

*Program Meeting  
GHAS Annual Picnic  
Saturday, August 3rd*

LAKE SYLVIA STATE PARK,  
S2 BEACH SHELTER

July  
August  
2019



# The Sandpiper



illustration by David Allen Sibley

## **Protecting coasts, wetlands with natural barriers**

### ***Audubon Policy Office***

Shoreline and wetland habitats have continued to decline as sea levels rise, communities develop along coasts, and natural disasters increase, leaving many vulnerable birds species at risk.

The eastern subspecies of Red Knots has seen its population decrease by about 75 percent at key stopovers since 2000. And overall, shorebird populations in North America have decreased by 70 percent since 1973. Further losses of habitat could threaten other sensitive species, such as the Semipalmated Sandpiper, Whimbrel, Least Tern, Greater Yellowlegs, and more. Many migratory bird species rely on undisturbed stopover habitat in order to safely complete their journeys. If these habitats are not protected there may be an increase in death rates, and since migration is already a period of high mortality for birds, this could lead to further population losses.

Traditionally, human-made “grey” infrastructure—seawalls, jetties, levees, groins, bulkheads, and riprap—has been promoted as the best approach to flood management in the United States. These armoring structures are designed to protect shorelines and other flood-prone areas from major storm events, but they disturb natural processes and can increase the erosion of beaches, wetlands, inlets, and islands that are important to many birds.

Nature-based solutions in infrastructure have been shown to protect important habitat, while also pro-

viding long-term and cost-competitive flood reduction benefits. These methods include restoring and protecting wetlands, dunes, beaches, oyster and coral reefs, eelgrass beds, and mangroves.

The Federal Emergency Management Agency (FEMA) is currently seeking comments on how it should develop its new Pre-Disaster Hazard Mitigation Grant Program. This program dedicates funding to pre-disaster planning and infrastructure projects that help improve flood resilience in communities before disaster strikes. Audubon is encouraging FEMA to allow natural infrastructure projects to qualify for pre-disaster mitigation funding, not just “grey” projects. By including natural infrastructure in its suite of supported projects, FEMA will encourage flood resilience efforts that provide critical bird habitat, filter out water pollution, and create a range of lasting community-wide benefits.



## **Owls on Display**

We are pleased to be offering a raffle of this beautiful quilt made by a local quilter, Jule Monnens. Jule generously donated it to us as a fundraiser. The quilt measures 52” x 66”. We will be selling raffle tickets at events throughout the year and hold the drawing at our December meeting, in time for the holidays. Tickets are \$3 each. All proceeds will go to the Grays Harbor Audubon Society to help protect our wetland and forest properties.

You may view the quilt at the next meeting, our Annual Picnic August 3rd at Lake Sylvia State Park. We’ll sell tickets at Grays Harbor Audubon meetings in August, October, and December.

Buy lots of tickets, support our chapter, and win this great quilt!

## The President's Perch



*By Janet Strong*

I am so looking forward, and I hope you all are also, to our August 3 picnic at the charming Lake Sylvia State Park. Not only can we enjoy each others' company, catch up on news and eat good food, but we have other interesting options. Jude Armstrong and Helen Hepp promise to show us one of the park's natural phenomena located really close to our picnic site. And we may be able to talk Lee First into regaling us with her personal canoe-the-Chehalis tales. Please see accompanying articles for details. Hope to see you there.

Several organizations, including GHAS, plus the Quinault Indian Nation and the Chehalis Confederated Tribes are forming a partnership to work toward the protection of the entire Chehalis River basin. While still in the formative stages, this consortium promises to educate residents about pressing issues facing the watershed, beginning with the proposed dam on the Chehalis River above the city of Pe Ell. The board will keep members posted as plans unfold and activities commence.

GHAS is poised to embark on its first fish passage barrier removal project on its lands. This is scheduled for the summer of 2020, under the Family Forest Fish Passage Program (fondly known as Triple F, Double P), at little or no cost to GHAS. Five culverts, currently partially blocking fish passage into a salmon stream, will disappear and free access will be restored. See a board member for details.

Happy Summer!

### Upcoming GHAS programs

**Saturday, August 3**, GHAS Annual Picnic, Noon-3 PM, Lake Sylvia State Park, S2 Beach Shelter. Bring side dishes and/or desserts. We will bring hamburgers, veggie burgers, hot dogs, drinks. Parking pass required.

**Sunday, October 6**, 1:30 PM Hoquiam Library Meeting Room - Presentation on Wolf Haven, Tenino

**Sunday, December 1**, 1:30 PM Hoquiam Library Meeting Room - Lee First, Twin Harbors Waterkeeper will introduce us to the newly formed program for Grays Harbor and Willapa Bay.

## Birding the basin

*by Mary O'Neil*

Thursday afternoon July 18 found a group of 6 birders led by Mary O'Neil at the Grays Harbor Wildlife Refuge. It was a beautiful sunny afternoon with a light breeze. We were only slightly distracted by the construction project at the airport. The noise of the earth-moving equipment at work may have contributed to the lack of birds along the airport strip. The swallows were not to be put down, though, as we had a strong showing of all the local varieties including Violet Greens, Tree, Northern Roughwing and, I believe, even a few Cliff and Barn Swallows.

From the time we first arrived, we were overwhelmed by the numbers of shorebirds feeding in the basin. We started on an incoming tide so we were able to watch the ever compacting mixed flocks of shorebirds. There were smaller numbers of Semipalmated Plovers mixed in with large numbers of Western Sandpipers and Dunlin. We hesitated to officially call it, but we suspect some of the slightly larger very dull species could even have been migrating Red Knots. A covey of Caspian Terns were cackling cacophonously along the waters edge while the normally strident Marsh Wrens were noticeably quiet. Arnie Martin heard one and Mary O'Neil saw one bounce to the top of the grasses only to dutifully disappear.

The Great Blue Herons stood like sentinels greeting the incoming tide. We compiled a list of 21 species. View this checklist online at eBird Checklist - 18 Jul 2019 - Grays Harbor NWR-Bowerman Basin - 21 species (+1 other taxa).

Our next Birding Venture is scheduled for August 24. This is a Saturday trip leaving at 9:30 am from the South Shore Mall in Aberdeen headed out to Westport. If you have any questions or concerns, please contact Mary O'Neil at 360-533-9833.

Remember: When stress gets you down -  
Go Birding!



### **Nature walks at Ocean City State Park**

In Spring, GH Audubon was contacted by State Parks to help with Interpretive Programs for Ocean City State Park and maybe even Copalis Beach State Park. Janet Strong and Mary O'Neil agreed to help with this program scheduling July 11, August 15 and September 12 for 10:00 am Nature Walks at Ocean City State Park.

The first walk was heralded as a marvelous success. Two families including 2 adults and 2 children each joined Janet and Mary for a short forest walk and continuing on to the beach area with a

number of unique plant species being identified by Janet and various bird calls including the Common Yellowthroat being identified by Mary. The highlight for the children seemed to be getting their feet wet in the surf, and the major challenge for the parents was to get everybody back to the meeting place where the Park representative offered art materials so everyone could capture their experience in a personal drawing.

After the program, Janet and Mary decided to extend their nature experience into the afternoon by circling Ocean Shores in search of other birds and wildlife. The highlight of their afternoon excursion included watching a family of newly fledged Purple Martins testing their wings at the Quinault Marina. A short walk through the wildlife refuge revealed a trophy blacktailed buck and a small group of Willets and indistinguishable peeps at the edge of the backwater.

Overheard at the conclusion of the walk, the two set of grandparents promising to get the four kids together for another romp at the ocean. Maybe this walk connected two friendly families with each other, a very worthwhile thing.

### **Annual Grays Harbor Audubon Picnic at Lake Sylvia** *August 3rd, beginning at 12 noon*



Please join us on Saturday, August 3 at Noon, Lake Sylvia State Park, Montesano for the annual Grays Harbor Audubon picnic. We will be at Beach Shelter S2. Discovery Pass required.

We supply the main dishes - hamburgers, veggie burgers, hot dog and drinks and you bring side dishes to share. This year there will be a field trip around the area with two experienced botanists, Jude Armstrong and Helen Hepp on the topic, "How lightning has affected the forest."

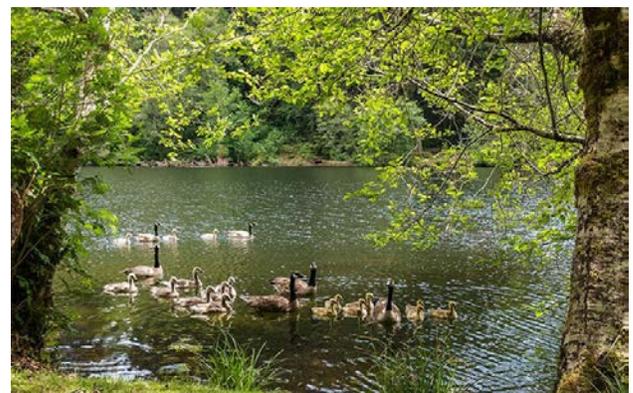




Photo by Tim Laman/Birds-of-Paradise Project

## The forgotten female - how a generation of women scientists changed our view of evolution

By Kathi Borgmann

A female Wilson's Bird-of-Paradise takes the perfect position above the male to appraise her colorful suitor. Delicate wiry feathers curl behind a male Wilson's Bird-of-Paradise as it sways back and forth, parading in otherworldly blues, reds, and yellows across the forest floor in Papua New Guinea.

Male birds the world over, with their extravagant plumes, songs, and dances, have puzzled scientists for over a century. Charles Darwin famously wrote in a letter to American botanist Asa Gray in 1860 that "the sight of a feather in a peacock's tail, whenever I gaze at it, makes me sick." Those plumes sickened Darwin because he could not understand why male birds were so elaborately adorned.

After years of deliberation Darwin proposed that flashy plumage and elaborate song and dance could be explained by female choice—what Darwin termed "sexual selection," a counterpart to his theory of evolution by natural selection. Males developed showy plumage and elaborate songs in part, Darwin said, to please choosy females.

"It is certain that amongst almost all animals there is a struggle between males for the possession of the female," Darwin wrote in 1874, in his book *The Descent of Man and Selection in Relation to Sex*. "Hence the females have the opportunity of selecting one out of several males, on the supposition that their mental capacity suffices for the exertion of a choice."

Darwin's theory on sexual selection and female choice set off a cultural explosion. It was fiercely attacked by Victorian society because it put females in control. Females, by a matter of choice, could alter the evolution of their own species.

Darwin's contemporaries deemed the notion that women had choices as preposterous.

"Seldom or never does the female exert any

choice. She is not the awardee of the prize, but rather a hunted creature," said German philosopher and psychologist Karl Groos in 1898.

"Females," says Cornell Lab of Ornithology postdoctoral researcher Karan Odom, "play a much larger role than we previously thought."

### *The female bird song project*

In 2017 Cornell Lab of Ornithology postdoctoral researcher Karan Odom and Katharina Riebel from Leiden University in Holland launched a citizen-science project to study female bird song. The project invites bird watchers everywhere to submit audio recordings of singing birds, especially females.

The goal of the Female Bird Song Project is to increase the awareness and documentation of female bird song. Citizen scientists can upload their audio recordings of females singing to the Cornell Lab's Macaulay Library with an eBird checklist. Macaulay Library Director Mike Webster says the Female Bird Song Project offers bird watchers a chance to be science pioneers. "This is an opportunity to contribute to a whole new area of science," Webster says.

Loss of song, Odom and colleagues surmise, could be due to the evolution of migratory behavior among some songbirds. Neotropical migratory species (New World warblers, for example) spend only a few short months on their northern breeding grounds in the U.S. and Canada, which means it may be more efficient for these species to divide up tasks between males and females for raising a family. If the male focuses on defending the territory, the female can then focus on nest building and tending young, which doesn't require song. And, it may be safer for the females to keep quiet both for themselves and their young, so they don't become somebody's lunch.

In tropical areas where female birdsong is more common, and where songbird species with female singers are nonmigratory, pairs of birds defend territories year-round. Defending that turf may be easier when both males and females are singing. The Cornell Lab's Webster says that in tropical areas where there is strong competition for resources such as nesting sites or food, "you'd expect females to evolve whatever trait gives them the competitive edge. And that could be showy plumage or song."

### *Do Females Claim Their Mates Through Song, Too?*

On the campus of the University of California in San Diego, Dark-eyed Juncos are doing something new. Normally Dark-eyed Juncos in southern California are migratory, visiting only during

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***Forgotten Female continued from page 4***

the winter. But in the early 1980s, a small population of juncos decided to stay put on campus year-round. Changing migratory strategies is not too surprising given that warmer temperatures and the provision of year-round resources, such as bird feeders, can tempt a species to stay. What is surprising about this now-sedentary songbird population is that the females may be starting to sing.

Song isn't the only thing females lost over time, says Jordan Price from St. Mary's College of Maryland. Price, like Odom, built an avian family tree, but this time he looked at plumage coloration, drawing a line back in time to determine what females and male ancestors of 37 different blackbird and grackle species (from Red-winged Blackbirds to Greater Antillean Grackles) might have looked like. Today male Red-winged Blackbirds sport showy red-and-yellow wing epaulets, and male Boat-tailed Grackles are an iridescent glossy black, but females of both species are dull brown. In the past, Price found, both males and females of blackbirds and grackles had brightly colored plumage. Females in these species, says Price, may have evolved duller plumage to help them blend in with their surroundings, when the pressures to hide from predators increased.

The once colorful and boisterous females, according to Odom's and Price's research, put a bit of a wrinkle in Darwin's theory. Underlying Darwin's theory of sexual selection is an assumption that both males and females once had duller colors and simpler vocalizations. Males then evolved elaborate traits because females started choosing brighter and more eloquent males, according to sexual selection.

***Are Odom and Price suggesting that Darwin was wrong?***

"Darwin wasn't wrong," says Price, "but our findings contradict [scientists'] assumptions."

Male colors and songs can still be driven by females choosing males with certain traits, à la sexual selection, says Price, but other selective pressures can also act on females, and these pressures can act on males and females differently, and at the same time.

"Maybe it's not just sexual selection that's causing elaboration, but maybe it's a suite of different selection pressures that can act on both males and females," says Odom.

Those suites of pressures are what researchers call "social selection," a term first used by Smithsonian Tropical Research Institute scientist Mary Jane West-Eberhard in 1979 as an alternative to sexual selection. Social selection, Odom says, is

broader than sexual selection and involves competition not just for mates, but also for resources such as territories, food, or nest sites.

Social selection offers a new way to explain the evolution of female ornamental traits, such as song, that scientists previously assumed evolved only in males through sexual selection. Female bird song, says Odom, "likely evolved to help mediate a range of social behaviors and interactions, including competition for food or defense of territories inside and outside of the breeding season," and social selection offers an explanation.

***Secrets Of Female Birds Are Revealed***

It isn't just evolutionary biology that had a history of overlooking females; ornithologists, too, have focused primarily on males in the past.

Until the late 1980s, many ornithologists assumed that songbirds were monogamous. Then along came the technology of paternity testing. DNA analysis revealed that sibling chicks in the same nest frequently came from different fathers. Male birds, scientists discovered, often sneak off to mate with additional females, spreading their genes far and wide—what ornithologists call extra-pair copulation.

For males, it was literally better to not put all their eggs in one basket. As for female birds, the prevailing view among ornithologists at the time was that female birds were the victims of extra-pair copulations. In a paper published in the journal *Ethology* in 1987, British biologist Tim Birkhead surmised that female birds could be expected to alter their behavior to "reduce the risk of suffering of a forced extra-pair copulation."

Females weren't victims at all. In fact, they were calling loudly to other male Hooded Warblers, as if to say: "Hey, I'm over here!"

Female birds were also seeking additional mating opportunities to get a few more good genes for their offspring, Stutchbury concluded. In fact, the females may even be orchestrating the system to get more extra-pair copulations. By coordinating when they breed, a group of female birds can essentially force all of the males to strut their stuff at the same time, making it easier for them to evaluate multiple males and choose one—or more—of the best, says Stutchbury.

*To read the entire article, please visit <https://allaboutbirds.org>*



## **Boosting genetic diversity may save vanishing animal populations. But it may also backfire**

*By Elizabeth Pennisi*

The expanding global human footprint is dividing the world's flora and fauna into ever-smaller, more isolated populations that could wink out because of inbreeding, disease, or environmental change. For decades, conservationists have proposed revitalizing those holdouts by bringing in new blood from larger populations. But they've wondered whether it really works—and how to do it without swamping the genetic identity and unique adaptations of the group at risk. Last month at Evolution 2019 here, researchers described how genomic tools are refining what is known as genetic rescue.

Although zoos have worked to maintain genetic diversity in endangered species by carefully matching individual animals for breeding, the strategy has rarely been tried in nature. Genetic rescue “should be attempted more frequently,” Andrew Whiteley, a conservation genomicist at the University of Montana in Missoula, and his colleagues wrote last week in *Trends in Ecology and Evolution*. But showing that it works requires tracking multiple generations for years, something few studies have attempted. And researchers have only recently been able to detect what happens on a molecular level. Now, says Sarah Fitzpatrick, an evolutionary biologist at Michigan State University's (MSU's) W. K. Kellogg Biological Station in Hickory Corners, “We have genomic tools to study these populations ... in ways we never could before.”

Adding new blood to small populations really does help, a long-term experimental evolution study of wild guppies in Trinidad has demonstrated, says Brendan Reid, an MSU conservation biologist who works with Fitzpatrick. Decades ago, researchers seeded the headwaters of two streams in the mountainous country with guppies taken from a distant habitat. In one stream, the displaced fish had to travel a long way and only slowly made their way downstream to a small,

isolated population. In the other stream, the fish more quickly joined another isolated group. Every month for 2.5 years, Fitzpatrick and her colleagues caught, marked, and studied all the fish they could find at the isolated groups' territories before returning the fish to the streams. They tracked the growth, survival, and genetic diversity of the fish over about seven generations.

In both streams, the populations increased 10-fold and genetic diversity doubled. Later generations were more fecund, with many of the most fit offspring being hybrids of the local and introduced fish, Reid reported at the meeting. But the findings also sounded a note of caution. In the second stream, the rapid infusion of new fish almost completely eliminated pure residents—an outcome conservationists usually hope to avoid. That result suggests “a slow trickle of immigration might be preferable,” Fitzpatrick says.

Another genomic study showed some small populations experience natural genetic rescue—and benefit from it. Nancy Chen, a population geneticist at the University of Rochester in New York, and her team study the threatened Florida scrub jay (*Aphelocoma coerulescens*), whose numbers are down to a few thousand individuals, split among a few hundred sites. For 50 years, researchers have regularly counted and assessed all the jays found at Archbold Biological Station near Lake Placid, Florida. More recently, they've collected blood samples from each bird, which enabled Chen and her colleagues to track genetic changes over time.

The team discovered that the population naturally gets a slow infusion of new blood. Typically, birds trickle in from smaller groups a few kilometers away. The newcomers are less genetically diverse than those already there, but because they are from a different population, they help maintain the resident group's diversity. However, with fewer birds arriving in recent years because of population declines, that diversity is declining, putting the population at risk of dying out. “Gene flow from small populations may be really important,” she concluded at the meeting.

Most biologists have assumed that larger populations are better sources of new blood. But Chris Kyriazis, a graduate student at the University of California, Los Angeles, used computer models to study the impact of deleterious mutations hidden in a source population. Because such mutations tend to be harmful only when both parents pass the mutation to offspring, they are likely to be eliminated from historically small, inbred populations and to persist in larger ones.

*Read more at <https://www.sciencemag.org/>*

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### ***GHAS Mission***

The mission of the Grays Harbor Audubon Society is to seek a sustainable balance between human activity and the needs of the environment, and to promote enjoyment of birds and the natural world



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## ***Program Meeting***

### ***Annual Picnic***

### ***Saturday***

***August 3rd  
12 noon - 3:00 pm***

***Lake Sylvia State Park  
S2 Beach Shelter  
Discovery Pass Required***

## **The Sandpiper**

P.O. Box 470  
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