



# neighborhood naturalist

Nature you can find in town and the nearby countryside

Corvallis, Oregon

Fall 2011

## Greater Yellowlegs

by Don Boucher

photography by Lisa Millbank

Greater Yellowlegs are one of my favorite sandpipers. They're somewhat numerous and easy to find. Some individuals are nervous and flighty. Others don't mind if I get a close look at them, as long as I don't make any sudden movements. And they're fun to watch. They hunt for prey in the shallows, with a high-stepping gait and long strides. They have a habit of bobbing their heads while teetering their bodies slightly. They don't probe the mud like smaller sandpipers do. Instead, they peck and dab while walking. It's entertaining to watch them dash along, sweeping their bills from side-to-side as they skim the surface. Sometimes a small group of energetic yellowlegs will run around together, perhaps enhancing their foraging success. They have strident, boisterous call.

In the Willamette Valley, we experience Greater Yellowlegs primarily during migration. During fall migration, some start appearing in late July, numbers peak by September, and last ones move through in November. Only a few linger into the winter. Their migration patterns are complex and difficult to study, mostly due to the inaccessibility of their breeding grounds. For at least some of our yellowlegs, the muskegs of southeastern Alaska are their breeding grounds. It's a marshy habitat covered in low-growing cranberry shrubs and other aquatic plants. Stunted cottonwoods and shore pines line the wetland edges. It's an intolerable place for a person, with millions of mosquitoes and unstable, squishy ground. It isn't friendly to vehicles or landing aircraft either. It's a good place to raise a family of yellowlegs, but not for biologists to study them.



Greater Yellowlegs in flight during spring migration.

# Greater and Lesser Yellowlegs Identification Tips

Distinguishing Greater and Lesser Yellowlegs is a methodical process that's not always easy, even for experienced birders. Give it a try. It may take some practice before you get it right. Males and females are similar.

## 1 Relative bill length

A Greater Yellowlegs' bill is slightly longer than its head. A Lesser's bill is slightly shorter than its head.

## 2 Bill shape

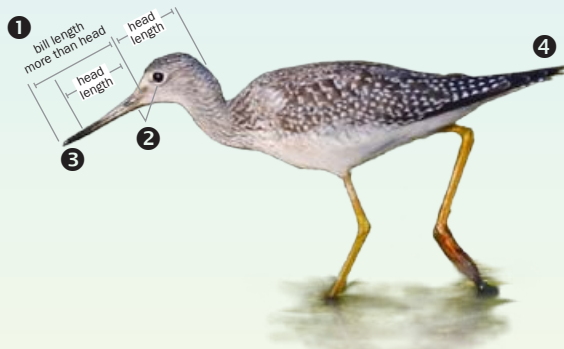
A Greater's bill has a stout base, wider than the eye diameter. The bill is slightly upturned. A Lesser's bill is straight with a thin base, the same width as the eye diameter.

## 3 Bill color

A Greater has a two-toned bill in fall, with a dark tip. In spring, the bill can be darker overall. A Lesser's bill is uniform in color.

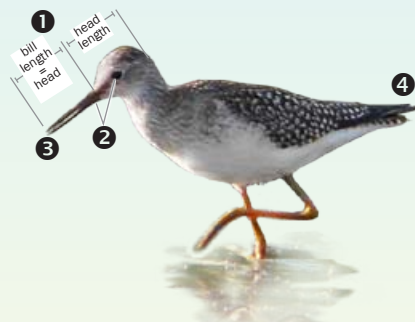
## 4 Wing tips

The Greater's wing tips meet the tip of the tail. The Lesser's wing tips extend a little beyond the tail tip.



### Greater Yellowlegs

*Tringa melanoleuca*  
Common in suitable habitat during migration.



### Lesser Yellowlegs

*Tringa flavipes*  
Less common, but often present in low numbers.



### Solitary Sandpiper

*Tringa solitaria*  
Uncommon. It has a bold eye-ring, a short neck, short, yellow-green legs, and is smaller than the Lesser Yellowlegs.



**Size** is difficult to judge and unreliable, especially in the open spaces of wetlands. But if you have the two species side-by-side, like in this photo, the size difference is obvious. The Lesser is in front.

### Voice

The Greater has a piercing, three- or four-part descending call. It's written in field guides in various ways: *cu-cu-cu-cu*, *tew-tew-tew-tew*, or other mnemonics. The Lesser's call is softer and has two parts and has been written as *tu-tu* or *cu-cu*.



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This Greater Yellowlegs is molting during fall migration. There are faint, remnant black bars on the side from its breeding plumage.

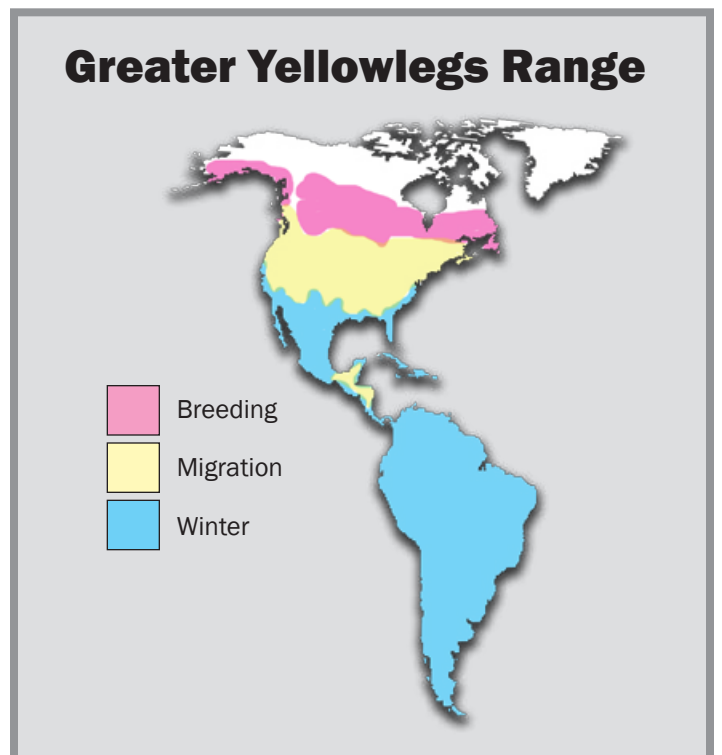


At least some Greater Yellowlegs are extreme long-distance migrants. The wintering grounds range from the southern US to the southern tip of South America. It's no wonder some birds start southern migration in July; they've got to get to the other end of the Western Hemisphere! They take their time migrating, making flights of up to a couple hundred miles, and then stopping for food and rest for a few days before they move on.

Outside their breeding grounds, they seek shallow wetlands that are a few inches deep. While smaller sandpipers probe the mud, I often see yellowlegs wading in water that covers their ankles, even up to their bellies. In fall, wetlands are smaller and fewer, which concentrates yellowlegs, sandpipers and shorebirds of all kinds.

Greater Yellowlegs eat mostly tiny fish or any prey of appropriate size. I saw one catch a young bullfrog. The frog was nearly as fat as the yellowlegs' head. After a struggle of almost ten minutes, the bird swallowed the frog the way a snake would. I watched the bulge creep slowly down its neck until eventually, the meal was consumed. That's an unusual anecdote; don't expect yellowlegs to control the bullfrog population.

The Greater Yellowlegs has two close relatives in our area: the Lesser Yellowlegs and the Solitary Sandpiper. All are primarily seen during migration. Greater Yellowlegs are regularly seen while Lesser Yellowlegs are less common. Only a few Solitary Sandpipers show up in our area each season. Although it looks most similar to the Lesser Yellowlegs, the Greater Yellowlegs is most closely related to the Common Greenshank, a species of the Eastern Hemisphere. The Greater Yellowlegs has most of the Western Hemisphere well-covered. 🦶



# ARGIOPE

article and photography by Lisa Millbank

In the chilly, quiet hour before sunrise in early October, a flock of geese crosses the deep blue eastern sky, and, in a weedy field, the crickets' chirping is slow and feeble.

Weakened by the cold, a large spider slowly climbs the frame of her dewy web. She sits, head down, at the hub of a shimmering spiral marked with a bold, white zigzag. She's a Black-and-Yellow Argiope, *Argiope aurantia*, and she's at the end of her life span. She has a few weeks left before frost claims her, but today, the golden sunbeams still stretch across the field to warm her body.



As the day warms up, bees buzz around some gumweed nearby. One strikes the web, but bounces off. But when a grasshopper leaps into the sticky capture spiral of the spider's web, she instantly pounces, guided not by her poor vision, but by her sensitive feet detecting the vibrations of her web. She throws broad swathes of silk over the hapless insect, rotating it with two legs while pulling hundreds of individual strands of silk from her aciniform glands with another pair of legs. She bites the grasshopper through its gossamer shroud and injects a cocktail of paralytic venom and enzymes that break down proteins. Soon, she'll be able to start sucking in the liquefied grasshopper tissues. Spiders have fangs with which to bite and envenomate their prey, but no way to chew pieces of food.

Part of her web has been damaged by the grasshopper's ill-fated jump. However, the spider makes no attempt to repair it. Tonight, she'll use digestive enzymes to break down and consume the silk of her web, recycling the amino acids in it. Other than some of the tough, intact framework of the web, she rebuilds the entire structure nightly. The white zigzag down the middle is called a *stabilimentum*, and varies from day to day. This structure may make the web more visible to birds who might fly through and damage the web, it might camouflage the spider, or it may confuse the prey. The one thing that it probably doesn't do, despite its name, is stabilize the web.



A closeup of the stabilimentum

Since Black-and-Yellow Argiopes are very large and strikingly patterned, and live across North America, people have given them all kinds of names: Writing Spider, Corn Spider, Garden Spider, or Banana Spider. The Greek word *Argiope* (är-gī-ō-pē) means "silver face," which probably refers to the silvery-gray hairs on the cephalothorax of this spider, and *aurantia* refers to the golden colors of the abdomen.

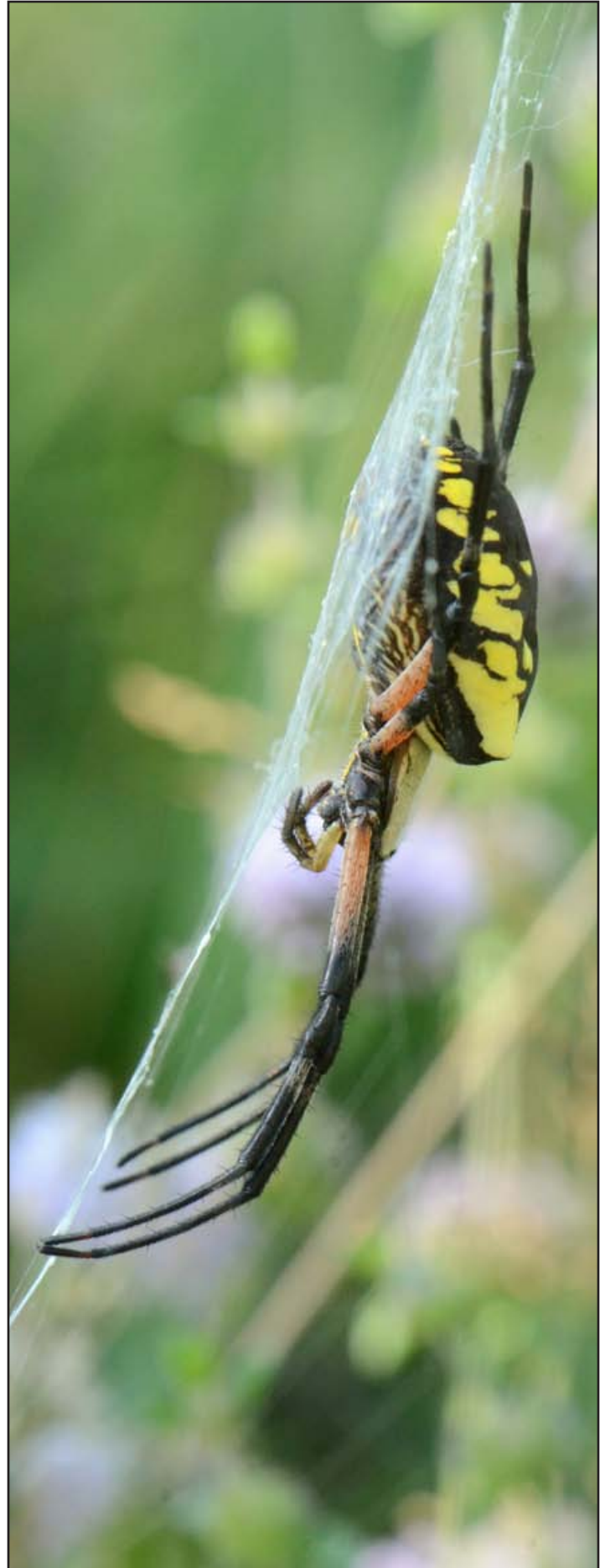


An adult male (top right of photo) is tiny compared to an adult female.

For anyone with a fear of spiders, Black-and-Yellow Argiopes are very intimidating. They're our largest spiders, and it's all too easy to have an uncomfortably close encounter by blundering into the webs. Where there is a reliable supply of prey, these spiders can establish dense populations, making it difficult to walk through an overgrown pasture or weedy field without bumping into one. Despite the females' striking colors and the white stabilimentum in the web, they can be almost invisible in a weedy field. I don't relish the thought of one crawling up my leg!

Fortunately, Black-and-Yellow Argiopes are very docile and timid. They shake their webs or try to escape to the safety of a nearby plant when frightened. You would have to mistreat one with rough handling to provoke her to bite you, and the bite doesn't cause any medical problems aside from a small swelling, with mild pain and itching. In fact, a component of Argiope venom is being researched for pharmaceutical use.

While adult females are huge and colorful, male Black-and-Yellow Argiopes are very inconspicuous spiders. They have their own interesting life cycle, but are seen infrequently. Male spiderlings look like their sisters, and build a web to catch prey. But once a male becomes an adult, he starts wandering in search of females, using their pheromones to guide him in his journey. He prepares for mating by depositing sperm on a tiny web, and filling his pedipalps with it. The *pedipalps* look like small boxing gloves attached to his face.



When he finds a female, he may fight with other males who have also arrived, tumbling on the ground in fierce wrestling contests. He's dwarfed by his mate; he's just a tiny pipsqueak who could be caught and eaten in an instant. By tapping and plucking on her web, he signals that he's not prey. If all goes well, he inserts one of his pedipalps into the female's genital opening to transfer the sperm. If the female does not attack and kill him, he may be able to insert his second pedipalp. Bizarrely enough, researchers have discovered that the male of this species always dies within minutes after inserting the second pedipalp. His dead body plugs and dangles from the female's genital opening, preventing other males from mating with her. As

ghoulish and creepy as this may be, his self-sacrifice helps to ensure his paternity of the female's eggs. Sometimes the mating happens while the female is molting, and in this case, she's helpless, and not able to catch and eat the male. However, even if he could escape from her during her molt, the second pedipalp insertion will kill him.

After mating, the female covers her eggs within a protective case of tough brown silk, a bit smaller than a ping-pong ball. She'll make up to four cases. A hard freeze kills the entire population of adult *Argiope*. Now the entire next generation is contained within these little globes.

The eggs hatch sometime in late fall or winter, but the spiderlings become dormant and stay within the case until spring, enduring months of freezing and thawing. The egg cases are well-hidden, but birds often puncture them and eat the eggs or spiderlings within. Parasitic wasps may lay eggs on the cases, and their larvae will feed voraciously on the babies inside. Researchers have found that if a bird makes a hole in the case, various kinds of spiders that overwinter as adults may move in. These other spiders may go into dormancy with the *Argiope* spiderlings, but they may also gobble up any babies that are still in the case. Fortunately, enough cases survive undisturbed. More than 1,200 tiny yellow spiderlings have been recorded emerging from a single egg case, but usually there are 300-400 per case.



*The mother usually suspends her egg case under vegetation*



*These tiny yellow Black-and-Yellow Argiope spiderlings have emerged from their egg case in late spring. The babies hatched in the fall, but overwintered inside their case. They are sitting on a tangle of silk they've made, waiting for sufficient winds to carry them away. The odds are against them; only a few of these are likely to survive to adulthood and breed.*



*This adult female has her web in some flowering pennyroyal plants, which attract bees. She has caught two bees by 9:00AM!*



An immature female looks very different from an adult, and often makes a large, circular stabilimentum (although this one hasn't).

After they emerge, the babies usually form a tangle of silk, on which they gather together. They're waiting for warm, breezy conditions, so they can disperse through the air using a technique called *ballooning*. A ballooning spider raises its abdomen, and lets the wind pull a filament of silk from its spinnerets. As the breeze catches the silk, the spiderling lets go and becomes a tiny aerial traveler, sometimes staying airborne for days. By ballooning, the hundreds of spider babies can space themselves out to reduce competition and colonize new habitat. If the spiderling lands in a favorable location, it will stop and spin its first web. After a few molts, the little spiders will grow too heavy to balloon.

Small spiders are vulnerable to many predators. Fully-grown adults are too large for most insect-eating birds to tackle. But all kinds of predatory birds and insects (such as wasps, mantids, ladybug and lacewing larvae) take a huge toll on the spiderlings. A spider's life isn't easy; by late summer, only a tiny fraction of the spiderlings that hatched in the spring will have reached adulthood.

Whether you find their appearance beautiful or fearsome, or a little of both, Black-and-Yellow Argiopes are beneficial residents of gardens and yards. They need sunny areas with vegetation that is about three feet tall, with adequate spacing for placement of a web, and little or no use of pesticides (to which they're quite sensitive). Even if your yard has not hosted these spiders in the past, each spring's ballooning spiderlings have an opportunity to colonize new areas. Early this fall, take a look at these large and colorful spiders, before the frost, and watch for clusters of spiderlings in the spring. 🍂

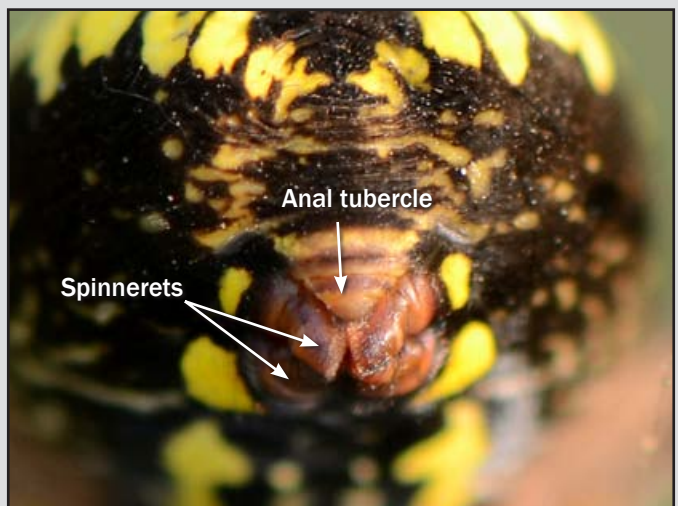
## Amazing Spider Silk



Spider silk has incredible physical properties. The strongest silks have the tensile strength of high-grade steel (but only a fraction of the density) and the toughness of nylon fibers. When exposed to water, some types of silk automatically contract, which may help maintain the web's integrity when it sags with morning dew.

Silk is a complex protein that begins as liquid or gel inside the spider's silk glands. As an orb weaver, the Black-and-Yellow Argiopo has multiple types of silk glands, each producing a different type of silk. As the silk gel passes through the gland leading to one of the openings called spinnerets, it's chemically and physically modified. The protein structure of the gel is further changed by the tension and shear forces the spider applies as she draws out the silk with her claws. Pulling on the silk transforms it into a solid filament.

Dragline silk is used for the frame of the web and isn't sticky. The spider generally walks on these lines, avoiding the "capture spiral." The capture spiral is made of a different type of silk, and precisely beaded with tiny drops of adhesive. There are specialized silks for the egg case, wrapping prey, and temporary scaffolding during web construction.



Closeup of the spinnerets of a Black-and-Yellow Argiopo

# Fall Caterpillars

A few colorful moth caterpillars are active in autumn. Most hairy or bristly caterpillars seen in the fall are in the tiger moth family, such as the familiar Banded Woollybear (also known as the Isabella Moth). Tussock moths, such as this Spotted Tussock Moth, are close relatives. They overwinter as caterpillars, waiting until sometime in the spring to make a cocoon and transform into an adult moth.

Fat green caterpillars of the Polyphemus Moth, a giant silkworm moth, are finishing their growth and looking for a place to build a cocoon. The cocoon is usually built among tree leaves, and may fall to the ground with the other leaves, or remain attached to the tree through the winter with a bit of silk. The spectacular moth will emerge in spring.



*Banded Woollybear*  
*Pyrrharctia isabella*



*Spotted Tussock Moth*  
*Lophocampa maculata*



*Polyphemus Moth*  
*Antheraea polyphemus*

## In this issue:

### Greater Yellowlegs



### Black-and-Yellow Argiope



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# EVENTS

## Naturalist Adventures

Third Sunday of the Month, 9am-Noon

**Sept 18 - Oct 16 - Nov 20 - Dec 18 - Jan 15 - Feb 19**

All trips meet at Avery Park Rose Garden: 1210 SW Avery Dr., Corvallis  
Come learn or share your knowledge about nature in the Willamette Valley. We look at birds, flowers, animal tracks and all kinds of other things. Our nature walks are slow-paced and casually structured. Bring along a hat, rain gear and shoes that can get muddy. Please, no dogs. Activities are geared toward adults but children may enjoy them too.

**Bad weather:** Rain, snow or cold will not prevent us from going out and enjoying nature. Remember to dress for the rainy and/or cold weather. If conditions are dangerous for road travel (like icy roads) trip may be canceled.

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