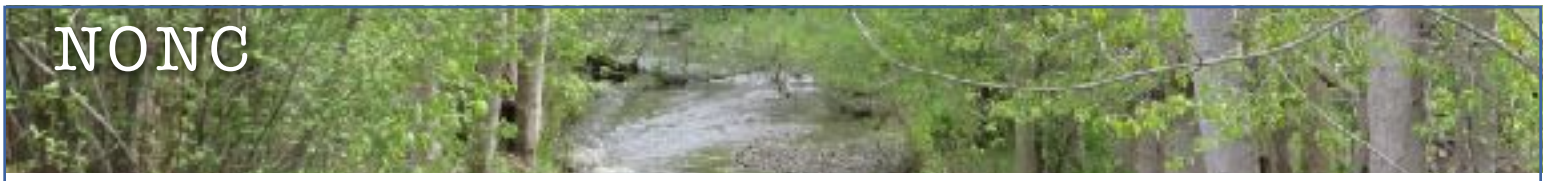
NEWSPACKET

May-June 2022

Journal of the North Okanagan Naturalists'Club



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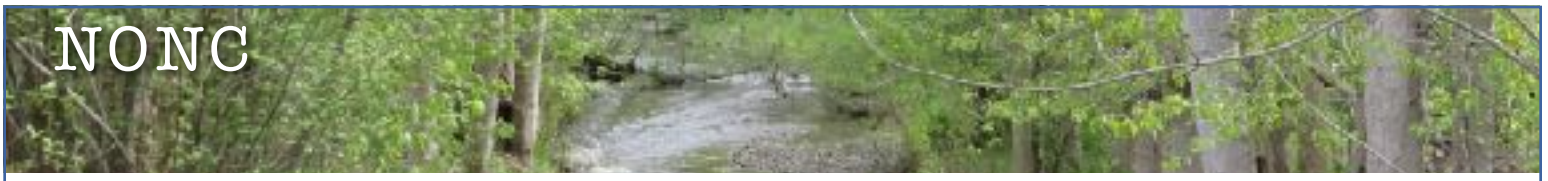


2022 Hummingbird Banding Program

by Karen Siemens

AFTER a Provincial Zoom Meeting April 9th which was also attended by banders from Alaska and our workshop on April 23rd we are ready for the start of our 2022 banding season.

We kick that off on May 7th in Lumby for our 5 hour session then have our first Westside Road banding on May 11th. These are biweekly for the duration of the breeding season until mid August.

Much of our banding is dependant upon the weather. If it is too cold or too hot we cease banding and just count the number of birds. Their well being is first and foremost. We are hoping for a smoke free summer for all involved.

We have a dedicated group of volunteers of which many have been in the program for over 10 years.

We are hoping to be full force this year as the last 2 years have been somewhat abbreviated because of enforced Covid procedures.

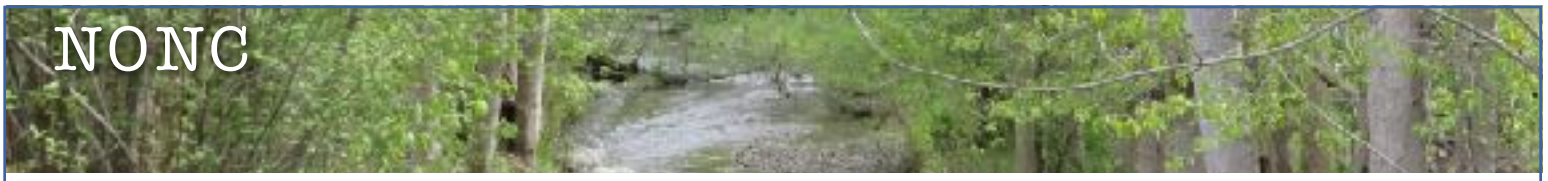
Our lowest captured count in Lumby was 2020 with only 66 which was half of the captures of 2019.

In the 13 years we have been banding in Lumby we have captured a total of 1,207 birds. We have recaptured 53. Recaptures are birds that already have

a band attached. We use that band number to check the registered numbers to ascertain where and when that bird was banded. Last year 3 recaptures were banded in 2018, 4 in 2019 and2 in 2020.

In the 8 years we have been banding on Westside Road we have captured 551 birds. 27 of those are recaptured. Last year 3 of those recaptures were Rufous Hummingbirds that had been banded at that site in 2018. It is so very encouraging to have firm evidence of these birds returning to the same sites to breed and nest again.

Thank you so much to our dedicated volunteers in the banding program and also to NONC for their continued support in our endeavours.



Backyard Nest Boxes

Making them safe for our Native Birds

by Margaret MacKenzie

BIRDS face all kinds of problems trying to raise young, but one of the biggest is the invasive House Sparrow. Many people like to put up bird boxes in their backyard, both for interest, and for thinking that it is a worthwhile project to help increase the bird population. However, our city, like many others, has a huge population of House Sparrows. Over 100 years ago someone missed the House Sparrows from the European homeland and brought a few over to North America. Unfortunately, they loved it here and are so aggressive that they have done well. So well, that our own native species like Bluebirds, and Swallows have been pushed out of our towns and cities.

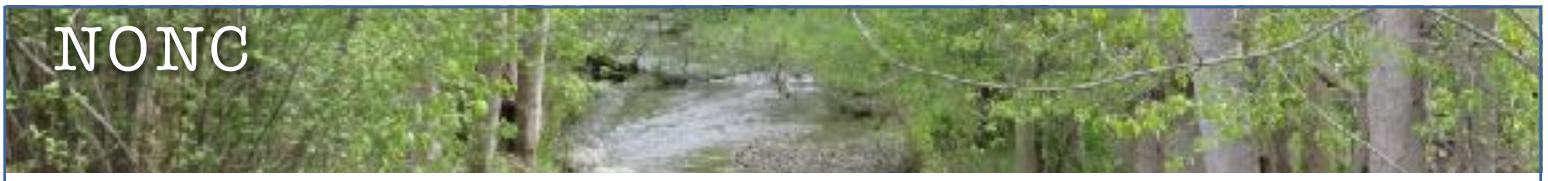
Although Bluebirds are long gone from the city, we can still find a few of our native birds like Chickadees, Nuthatches, and Wrens, that are cavity nesters and will use our nest boxes. These birds have little chance to build and raise a family with the aggressive House Sparrow that will take over every box we put up in our yard. However, there is a very simple solution! The three species are smaller in size than House Sparrows and only require a nest hole that is 1 1/8 inch diameter. You can cut out a new hole this size and attach it onto the existing hole in the box. The House Sparrow just can't fit in, and will leave it alone. If you are fortunate, a House Wren or a Chickadee or even a Nuthatch may use the box for it's nesting site. And, if the box remains empty, you can rest easy with the knowledge that you haven't added to the population of House Sparrows.

The importance of keeping House Sparrow Invasions to a minimum is that as they increase in numbers, they move out into the suburbs and fields where they interfere with the Bluebirds and Tree Swallows also looking for nesting holes. So, to help our native birds do well, ensure YOUR bird box is House Sparrow proof with a smaller sized hole that they cannot enter!!

below: Black-capped Chickadee easily entered a 1 1/8 inch hole

below: House Sparrow definitely interested but couldn't get inside.

Darn, can't get in!



Avian Influenza Outbreak: Should You Take Down Your Bird Feeders?

April 20, 2022, updated May 10
All About Birds
The Cornell Lab of Ornithology

EDITOR'S NOTE
Much has been said of the announcement made by the BC SPCA, such as this CBC News story at right.

It seems logical that we should see what the wild bird experts say. Thus this story.

In the end, it's up to you how you will respond.

MANY people are concerned about the 2022 outbreak of avian influenza, or bird flu, that is affecting domestic poultry, waterfowl, raptors, and some shorebirds in the U.S. and Canada. Because the current strain (H5N1) causes heavy losses to poultry, it is referred to as highly pathogenic avian influenza, or HPAI. Note that

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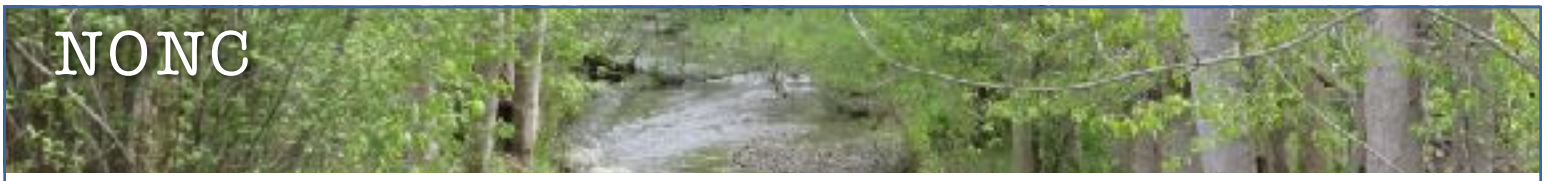
Bird baths, feeders should be removed to stop spread of avian flu: B.C. SPCA
CBC News : May 05, 2022

The B.C. Society for the Prevention of Cruelty to Animals has asked the public to temporarily take down backyard bird feeders and empty any bird baths as avian flu continues to spread across the province.
The society on Thursday said the disease can spread via feeders "because they encourage unnatural congregations of birds and attract other wildlife."
Spilled seeds are especially dangerous, according to a statement, because birds feeding from the ground are also exposed to droppings piled up below the feeder.
"On rare occasions, this virus can also cause disease in humans who have been in close contact with infected birds, or heavily contaminated areas," wrote Andrea Wallace, manager of wild animal welfare for the B.C. SPCA. "We need to do everything we can to stop H5N1 [avian flu virus] in its tracks."
As for the public, on top of removing bird feeders and emptying bird baths, Wallace said the public should also keep an eye out for sick birds.
"Birds may appear lethargic, unusually 'fluffed up,' have nasal discharge, or have excessively watery eyes or swelling of the head and eyelids," she said.
There were five avian flu outbreaks among poultry flocks in the Okanagan and Metro Vancouver as of Wednesday. The virus can sicken many different species of birds, including farm animals like chickens and turkeys, but also wild and pet birds as well.
The H5N1 strain is considered highly contagious.
The affected farms have been placed under quarantine. B.C. has ordered all commercial poultry operators with more than 100 birds to move their flocks indoors until the spring migration ends in May to help stem the spread.
The latest confirmed infections are part of a larger outbreak sweeping across North America, including other provinces. Last week, the U.S. Centers for Disease Control and Prevention reported the first human case of infection, though it said the risk to the public remains low.
The Canadian Food Inspection Agency has said the illness is not considered a significant concern for healthy people who are not in regular contact with infected birds.



Avian Flu continued

transmission of avian influenza from birds to humans is very rare, according to the Centers for Disease Control. As of April 29, one person has tested positive for avian influenza and developed mild symptoms, in Colorado.

There has been confusion about whether people should take down their feeders to stop the spread of this disease among wild birds. We checked with Dr. Julianna Lenoch, who directs the USDA APHIS National Wildlife Disease Program, and we've compiled the following summaries of key points regarding HPAI, especially among songbirds and other feeder visitors.

Low Risk of Avian Flu to Songbirds
There is currently very low risk of an outbreak among wild songbirds, and no official recommendation to take down feeders unless you also keep domestic poultry, according to the National Wildlife Disease Program. We do always recommend that you clean bird feeders and birdbaths regularly as a way to keep many kinds of diseases at bay.

We also always recommend that you follow any recommendations put out by your state government, such as the recent request to take down feeders in Illinois. We will update this page as the situation develops.

How do we know songbirds are at low risk?
USDA APHIS has a strong, multiyear surveillance program that routinely samples wild birds, including flocks of songbirds (and other species such as Rock Pigeons and Mourning Doves that are often around humans), for the presence of avian influenza. So far in 2022, they've detected the HPAI strain in 1,112 wild birds, with 21 detections in songbirds (see below for a list of species).

Avian influenza does not affect all types of birds equally. The "highly pathogenic" part of the term HPAI refers specifically to the severity of the disease in poultry, not necessarily in other bird species. For example, waterfowl often carry and transmit bird flu, but rarely get sick from the disease (even from HPAI strains). Raptors are much more sensitive to the disease than waterfowl. Domestic poultry are extremely susceptible to HPAI and spread the disease easily, leading to up to 100% mortality of affected flocks.

Songbirds are much less likely than waterfowl to contract avian influenza and less likely to shed large amounts of virus, meaning they do not transmit the disease easily. (See Shriner and Root 2020 for a detailed review in the journal Viruses.)

According to a separate study in the Journal of Wildlife Diseases, "…although passerines and terrestrial wild birds may have a limited role in the epidemiology of IAV [avian influenza A viruses] when associated with infected domestic poultry or other aberrant hosts, there is no evidence supporting their involvement as natural reservoirs for IAV." (Slusher et al. 2014)

For these reasons, it is unlikely that bird feeders will contribute to an outbreak among songbirds.

If songbirds are at low risk, why are people who keep poultry advised to take down their bird feeders?
The main concern with songbirds is the chance that a rare individual might transmit an infection to poultry. This is a concern because poultry are so much more

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NONC

Avian Flu continued

vulnerable than songbirds to HPAI.

The key intervention is to keep songbirds away from poultry; it's less important to keep songbirds away from each other.

If you have a backyard poultry flock, these are the most important steps to take:

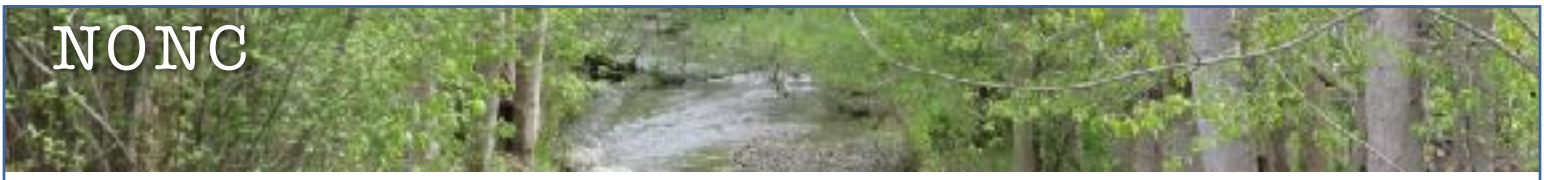
- make their food inaccessible to wild birds
- make their water inaccessible to wild birds
- keep poultry indoors or otherwise physically separated from wild birds, if possible
- change your clothes and wash hands before tending to poultry (or pet birds)

As a secondary measure, USDA APHIS recommends for poultry owners to take down wild bird feeders or keep them well away from their captive flock

If you keep nest boxes:
Avian influenza is only rarely transmitted to humans, according to the USDA, but nevertheless our NestWatch project always advises good hygiene and highly recommends that people wear disposable gloves and/or wash their hands thoroughly after checking nest boxes.

Most birds that use nest boxes are songbirds, which are at low risk for contracting or transmitting avian influenza.

If you monitor waterfowl or raptor nests (e.g., Wood Duck, Common Merganser, Canada Goose, American Kestrel, Barred Owl), we suggest you wear gloves, change or wash gloves and disinfect equipment between nest boxes, wear a mask when cleaning out nest boxes, and change clothes and footwear before visiting any domestic poultry.



NONC Outing to View the Niskonlith Glacier Lilies

April 28, 2022

by Marnie Williamson
photos by Marnie & Pam Jenkins

THIRTEEN of us had a wonderful day wandering through fields of yellow and green. Glacier lilies were in full bloom and everywhere even along the roadsides. Fern-leaved Desert Parsley (Lomatium, Chocolate tips) was huge and blooming wherever we looked. Bluebells, Yellowbells, Shooting stars, Large fruited parsley, Blue-eyed Mary .... Many blooming at a different time from our valleys and in conjunction with others.

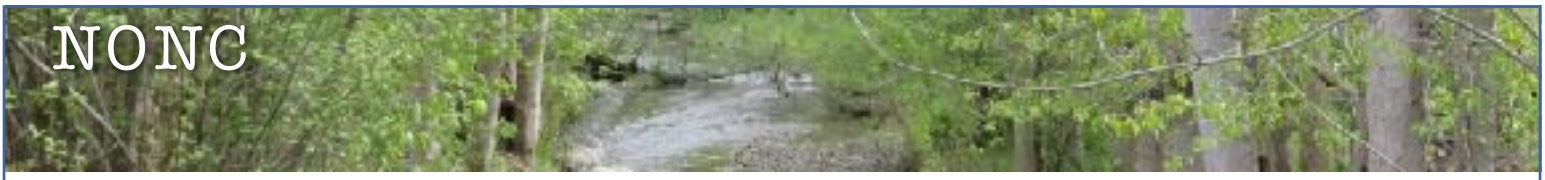
Arrow-leaved Balsamroot was not in great abundance, probably because of the aspect or elevation. But the hills around the North Thompson River valley were in full bloom.

We had a nice drive past Pillar Lake on the way to Chase, seeing two deer, then another group of five, a Red-tailed Hawk, an eagle.

The group returned their own way back to Vernon, some stopping in Salmon Arm to bird at the wharf and shoreline, or just for coffee and pie.

An enjoyable day.

See possible future outings on the next page.



Club Outings for 2022

Tentative. Additional details will be in our Weekly Message sent by e-mail on Mondays to members.

May/June
Salmon Arm Bay – Western Grebe Courtship
Courtship, involving preening, gift giving and dancing on the water, begins in late April and may still be in progress well into June. Sights can be witnessed from shore using binoculars, from Peter Jannink Nature Park, walkway in front of Prestige Inn, or Christmas Island.
Leader: Don Cecile?

May/June/July
The Rimrocks, Lavington
Leaders: Norbert Maertens, Justin Oblak

June 2
Emily's Mountain in the Commonage
(easy/moderate)
Hike up Emily's Mountain in the Commonage to view the Bitterroot blooming. The walk uphill to the top is on an old grassy track and is easy but steady. Along the way, we will take time to walk off the track to find the patches of this pretty and interesting plant that grows in the rocky outcrops.
Meet at The Canadian Wholesale Club parking lot at 9:30 am. across from the gas station and near highway 97. We will carpool from there. Bring a lunch to eat at the top and enjoy the views.
Leader: Margaret MacKenzie

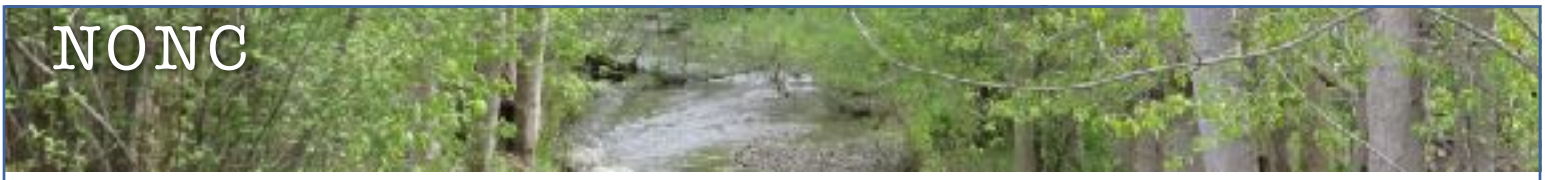
Late June/July
Central Okanagan 3 birding stops and two gardens (easy)
Roberts Lake
Xeriscape Endemic Nursery & Ecological - West Kelowna
Hardy Falls
Summerland Ornamental Gardens
Sun Oka Beach Provincial Park
Leaders: Judy, Kenn

July 28 & 29
Revelstoke Outings 2-day
(easy - moderate - hard)
1st Day
Giant Cedars Boardwalk
Skunk Cabbage Boardwalk
Craigalachi / Kay falls
**Blanket Creek park (25 kilometers south of Revelstoke on #23
2nd day Eva Lake Meadows in the Sky
Leaders: Kenn Whyte, Geoff Battersby

Thurs., Sept. 15
Eagle River Nature Park
On Hwy 6 about 15 minutes east of Sicamous. We would likely see mushrooms, and fall colours. Park is next to Eagle River and trail runs thru deciduous and then mixed forest. An all day outing as it is 11/4 hr drive from Vernon. Walk itself is easy to moderate, mainly level and could take 2 hrs or more depending on what we see.
Possible date Thurs Sept 15. Everyone to bring lunch and snacks. Leader: Marnie Williamson

Sept./Oct.
Salmon Arm Bay
(easy) Freshwater mudflats can offer best shore birding in BC's interior.
Leader: Don Cecile?

Aug./Sept./Oct.
Rose Swanson Mountain, Armstrong
(moderate - strenuous) Views towards Vernon, Otter & Swan Lakes; north arm Okanagan Lake
Leaders: Ruth & Rod Drennan



Ducks

sourced by Harold Sellers

reference
https://www.britannica.com/animal/duck

DUCKS are generally divided into three major groups, dabbling (shallow-water), diving, and perching ducks, based on their characteristic behaviours. There is a fourth, whistling or tree ducks, but of the eight species found worldwide, none are in Canada or the U.S. We have 26 species of duck present in British Columbia (see table).

Dabbling Ducks (9 species)

Pintails, teals, shovelers, and wigeons are also dabbling ducks classified in Anas, in addition to the gadwall (A. strepera) and the black ducks (A. sparsa, A. rubripes, and A. superciliosa).

above: Green-winged Teal (by Claire Christensen)

Perching Ducks (1 species)

Perching ducks such as the muscovy (Cairina moschata), the wood duck (Aix sponsa), and the mandarin duck (Aix galericulata) have long claws and are the most arboreal of ducks, often roosting in trees.

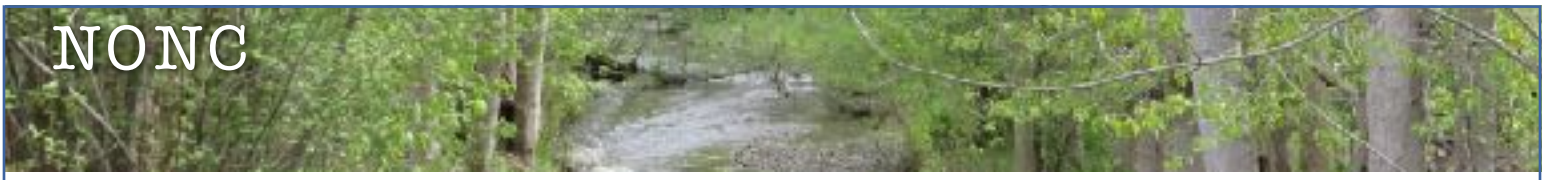
Diving Ducks (16 species)

The diving ducks (or sea ducks) include the greatest number of marine species, such as eiders (which are variously classified as members of the tribe Mergini or placed in a separate tribe Somateriini) and scoters (Melanitta), but they also include primarily freshwater species such as mergansers (Mergus and Lophodytes), the ring-necked duck (Aythya collaris), and the pochards (Aythya and Netta), including the scaups (A. marila, A. affinis, and A. novaeseelandiae) and the canvasback (A. valisineria). The redhead (A. americana), the goldeneye (Bucephala clangula and B. islandica), and the bufflehead (B. albeola) are diving ducks that live in fresh and salt water, depending on the season. Members of the stifftail group, typified by the blue-billed ruddy duck (Oxyura jamaicensis), are highly aquatic diving ducks characterized by legs set far toward the rear of the body.

Whistling or Tree Ducks

The whistling ducks (Dendrocygna), also called tree ducks, are not true ducks but are more closely related to geese and swans. Ducks that are not included in those larger groups are the freckled duck (Stictonetta naevosa) and the torrent duck (Merganetta armata), as well as the shelducks (Tadorna) and the steamer ducks (Tachyeres).

left: Cinnamon Teal male and female (by Claire Christensen)



Ducks continued

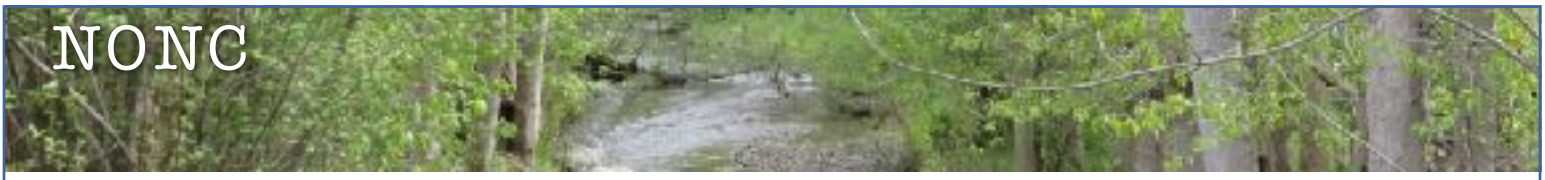
The following ducks may be seen in the North Okanagan.

American Wigeon	Dabbling
Barrow's Goldeneye	Diving
Blue-winged Teal	Dabbling
Bufflehead	Diving
Canvasback	Diving
Cinnamon Teal	Dabbling
Common Goldeneye	Diving
Common Merganser	Diving
Eurasian Wigeon	Dabbling
Gadwall	Dabbling
Greater Scaup	Diving
Green-winged Teal	Dabbling
Harlequin Duck	Diving
Hooded Merganser	Diving
Lesser Scaup	Diving
Long-tailed Duck	Diving
Mallard	Dabbling
Northern Pintail	Dabbling
Northern Shoveler	Dabbling
Red-breasted Merganser	Diving
Redhead	Diving
Ring-necked Duck	Diving
Ruddy Duck	Diving
Surf Scoter	Diving
White-winged Scoter	Diving
Wood Duck	Perching Duck

above: male Ruddy Duck, by Claire Christensen

above: Northern Shoveler, male and female, by Claire Christensen

above: American Coot pair, by Claude Rioux



Elm Seed and "Tuxedo" Bugs

British Columbia Ministry of Agriculture Fact Sheet, 2018
Images courtesy Utah State University website

Introduction
The elm seed bug, Arocatus melanocephalus and tuxedo bug, Raglius alboacuminatus, are native to Europe and the Mediterranean region. They were first reported in Canada in Kelowna, British Columbia in 2016. The seed bugs are not agricultural pests but can be a nuisance in high numbers because they enter homes and businesses. Elm seed bugs emit unpleasant odours when crushed and their fecal droppings on structures such as doors and windows can be unsightly. Elm seed and tuxedo bugs do not bite people.

Identification
Elm seed bug: Adults are 6.5 - 7 mm (about 1/3 inch) long, black and rusty red colour with black triangle bordered by a rusty coloured rectangle on the back

(picture below). The outer margins of the abdomen have contrasting black and white bands. Immature stages (nymphs) have a black head and a red abdomen; older nymphs have wing buds and two black spots on the back of the abdomen.

Tuxedo bug: Adults are about 5 - 6 mm (1/4 inch) long, dark brown to black, with a triangle outlined in white, distinct paired white spots at the top and lower part of the body and a white spot at the tip of the body.

above: nymphs of Elm seed bug

Life cycle
Elm seed bug: In Europe and the United States, elm seed bug has one generation per year. Elm seed bugs overwinter as adults in and around structures and emerge in the spring to lay eggs on elms. Nymphs feed on elm seeds from May-June and adults are present in the summer. There are five immature stages and because of the long egg laying period, life stages may overlap with adults and immature stages being present in June and July. In Interior British Columbia, adult and immature stages are present from May - September.

Tuxedo bug: Tuxedo bugs overwinter as adults and lay eggs in the ground or soil in early spring. Nymphs feed on developing seeds of plants in the mint family. In British Columbia, adults were present in August in 2016.

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Elm seed bug continued

Hosts and Damage

Elm seed bugs feed on elm seeds and leaves but do not cause much damage to the trees. Tuxedo bugs feed on plants in the mint family (e.g. black horehound, lambs ears, white mullein). Elm seed and tuxedo bugs are not known to feed on agricultural crops. They do not pose a health risk to humans or pets and do not bite.

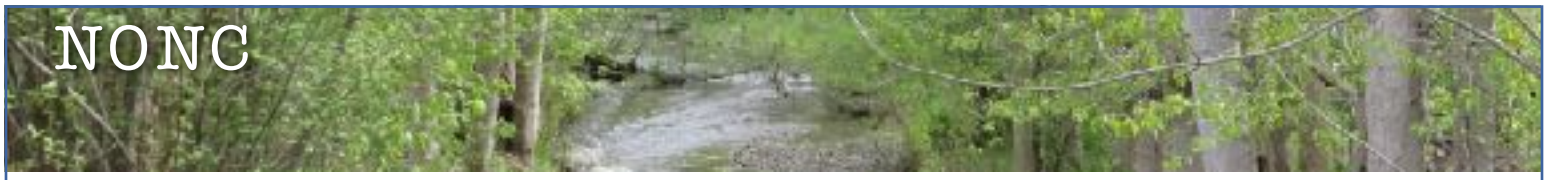
They are a nuisance when they invade homes and structures in large numbers. This can be a source of discomfort and anxiety for homeowners. Elm seed bugs stink when crushed and their fecal droppings on structures are an eyesore.

Control

- Prevent entry into homes or buildings by sealing off any access points in windows, doors and screens.
- Vacuum bugs in and around homes. For large numbers, use a shop vacuum with 1-2 inches of soapy water in the bottom to drown the bugs.
- Remove volunteer elm trees. Where practical prune elm trees to reduce food source for elm seed bugs.
- Clean up elm seeds and debris around the home and structures.
- Use sticky traps for trapping bugs around window sills.
- Inspect firewood for overwintering adults before bringing into the home.
- The use of insecticides for controlling seed bugs in the home is not recommended.
- For high numbers, treating immature stages outside the home with a barrier spray along foundations, patios, doors and windows will help prevent bugs from entering homes.
- Products registered for use around the home containing permethrin and malathion will provide control.
- Homeowners can hire a commercial pesticide applicator for more control options.

above: adult Tuxedo Bug

below: size of an adult elm seed bug



Insects

Insect Flight
Smithsonian www.si.edu

True flight is shared only by insects, bats, and birds. Examples of other animals that are capable of soaring are flying fish, flying squirrels, flying frogs, and flying snakes. The capacity for flight in insects is believed to have developed some 300 million years ago, and initially consisted of simple extensions of the cuticle from the thorax. The success of insects during development of flight was due to their small size.

Of course, not all insects have developed wings, these including such groups as spring-tails and silverfish. Some parasitic groups are believed to have lost their wings through evolution.

When wings are present in insects, they commonly consist of two pairs. These include grasshoppers, bees, wasps, dragonflies, true bugs, butterflies, moths and others. The outer pair of wings of beetles commonly are quite hard and not functional in flight.

The ability to fly is not determined by the number or size of wings. Some insects with large wings, such as Dobsonflies and Antlions, are relatively poor fliers, while bees and wasps with smaller wings are good fliers. True flies are a large group of insects with only one pair of wings, although they have small balancing organs known as halteres where a second pair of wings might develop. The halteres vibrate with the wings and sense changes of direction.

Flight in insects varies dramatically, from the clumsy patterns of some beetles and true bugs to the acrobatic maneuvers of dragonflies and many true flies. Flies in the Family Syrphidae (flower flies and hover flies) are capable of astounding feats, including moving forward, backward, sideways, and up and down. They can truly hover also, which is an uncommon ability in insects.

Flight in insects is gained by muscles, not attached directly to the wings, that move the wings indirectly by changing the shape of the thorax.

The following records relate to the flight of insects:
- Migration distance — Painted Lady Butterfly, from North Africa to Iceland, a distance of 4,000 miles.
- Fastest flight in insects — Sphinx Moths, speed of 33 mph.
- Fastest wingbeat — Midge, at 62,760 beats per minute.
- Slowest wingbeat — Swallowtail butterfly -- 300 beats/minute.
- Highest altitude — Some butterflies have been observed flying at altitudes up to 20,000 feet.
- Largest wings, modern — Wingspans of some butterflies and moths are the largest of all modern insects.
- Largest wings, extinct — The wingspans of fossil dragonflies, existing millions of years ago, were more than two feet.

How high can insects fly?
https://bugunderglass.com
While the highest altitude a bird has been recorded flying is 11,278 meters (37,000 feet), some insects have also been seen flying at surprisingly high altitudes. Some flies and butterflies have been seen flying at 6,000 meters (19,685 feet).

Life at high altitude is a challenge, so there is an overall reduction in the diversity and abundance of all kinds of organisms. Flying organisms including

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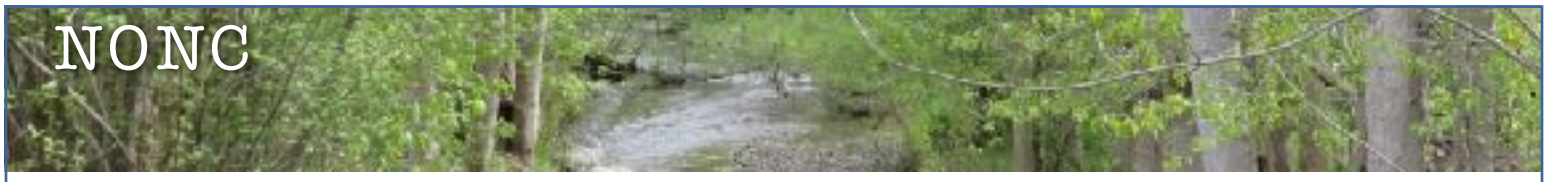


Insects continued

birds and insects face the challenges of low temperatures, low oxygen, and low air density. Specifically, flying insects face a number of setbacks at high altitudes. They're unable to regulate their body temperatures independent of their surroundings, so the cold temperatures at high altitudes could shut them down and prevent them from moving through large parts of the day and night. Insects also must be able to supply oxygen to their tissues through aerobic respiration to function, which can be problematic at high altitudes where there is reduced oxygen. Also, insects need to generate much more energy to generate lift at the low air density found at high altitude. At high elevation, insect wings have fewer air molecules to push against to keep their bodies in the air.

Although insects face setbacks in high-altitude areas, some have developed adaptations that give them unusual flight capabilities. A study published in the journal Biology Letters placed alpine bumblebees into a low-pressure chamber to simulate high-altitude conditions and observe their flight patterns. They discovered that the bumblebees are able to hover in thinner air by moving their wings in a wider arc. They also found that they could hover at an air pressure approximating 9,000 meters (29,528 feet), higher than Mount Everest. However, the low temperatures disable the bees from actually flying at this altitude.

Transparent, thin and tough: Why don't insect wings break?
www.sciencedaily.com

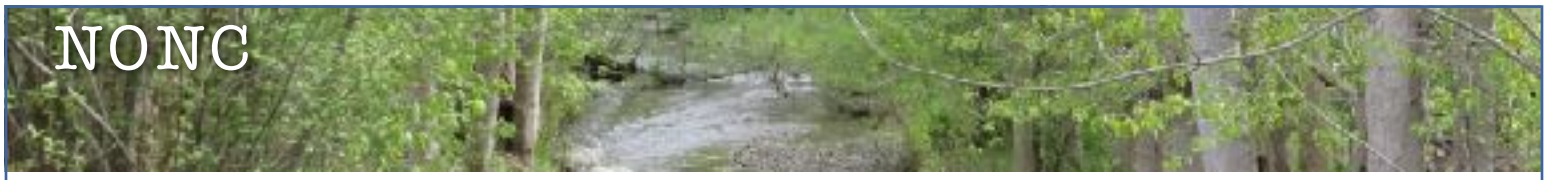
Researchers from Trinity College Dublin have shown that the wings of insects are not as fragile as they might look. A study just published in the scientific journal PLoS ONE now shows that the characteristic network of veins found in the wings of grasshoppers helps to capture cracks, similar to watertight compartments in a ship.

"The desert locusts are the marathon-flyers of the insect world," says Dr Jan-Henning Dirks, who studied the properties of the wings together with Professor David Taylor at the Department of Mechanical and Manufacturing Engineering. "These grasshoppers can fly for days across deserts and oceans with wings ten times thinner than a human hair."

During these long journeys the wings of the grasshoppers have to withstand hundreds of thousands of wing beats without failure. What is their secret?

Like all insect body parts, the wings are made from cuticle, which is the second most common natural material in the world. "We recently showed that the cuticle of the grasshopper legs is one of the toughest natural materials in the world," says Taylor. "Now we wanted to know whether this is true for the locust wings, too." To measure the toughness of the wings, the team cut small notches into the wing's membrane and measured the force needed to drive the crack through the wing "We were quite surprised when our first experiments showed that the membrane of the wings alone was not very tough." said Dirks. "We were expecting the membrane to be at least as tough as the legs."

However, when Dirks and Taylor then looked at the videos they recorded, they found that most cracks were effectively stopped once they ran into a cross vein. These minute crack barriers increased the wing's toughness by 50%.



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Copy for publication should be sent to Harold Sellers, Editor, by e-mail hikerharold@gmail.com.

Find us on Facebook North Okanagan Naturalists Club

MONTHLY MEETINGS

On the first Wednesday of the month (September through May), we hold a meeting for members and visitors at the Schubert Centre. Start time, 7:00 pm. Guest speakers, club news, refreshments.

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Clip or copy this form to begin or renew a membership with the North Okanagan Naturalists' Club. The form is also available on our website. Annual dues are $35 for an individual, $20 for a student and $50 for a couple or family. Every member should also complete a Waiver form, available at our website membership page.

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