal	G5	4	Green	4	PL	AH	-	P	P	-	P	-	-	-
<i>Leucorrhinia frigida</i> Hagen 1890	Frosted Whiteface	G5	4	Green	4	PL	AH	P	P	P	P	P	P	-	-
<i>Leucorrhinia glacialis</i> Hagen 1890	Crimson-ringed Whitef.	G5	4	Green	4	PL	AH	P	P	P	P	P	P	-	-
<i>Leucorrhinia hudsonica</i> (S. 1850)	Hudsonian Whiteface	G5	4	Green	4	PL	AH	P	P	P	P	P	P	-	-
<i>Leucorrhinia intacta</i> (Hagen 1861)	Dot-tailed Whiteface	G5	4	Green	4	PL	AH	P	P	P	-	-	-	-	-
<i>Leucorrhinia patricia</i> Walker 1940	Canada Whiteface	G4	4	Undet.	5	-	NH	-	-	-	-	-	-	-	-
<i>Leucorrhinia proxima</i> Calvert 1890	Belted Whiteface	G5	4	Green	4	PL	AH	P	P	P	-	-	-	-	-
<i>Libellula incesta</i> Hagen 1861	Slaty Skimmer	G5	4	Green	4	PL	AH	-	-	P	-	P	-	-	-
<i>Libellula luctuosa</i> Burmeister 1839	Widow Skimmer	G5	4	Hist.	5	-	NH	-	-	-	-	-	-	-	-
* <i>Libellula pulchella</i> Drury 1770	Twelve-spotted Skimmer	G5	4	Green	4	2.1	AH	-	-	2.1	-	-	-	-	-
* <i>Libellula quadrimaculata</i> L. 1758	Four-spotted Skimmer	G5	4	Green	4	2.1	AH	P	2.1	3	P	P	P	-	-
<i>Nannothemis bella</i> (Uhler 1857)	Elfin Skimmer	G4	4	Green	4	-	NH	-	-	-	-	-	-	-	-
* <i>Pantala flavescens</i> (Fab. 1798)	Wandering Glider	G5	4	Green	4	P	AH	-	P	P	-	-	P	-	-
<i>Pantala hymenaea</i> (Say 1839)	Spot-winged Glider	G5	4	Green	4	P	AH	-	P	P	-	-	P	-	-
* <i>Plathemis lydia</i> (Drury 1770)	Common Whitetail	G5	4	Green	4	-	-	-	-	-	-	-	-	-	-
<i>Sympetrum corruptum</i> (H. 1861)	Variegated Meadowhawk	G5	4	Undet.	5	-	NH	-	-	-	-	-	-	-	-
<i>Sympetrum costiferum</i> (H. 1861)	Saffron-winged Mead.	G5	4	Green	4	PE	AH	P	P	P	P	P	P	-	-
<i>Sympetrum danae</i> (Sulzer 1776)	Black Meadowhawk	G5	4	Green	4	PE	AH	P	P	P	P	P	P	-	-
* <i>Sympetrum internum</i> Mont. 1943	Cherry-faced Meadow.	G5	4	Green	4	I	AH	P	P	I	P	P	P	-	-
<i>Sympetrum janeae</i> Carle 1993	Jane's Meadowhawk	G5	5	Undet.	5	PE	AH	P	P	P	P	P	P	-	-
<i>Sympetrum obtusum</i> (Hagen 1867)	White-faced Meadow.	G5	4	Green	4	PE	AH	P	P	P	P	P	P	-	-
<i>Sympetrum rubicundulum</i> (S. 1839)	Ruby Meadowhawk	G5	4	Undet.	5	PE	AH	P	P	P	P	P	P	-	-
<i>Sympetrum semicinctum</i> (Say 1839)	Band-winged Meadow.	G5	4	Green	4	PE	AH	P	P	P	P	P	P	-	-
<i>Sympetrum vicinum</i> (Hagen 1861)	Autumn Meadowhawk	G5	4	Green	4	PE	AH	P	P	P	P	P	P	-	-
<i>Tramea carolina</i> (Linnaeus 1763)	Carolina Saddlebags	G5	5	Undet.	5	-	NH	-	-	-	-	-	-	-	-