

WELCOME TO THE MORSE WILDLIFE PRESERVE

A THRIVING PARTNERSHIP

The Morse Wildlife Preserve contains over 90 acres of land that was preserved to be wildlife habitat. It also provides an exceptional educational and recreational experience for hundreds of visitors each year. Forterra, Tahoma Audubon Society, and the Morse Force work together to help steward the land for today's visitors and future generations.

The preserve started with a donation of about 50 acres of land from Lloyd and Maxine Morse. A private party purchased another 40-plus acres and then donated that land to the Tahoma Land Conservancy (now Forterra). Forterra owns the property, while the Tahoma Audubon Society provides educational programming and support. The Morse Force, a group of dedicated local volunteers, provides essential management and maintenance support, including staffing for work parties and events like Second Sunday.

The preserve is an exceptional educational opportunity to learn about five critical habitats. As you walk the trails, look for:

- Dry Douglas-fir forest
- Prairie
- Oregon white (Garry) oak savanna/woodland
- Wetlands and Muck Creek
- Moist lowland mixed forest (cedar, hemlock, Sitka spruce, and Douglas-fir)

VISITING

The Preserve is open only by permission and on special public entry days, which are the second Sunday of the month, April through October.

To arrange a visit, please email morsewildlifepreserve@gmail.com.

Guidelines for visitors include:

- Stay on trails and the boardwalk
- Leave bikes at home
- Leave all pets at home
- Do not disturb plants and animals
- Practice Leave No Trace principles



This Interpretive Trail Guide offers visitors a route to follow for maximum enjoyment of the Preserve.

STOP 1 | MAIN KIOSK

You are welcome to walk the trails in any direction. The guide lists points of interest numbered 1 through 36. Stop 2 is north of the main kiosk in the dry Douglas-fir forest. The numbered stops continue clockwise through the prairie, along the wetland edge, to the tower, onto the boardwalk crossing Muck Creek, into the moist lowland mixed forest and forested wetlands, and finally back through the prairie into the oak savanna before returning to the dry Douglas-fir forest. In this Trail Guide, the trails and stops are color coded to indicate habitat types that have a common ecological origin.

STOP 2 | HILLS IN THE FOREST

Look closely at this mound of needles and forest debris. Do you see it moving with life? These are formica ants – also called red-headed or thatching ants. Ants play important roles in the forest. They help recycle nutrients by eating dead and decaying plants and animals. The ants spread plants by carrying seeds to their hills, dropping some along the way. This is true for plant species like trillium, lilies, and bleeding heart. In turn, the ants are eaten by Northern Flickers who also "dust" themselves in the hill. The ants probably eat parasites in the bird's feathers and the formic acid in the ants bodies may kill the parasites.

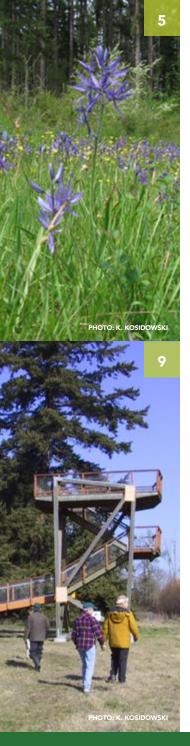
STOP 3 | "S" SHAPED DOUGLAS-FIR TRUNK

Can you see the tree with the "S" shape in the trunk (pictured)? There are several examples at Morse Wildlife Preserve. Many things shape trees, including weather, competition from other trees, impact of animals, and disease. No one knows for sure what happened to this tree. What is your guess?

STOP 4 | WESTERN RED CEDAR

Step into the "tree house" and notice the difference between the western red cedar with its stringy bark (pictured) and the Douglas-fir. Western red cedar was considered the Tree of Life by Native Americans who live in this area. They used cedar for everything from canoes to medicine to clothing to diapers.





STOP 5 | A PART OF THE PUGET PRAIRIE

Prairies exist in southern Puget Sound because of the gravelly, sandy soil left behind from the melting of the great glaciers that covered the area over 12,000 years ago. The soil was dry and the weather warm and sunny for grasses and wildflowers, but too much so for forests to grow. From this stop, the prairie/grassland spreads south. Native Americans burned areas like this to farm them for staples of their diet, like a variety of bulbs and roots. A special favorite was the blue camas lily (pictured), which blooms in May. Another lovely prairie plant, the blue violet, is host to a unique and disappearing butterfly – the Great Fritillary – which was spotted and photographed on this very prairie!

STOP 6 | BEAUTY SPOT, A FOREST LAYER CAKE

Notice the overhead canopy of bigleaf maple, Western red cedar, Douglas-fir, and Oregon ash. Then, lower your eyes to the forest middle story with vine maple and other shrubs. Lower yet is the ground cover with forest litter, sword fern, wild ginger, trillium, and other perennial plants. Why does this part of the forest have so many layers?

STOP 7 | THE EDGE OF THE PALUSTRINE WETLAND

This is an ecological hot spot! Frogs, bugs, birds, beaver, deer, and other critters love this watery area. Plant diversity is excellent despite invasion by reed canary grass, a nonnative plant that can overtake the native habitat.

STOP 8 | THE WOLF TREE

This large Douglas-fir is about 120 years old (cored in 2013). It has many low branches because it has no competition from other trees, and is fast-growing with plentiful sun, water, and better soil – essential ingredients for any plant.

STOP 9 | THE TOWER

Climb the tower for an awesome 360-degree view of the Preserve! Voices carry, so please talk quietly so as not to scare the wildlife. While up high, note the open water in the center of the palustrine wetland, where water fowl are found. This wetland hosts birds like the American Bittern, the Virginia Rail, Mallard, Great Blue Heron, Marsh Wren, Canada Goose, and other species. From the tower, look south to see the entry to the boardwalk and the trail beyond.

STOP | 10 KIOSK & INFORMATION

A large map, trail guides, and other information are here. This is also a fork in the trail. You may choose to continue on through the prairie landscape to the west, or go to the east over the creek into wetlands and a mesic conifer forest beyond. The boardwalk, puncheons, and trails east of this point were built entirely by volunteers with money raised by them, too! Because of all their effort, you now have access to over 60 more acres with a new habitat type to preserve, explore, and enjoy. The acreage is largely wetlands on silty soil. The bridge crossing Muck Creek is at about 460 feet elevation, as is the boardwalk. The trail beyond slowly climbs to a high point of about 500 feet, and the soil changes to a different type: sandy loam.

STOP 11 | THE BRIDGE OVER MUCK CREEK

This bridge marks a fast transition from dry prairie into the palustrine wetland, crossing the official creek channel named Muck Creek. Various streams flow through the wetland and coalesce into this main salmon-bearing creek. From the Preserve, Muck Creek flows eastward through the Nisqually Watershed. It crosses South Puget prairies and Joint Base Lewis-McChord and eventually empties into the Nisqually River. The Preserve is entirely within the Nisqually Watershed.

STOP 12 | CATTAILS AND HARDHACK

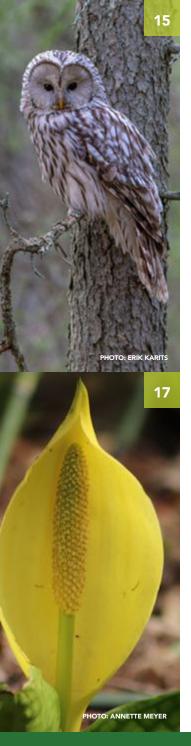
This first big deck off the boardwalk overlooks the palustrine wetland to the north and south. Cattails (pictured) and hardhack (rose spirea) are two common plants growing in thickets. In time they may crowd out the coarse, non-native reed canary grass that is low-quality habitat. Cattails are choice habitat for Red-winged blackbirds. Can you see or hear them? Hardhack has fuzzy pink flowers in a pyramidal cluster in late summer and makes great cover for smaller birds like the marsh wren. The hardhack flowers turn brown and dry in place – an easy feature to identify this species in winter.

STOP 13 | BEAVER WORKS

Start listening for small waterfalls. From here to the next big deck, there are smaller channels of flowing water that beavers like to dam up. The waterfalls are due to the dam built in a narrow portion of the channel. Beavers move up and down these streams, and their dams can come and go. The water deepens and spreads in front of their newly built structure and can quickly change wetland conditions.







STOP 14 | TREE SNAGS

The next three stops are here on the second big deck. At 14 (the west rail), look up and slowly turn completely around. As you turn, you will see at least 12 cedar snags, some dead and some still alive. What do you think happened to these trees? Snags are of huge value in the life of a forest. They provide habitat for nests, food, shelter, and safe perches. Over time they will fall and may become nurse logs. This place is good to listen and look for a waterfall caused by a beaver dam.

STOP 15 | ARE YOU FOR THE BIRDS?

Often a variety of birds are seen on these snags. Listen and look for perching songbirds, woodpeckers, and Steller's Jays. Watch for flying hawks, eagles, and swallows. Did you know that the Preserve has over 60 species of birds? Most are native to this area but some, like the Barred Owl (pictured), are invasive species. Use the bird list at the back of this guide to learn more and to make a mental note of the species you see and hear - even if the birds are on the property next door.

STOP 16 | A FORESTED WETLAND

Here on the east rail of the big deck, as you look and then walk on, note the change in habitat from an open shrub palustrine wetland to a forested wetland. The dominant plants are now Sitka willow, red alder, red-twig dogwood, and salmonberry. The disturbance of invasive, non-native plants becomes less. But the disturbance of natural factors (wind, ice and snow, and rising water levels) has caused the alders to lean and snap.

STOP 17 | DEVIL'S CLUB OUTLOOK

You may notice that plant communities have changed again -from a deciduous forested wetland to a wetland dominated by red alder, Western cedar, some vine maple, skunk cabbage (pictured), devil's club, and other species. In early to mid-March, skunk cabbage (also called "swamp lantern") makes this space glow. Soon after, salmonberry blooms with small but brilliant magenta flowers on brown, prickly stems. Devil's club waits until late spring with its white flowers in pyramidal clusters that mature to red berries. Note also its huge, spiny leaves that are shaped like maple leaves, and its stems armed with half-inchlong spines. Two more ground covers are of note: the Pacific water parsley and its uncommon relative, kneeling angelica. The latter is more upright and taller, and has kinks in the leaves. This is a great place to botanize and see beautiful plants.

STOP 18 | MOSSES, ETC.

Stepping off the end of the boardwalk, you enter still another plant community. The main ground covers are soft, evergreen mosses. Look up and note the verticality of the forest. The high canopy overhead is composed of older, maturing hemlock, cedar, and Sitka spruce, all situated on slightly elevated ground. Five mosses to look for here and in this maturing forest are Oregon beaked moss (pictured), badge moss, tree moss, Douglas' neckera, and stair-step moss.

STOP 19 | THE STAGING "FORK"

In this litter-covered opening, you are about to enter a "figure 8" shaped trail. The guided walk follows the outside edge of the "8." Those wishing a shorter walk may choose the lower loop by going right or left at this junction. Both loops have puncheons (small wooden planks) to provide for good walking.

STOP 20 | THE RAIL FENCE "FORK" OR SPRUCE STATION

Just before you reach this next fork in the trail, there is an 80-yearold Sitka spruce. Look for grey brown bark that breaks into small plate-like scales. Sitka spruce is relatively uncommon in our lowlands. Most of these trees were high-grade logged early in the 1900s along with old growth cedar, hemlock, and Douglas-fir. The left fork continues to higher ground, and the right to the shorter loop. At the corner of the rail fence, check out the evergreen deer fern, one of six species of fern found in the Preserve.

STOP 21 | "RESURRECTION" TREES

Around the Z-shaped puncheon is a fairy-like wonderland with its excellent examples of fallen cedars that are not dead ... yet. These nurse logs (pictured) are alive. Their branches are now tree leaders; the single leader is resurrected as at least three "trees." The cedar bark is covered with mosses and licorice fern. Horizontal trunks have good quantities of moisture, nutrients, and micro habitats, and usually more light and less competition. Nurse logs can be a good indicator of ongoing forest succession.

STOP 22 | TREE RINGS

At the end of the puncheon is a cut nurse log. One way to tell the age of a tree is to professionally core it, as a state forester did for the tree at Stop 8. Another way is to count the annual rings. How old was this tree before falling?



MORSE WILDLIFE PRESERVE

INTERPRETIVE TRAIL

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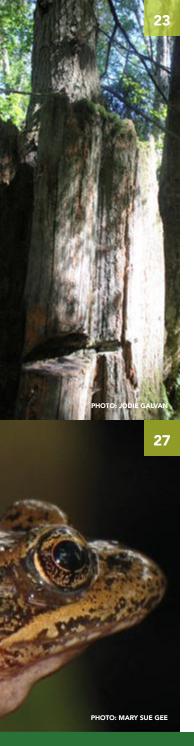
Email morsewildlifepreserve@gmail.com to arrange a visit, or visit from 9 a.m. to 3 p.m. on the second Sunday of the month, April through October.

- Stay on trails and the boardwalk
- · Leave bikes at home
- Keep all pets at home
- Leave all plants and animals undisturbed
- For the protection of this valuable resource, practice Leave No Trace principles
- Return this guide to the main kiosk (Stop 1) at the end of your visit

Happy trails!

70th AVE. E.





STOP 23 | SPRINGBOARD HOLES, STUMPS, AND SCARS

Near the trail is a stump of an old growth cedar tree, which sustains a maturing hemlock (pictured). The first logging event on Morse Wildlife Preserve probably occurred in 1902 when axes and cross-cut saws were the tools. The saws were operated by hand by two men standing on boards driven into the butt of the tree. The boards raised the loggers above the surrounding vegetation and also to a narrower spot in the trunk. Stumps play an important ecological role in the forest, providing food, shelter, and a nursery for seedlings that are above the reach of browsing elk and deer.

STOP 24 | BROOKLETS: A STREAM CONFLUENCE LOOKOUT

This is a small lookout over the confluence of two surface water brooks. Several perennial brooks form from seeps and drainages along this back slope. All of them flow downhill into Muck Creek and are part of its headwaters. Sometimes the brooks are above ground; sometimes they disappear underground only to resurface downslope. Good water quality in these small streams ensures better water quality downstream. An important task for future work is to locate and map all the brooks and to preserve their uphill habitat and sources.

The trail now enters a mesic (somewhat wet, somewhat dry) forest of mostly cottonwoods, big leaf maples, and alders. Much natural litter is on the woodland floor. Hemlock, spruce, and cedar are slowly returning to this area. Why are they all young? This is a high spot (approximately 500 feet elevation), a turning in the trail, and finally a change in soil type from the dominant silt to sandy loam.

STOP 25 | NATURAL DISTURBANCES

A jagged, blackened, and broken trunk is the remnant of a once large conifer. What happened to it and several other trees in this area? Which event happened first – wind or fire? Did logging occur before or after? Habitats endure natural disturbances like floods, wind, fire, and volcanoes. If the habitat is healthy, intact, and large, it can recover on its own. If not, recovery is difficult, even with help from humans.

STOP 26 | CULTURAL DISTURBANCES

You are standing on an old road, probably used for logging. The signs of cultural (human-made) disturbances are all around: a lack of conifers, the presence of non-native weedy species like Himalayan blackberry and reed canary grass, a flattened wider trail. From this stop through Stop 33, there are more signs of disturbance. What other changes and artifacts can you see in the forest between these stops?

STOP 27 | FROGS, ETC. BACK ON SILTY SOIL!

This spot includes a large Western red cedar tree, and a bench off the trail and away from the water. Sit quietly and observe – look and also listen ... for "plops." Morse Wildlife Preserve has at least two frog species: the red-legged frog (pictured, previous page) and the Pacific tree frog. Amphibians and reptiles are critical wildlife in our forests and wetlands, even as their numbers decline here and worldwide. The greatest destructive force is habitat disturbance. The growth of human population brings great and rapid changes resulting in too little or too much water. Native habitats are cleared for construction and agriculture, and non-native species like bullfrogs are introduced.

STOP 28 | THE OPENING IN THE FOREST

The right fork of the trail leads back to the rail fence and a return to the boardwalk. Choose the left fork and experience other habitats. You are now entering an open, recovering woodland that leads to a grassy area. This entire area was probably used for a staging spot for a logging event in the late 1940s or early 1950s that removed many to all of the trees and undergrowth. Many Oregon ash saplings are returning naturally. Decades may be necessary for natural reforestation to occur. To hasten the process, cedar, Sitka spruce, and hemlock are being planted along with other species of trees and shrubs. All of these species belong in this plant community and the plants are being sourced locally.

STOP 29 | MAMMALS ON MORSE

Because of the logging disturbance, the forest is very open and a fully open grassy area still exists. These habitats, plus the adjacent forest and watery places, provide ideal environment for Roosevelt elk and black-tailed deer (pictured). Other mammals you might see, hear, or note signs of are raccoon, coyote, bobcat, Douglas squirrel, cougar, mountain beaver, porcupine, river otter, beaver, rabbit, moles and shrews, short-tailed weasel, and more. Signs to look for are tracks, scat, fur clinging to branches, browsed shrubs, and de-barked young trees (from elk and deer rubbing their antlers). What other signs have you seen?

STOP 30 | SEDGE, RUSH, AND HORSETAIL MEADOW

The mostly open grassy area retains some native sedges, rushes, and horsetails, all forming a beautiful meadow. This is just right for deer and elk to bed down in, and for coyotes to use for hunting and play. Clumps of Sitka willow and ninebark are scattered around this area that was once forested. But perhaps this diversity in habitats is more valuable as is, rather than being restored to a forested wetland. What do you think?





To the west about 150 feet runs Muck Creek. Its adjacent wetland is infested with reed canary grass. This poor quality habitat does need restoration – back to a forested wetland that in time will offer higher quality habitat to mammals, birds, reptiles, and amphibians.

STOP 31 | STUMPAGE

Pause, look around, and count the old stumps in the landscape left from the first logging event over 100 years ago (about 1902). The stumps (pictured, previous page) indicate how many old growth (200 years old or older) conifers were growing here then. Data exist that indicate an acre held eight such trees in a multi-layered forest.

STOP 32 | OXALIS/SPRUCE COMMUNITY

Several short puncheons take you over the surrounding forested wetland that stores flood water and recharges groundwater. Due to the soggy, silty soil, the groundcover vegetation differs slightly. Look for oxalis leaves (pictured) shaped like three-leaf clovers. Bittercress (a member of the mustard family) and twisted stalk (of the lily family) are nearby. Sitka spruce is not found right here, but is commonly associated with an oxalis plant community – as are lots of salmonberry and skunk cabbage.

STOP 33 | A DISTURBED PRAIRIE

Nearly five acres of this prairie were pasture for domestic animals in previous years, which caused the habitat to seriously decline. Prairie restoration has begun with several projects. Funding from Wildlife Habitat Improvement Program grants helped establish two plots. Funding from Toyota TogetherGreen by Audubon helped establish 20 small experimental plots – all done by classes from nearby Rocky Ridge Elementary School! More work still needs to be done.

STOP 34 | THE OREGON WHITE (GARRY) OAK SAVANNA

The trail leads into the prairie and then the oak savanna, which is becoming an open oak woodland. Over 36 naturally growing oak trees are on Morse Wildlife Preserve. Sixteen large Douglas-firs were logged off this area, so the existing oak saplings had more light, water, and nutrients. Over 50 oak seedlings and acorns were planted in 2002 to increase the population. Planting oaks is a real investment in the future, as they grow very slowly. Their nuts were an important food source for Native Americans. The ink made from their oak galls is similar to oak ink used by Bach, da Vinci, and other artists, and by Americans in 1776 to write the U.S. Constitution. Look for the ink galls (apples) on the trees and the nearby ground. Note also lichens growing in symbiosis with the oaks. Lichens are a combination of fungus and algae, and many varieties exist on the Preserve.

The right-hand trail leads back to the parking lot. The left-hand trail leads into the dry Douglas-fir forest.

STOP 35 | REACHING FOR THE SUN

In the dry Douglas-fir forest, notice how the trees are all about the same age (about 80 years old, cored in 2013). The trees are crowded, growing straight up to get light. Firs are susceptible to and weakened by laminated root rot. The wind has created snags and nurse logs of many of these firs.

STOP 36 | FOREST SUCCESSION

Forest regeneration is naturally occurring largely by bigleaf maples, which are resistant to root rot. These hardwood maples are well-spaced and will help with diversification. Western hemlock and cedar may also help forest regeneration, but this forest will likely remain dominated by Douglas-fir. This semi-open canopy of the forest has many flowering shrubs, and depending on the time of year will display beautiful flowers of trillium, snow queen, Columbia lily, pipsissewa, and white fawn lily (pictured). The next fork in the trail returns you to the parking lot (right) or continues further into the dry Douglas-fir forest.

Text by Mary Sue Gee and the Morse Force Management Team.

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August 2020



BIRDS OF MORSE WILDLIFE PRESERVE

List Compiled By Tahoma Audubon Members

WATERFOWL

- o Canada Goose
- o Wood Duck
- o Green-winged Teal
- o Mallard
- o Cinnamon Teal
- o Northern Shoveler
- o Gadwall
- o American Wigeon
- o Ring-necked Duck
- o Bufflehead
- o Hooded Merganser

GALLINACEOUS BIRDS

- o Ring-necked Pheasant
- o California Quail

GREBE

o Pied-billed Grebe

CORMORANT

o Double-crested Cormorant

HERONS

- o American Bittern
- o Great Blue Heron
- o Green Heron

RAPTORS

- o Osprey
- o Bald Eagle
- o Northern Harrier
- o Sharp-shinned Hawk
- o Cooper's Hawk
- o Red-tailed Hawk
- o American Kestrel
- O American Kestre
- o Merlin
- o Turkey Vulture

RAILS

- o Virginal Rail
- o Sora
- o American Coot
- o Shorebirds
- o Semipalmated Plover
- o Killdeer
- o Greater Yellowlegs
- o Lesser Yellowlegs
- o Spotted Sandpiper
- o Least Sandpiper

GULL

o Glaucous-winged Gull

PIGEONS, DOVES

- o Rock Pigeon
- o Band-tailed Pigeon
- o Eurasian Collared-dove
- $\circ \ Mourning \, Dove$

OWLS

- O Barn Owl
- o Great Horned Owl
- o Barred Owl*
- o Short-eared Owl

SWIFT

o Vaux's Swift

HUMMINGBIRDS

- o Rufous Hummingbird
- o Anna's Hummingbird

KINGFISHER

o Belted Kingfisher

WOODPECKERS

- o Red-breasted Sapsucker
- o Downy Woodpecker
- o Hairy Woodpecker
- o Northern Flicker
- o Pileated Woodpecker

FLYCATCHERS

- o Olive-sided Flycatcher
- o Western Wood-pewee
- o Willow Flycatcher
- o Pacific-slope Flycatcher

VIREOS

- o Cassin's Vireo
- o Hutton's Vireo
- o Warbling Vireo
- o Red-eyed Vireo

CORVIDS

- o Gray Jay
- o Steller's Jay
- o American Crow
- o Common Raven

SWALLOWS

- o Tree Swallow
- o Violet-green Swallow
- o Northern Rough-winged Swallow
- o Cliff Swallow
- o Barn Swallow
- o Purple Martin

CHICKADEES

- o Black-capped Chickadee
- o Chestnut-backed Chickadee

NUTHATCH

o Red-breasted Nuthatch

- o Bushtit
- o Brown Creeper

BUSHTIT, CREEPER

WRENS

- o Bewick's Wren
- o House Wren
- o Pacific Wren
- o Marsh Wren

KINGLETS

- o Golden-crowned Kinglet
- o Ruby-crowned Kinglet

THRUSHES

- o Western Bluebird
- o Townsend's Solitaire
- o Swainson's Thrush
- o American Robin
- o Varied Thrush

STARLING

o European Starling*

PIPIT, WAXWING

- o American Pipit
- o Cedar Waxwing

LONGSPURS, WARBLERS

- o Lapland Longspur
- o Orange-crowned Warbler
- o Yellow Warbler
- o Yellow-rumped Warbler
- o Black-throated Gray Warbler
- o Townsend's Warbler
- o Macgillivray's Warbler
- o Common Yellowthroat
- o Wilson's Warbler

TANAGER

o Western Tanager

SPARROWS

- o Spotted Towhee
- o Chipping Sparrow
- o Savannah Sparrow
- o Song Sparrow
- o Lincoln's Sparrow

o Dark-eyed Junco

- o Golden-crowned Sparrow
- o White-crowned Sparrow

GROSBEAK

o Black-headed Grosbeak

PHOTO: NICOLE MARCOTTE

BLACKBIRDS

- o Red-winged Blackbird
- o Western Meadowlark
- o Brewer's Blackbird
- o Brown-headed Cowbird
- o Bullock's Oriole

FINCHES

- o Purple Finch
- o House Finch
- o Red Crossbill
- o Pine Siskino American Goldfinch
- o Evening Grosbeak

WEAVER FINCH

o House Sparrow*

*Invasive bird species in Washington

15







Supported and maintained by:

Forterra | 206-292-5907 www.forterra.org

Tahoma Audubon Society | 253-565-9278 www.tahomaaudubon.org

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