

Bird Use of Russian Olive (*Elaeagnus angustifolia*) in Two Additional Canyons at Hagerman Fossil Beds

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This report is a supplement to the bird survey report done in 2021

Introduction

Russian olive (*Elaeagnus angustifolia*) is found in many of the canyons on the west side of the river at Hagerman Fossil Beds National Monument (HAFO). Russian olive is native to Europe and Asia. It was introduced to the U.S. in the early 1900s and became widely distributed due to its extensive use as an ornamental species in drier regions of the Great Plains and Rocky Mountains. Russian olive has since escaped cultivation and become invasive. This species thrives along riparian corridors like these canyons and it has taken over and become the dominant tree species there. At this time, it is uncertain if it has supplanted something native or if trees never occurred in these canyons. It is difficult to assess given the heavy loading of tumbleweeds [mainly another invasive species, Russian thistle (*Salsola* sp.)] in the bottom of the canyons where the Russian olive is found.

Russian olive is a large, thorny, perennial deciduous shrub or small tree usually growing 10 to 25 feet tall. Russian olive thrives under a wide range of moisture and soil conditions and some these trees are also found high up on the steep slopes of these canyons on what appears to be very dry sites.

Southern Idaho Parks vegetation program staff plans to begin removing this invasive species in the fall of this year from a canyon cleared by the 2021 survey and report. This survey was undertaken to assess more areas of HAFO for possible future invasive species treatments. Surveys aim to identify species that may be present and using these non-native trees and to determine what the effects of treatment to remove this invasive species may have on the bird community.

Treatments being considered include chainsaw cut-stump treatments and/or girdling of trees. These treatments would be aimed at returning the canyons and their riparian areas to a more historic structure and species composition as well as returning the canyons themselves to a more natural erosion regime which allows for the gradual exposure of fossils.

Methods

Madison Blackwell (Biological Science Technician) and I arrived on the morning (approx. 6:00 am) of June 6 and parked at the bottom of the canyons near the Snake River. Winds were calm and it was 60 degrees Fahrenheit. We hiked up the canyon north of the canyon surveyed in 2021 (see figure 1). We remained relatively close together until the canyon split and then we split up to cover more ground (figures 1 and 2). We identified every bird seen or heard, stopping often to glass the Russian Olives ahead with binoculars. We reached the top of our respective canyons about 9:15 and winds were still less than 5 mph. Madison then made her way along the top of the canyon most of the way to my position as I had stopped for an extended period to observe heavy bird activity in the Russian olives

stands near the very top of the canyons. We then worked back along the rim of the canyon (east) to past where Madison had crested before heading back to the truck.

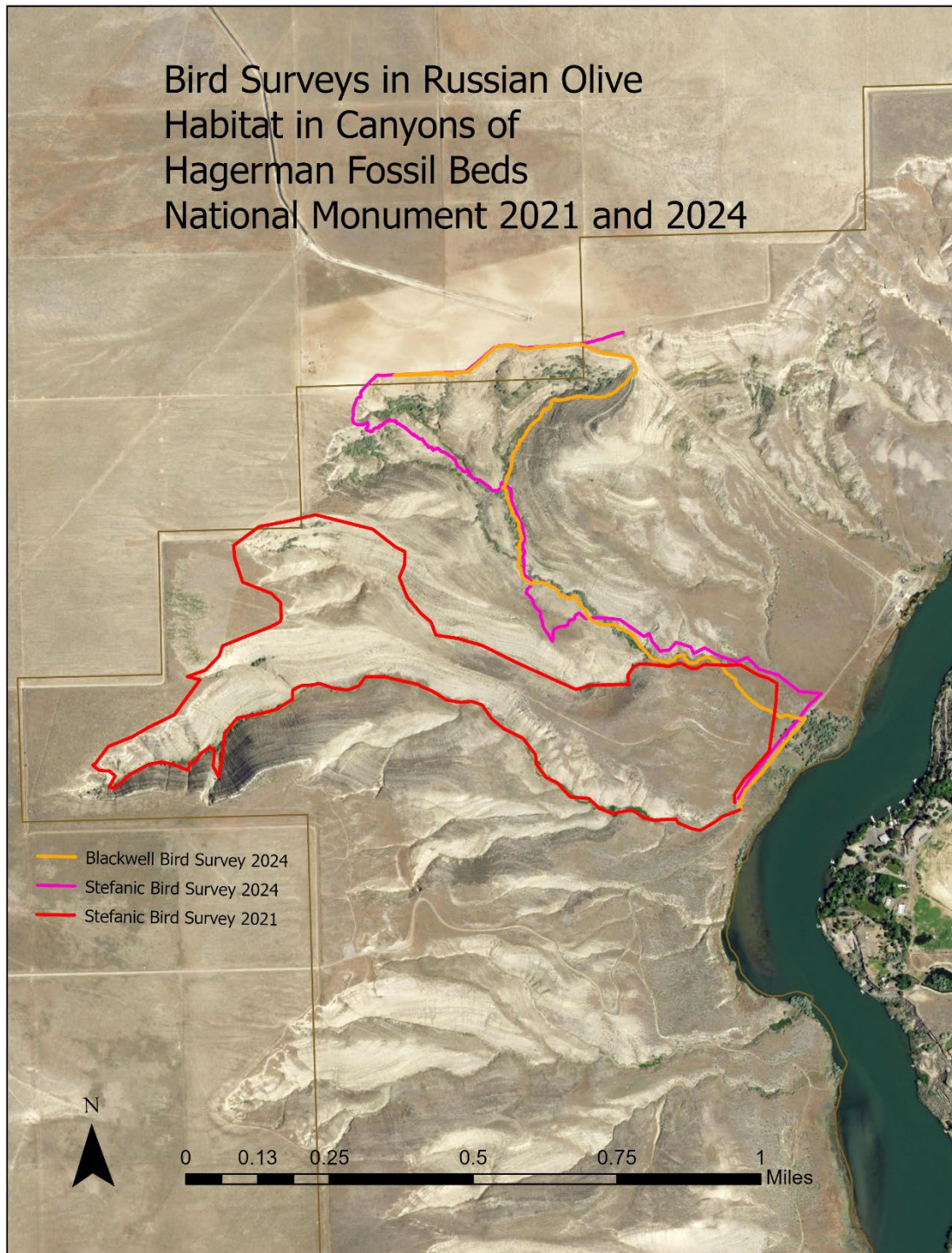


Figure 1. Routes taken in 2021 and 2024 for bird surveys.

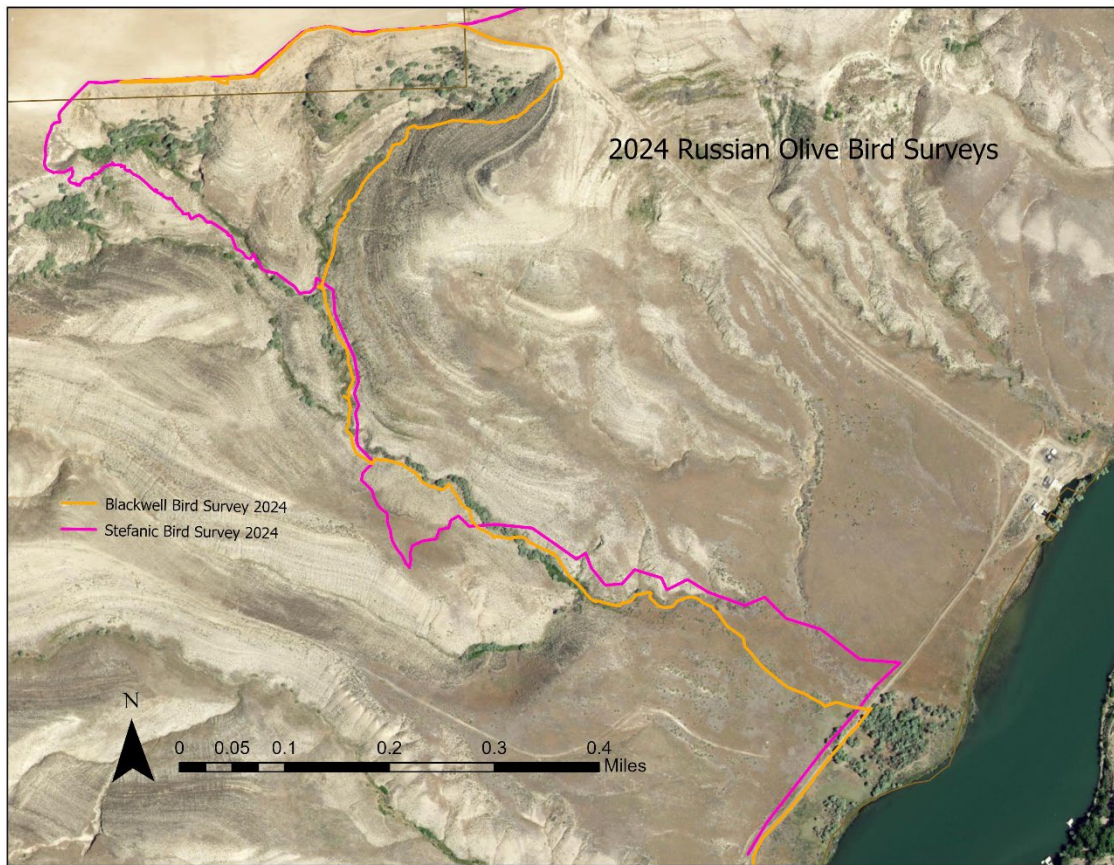


Figure 2. Routes taken by Stefanic and Blackwell during bird surveys in 2024 of Russian olive habitat.

Results

Well over 200 birds and 21 species were detected during the survey. Bullock's orioles, black-billed magpies, California quail, western meadowlarks and mourning doves were abundant. Lark sparrows, and rock wrens were common. A small number of cliff swallows and Brewer's blackbirds were observed flying near the top of the canyon. American robins, ring-necked pheasant, western kingbirds, common ravens, lazuli buntings and chukars were occasionally heard. A single long-billed curlew flew in and perched on the top of a dead Russian Olive at the top of the canyon. One unknown hummingbird buzzed past too fast to identify. A couple of red-tailed hawks were heard and seen soaring overhead during the morning. Dusky flycatchers were heard on several occasions. A pair of bald eagles were seen close to their nest tree (a cottonwood near the shore of the Snake River). Blackwell reported she could see young eagles in the nest. One nighthawk was seen at the top of the canyon.

Effects of Russian Olive Treatments to Bird Species Detected

No Affect: common raven, red-tailed hawk, western meadowlark, cliff swallow, rock wren, long-billed curlew, chukar, common nighthawk, bald eagle, ring-necked pheasant

Of the 21 species detected, 11 had no real relation to the Russian olive. The red-tailed hawks were fly-overs soaring above the canyon. The brewer's blackbird consisted of about half a dozen flying overhead at the rim of the canyon. The few cliff swallows were all catching insects just below the rim of the canyons. The swallows will certainly forage above the Russian olive but the presence or absence of the trees will not determine use of the cliffs for nesting. Western meadowlarks and rock wrens are ground-nesters (Cornel Lab of Ornithology, 2019) and were not seen or heard in amongst the Russian olive. The western meadowlarks were all detected from the adjacent sagebrush and the rock wrens were detected from the rocky slopes. Both species will certainly sing from tree perches but this behavior was not witnessed during this survey and presence of trees is not a limiting factor for these species. Common ravens were only occasionally heard in the distance. The long-billed curlew is a large shorebird that uses the grasslands above the canyon for foraging and the use of the dead Russian olive is seen as simply an advantageous site to stop and perch for a bit. The bald eagles were nesting in a cottonwood near the Snake River, while there is Russian olive all around the nest site it has no importance to this species. Chukars and ring-necked pheasants are introduced species and the presence or absence of Russian olive should have no bearing on their populations. Common nighthawks are a ground-nesting bird of grasslands (Cornel Lab of Ornithology, 2024) so removal of Russian olive will not affect them. Long-billed curlews have been seen foraging in the grasslands at the top of the canyons in the past (Stefanic person observations) but do not use the canyons. They too are ground nesting bird of grasslands (Cornel Lab of Ornithology, 2024) so removing the trees should have no adverse effects. The sight of one stopping for a moment in a dead tree at the top of the canyon is just a momentary use of an advantageous spot to roost.

No Adverse Affect: Brewer's blackbird, lark sparrow, American robin

Brewer's blackbirds were fly-overs only on this survey. They were not seen or heard *in* the Russian olive. This species is a shrub-nester (Cornel Lab of Ornithology, 2019), and while they will perch and sing from trees, removal of Russian olive should not adversely affect the species. Lark sparrows are a grassland/ground nesting species (Cornel Lab of Ornithology, 2019). Male lark sparrows may sing from high perches in the Russian olive but this is just an advantageous use of the best perches in the area. The species is accustomed to existing in treeless habitat. American Robins were only heard near the Snake River and did not seem to have any association with the Russian olive itself.

Positive and Negative Affects: black-billed magpie, dusky flycatcher

Black-billed magpies are a tree-nesting species of open woodlands (Cornel Lab of Ornithology, 2019). Removal of Russian olive may negatively affect this species by removing nesting trees. Magpies would lose this nesting resource if the Russian olives were cut down. However, magpies are known to nest in dead trees so if some Russian olives were girdled and left in place some (less ideal) nesting habitat would remain. Removal of nesting habitat for magpies may positively impact other species in the area as magpies are nest predators. populations have been decreasing approximately 9% per year for a

cumulative decline of about 38% between 1966 to 2019, according to the North American Breeding Bird Survey. They rate a 9 out of 20 on the Continental Concern Score, indicating a species of low conservation concern.. They are fully protected under the Migratory Bird Treaty Act (Cornel Lab of Ornithology, 2024). Dusky flycatcher is a songbird of scrubby streamside thickets so removal of the Russian olive may have adverse effects if native vegetation does not replace the invasive species. However, this species is one of a handful of songbird species that may benefit from habitat disturbance, including certain types of logging (Cornel Lab of Ornithology, 2024). Populations of the species remained roughly stable between 1968 and 2015, according to the North American Breeding Bird Survey. Partners in Flight rates the species an 11 out of 20 on the Continental Concern Score, indicating a species of low conservation concern (Cornel Lab of Ornithology, 2024).

Minor Adverse affect: lazuli bunting, mourning doves, California quail, western kingbird, Bullock's oriole

Lazuli buntings are a species of open woodlands, dry brushy hillsides, thickets and gardens throughout the west. They are a shrub nester (Cornel Lab of Ornithology, 2019). These birds were heard from within the Russian olive and our known to use it as singing perches (Stefanic personal observation, 2021) They are likely nesting in the lower branches of them. Removal of the Russian olive may have a minor adverse effects if an alternative shrubby component does not replace the Russian olive after it's treatment. Lazuli bunting are common throughout the West and their numbers were fairly stable between 1966 and 2015, according to the North American Breeding Bird Survey. The species rates a 9 out of 20 on the Continental Concern Score and is not on the 2016 State of North America's Birds' Watch List (Cornel Lab of Ornithology, 2024).

Mourning doves do nest in trees, but the species is common across the continent and Russian olive and other tree species is not a limiting factor in the surrounding area. Populations of this species have declined by an estimated 0.4% per year from 1966 to 2019 for a cumulative decline of about 20%, according to the North American Breeding Bird Survey. Partners in Flight rates the species 6 out of 20 on the Continental Concern Score, indicating a species of low conservation concern (Cornel Lab of Ornithology, 2024).

California quail are a ground nesting species of scrub habitat, and they will roost in trees (Cornel Lab of Ornithology, 2019). This species was abundant in amongst the Russian olive and was seen roosting in the trees and using them and the associated accumulation of tumble weeds as cover. California quail are considered non-native to Idaho (Idaho Species Catalog, 2021). Populations showed a small increase between 1966 and 2015, according to the North American Breeding Bird Survey. The species rates a 7 out of 20 on the Continental Concern Score, indicating a species of low conservation concern (Cornel Lab of Ornithology, 2024). Removal of the Russian olive may have a minor adverse effect on the quality of cover habitat for this species, especially if an alternative shrubby component does not replace the Russian olive after it's treatment.

Western kingbirds use trees and shrubs for nesting (Cornel Lab of Ornithology, 2019). The scolding behavior witnessed in 2021 was not seen in this canyon. They were not as conspicuous and boisterous as they had been during that 2021 survey. This may be because of the competition for habitat from the Bullock's orioles which were abundant. Removal of the trees would remove a resource that they are using for singing perches and nesting. This would have negative effects on the species in the immediate area especially if an alternative tree/shrub component does not replace the Russian olive after it's treatment. This would cause kingbirds to either seek another area altogether for nesting or to switch to

shrub for nesting. Western kingbirds are however a species of low conservation need. The species is common and overall populations remained stable between 1966 and 2019, according to the North American Breeding Bird Survey. Western Kingbirds seem to benefit from many human activities, and their range has grown since the late 1800s. They rate a 9 out of 20, indicating a species of low conservation concern (Cornell Lab of Ornithology, 2024). In addition, there seems to be ample tree habitat in and around HAFO for kingbirds to utilize.

Bullock's oriole is another tree nesting species (Cornell Lab of Ornithology, 2024) this species was abundant during the survey. Bullock's orioles nest site is typically 10 to 25 feet above the ground in an isolated tree or at the edge of a woodland (Cornell Lab of Ornithology, 2024) so they will gravitate towards the larger Russian olives. Treatment/ removal of the trees would cause the orioles to seek another area altogether for nesting as they are not known to nest in shrubs. Bullock's Orioles are widespread and common, but populations declined by 27% between 1966 and 2019, according to the North American Breeding Bird Survey. They rate an 11 out of 20 on the Continental Concern Score indicating a species of relatively low conservation concern (Cornell Lab of Ornithology, 2024). Russian olive does not seem to be a limiting factor in the surrounding area for Bullock's orioles and there are plenty of other tree species that are probably preferable to the species for nesting.

Unknown Affect

The inability to identify the hummingbird. Makes it difficult to assess the effects. At the time of survey Prince's Plume (*Stanleya pinnata*) was in bloom and hummingbirds are known to use it. Removal of Russian olive would only have positive effects on Prince's Plume and other native flowering resources for hummingbirds.

Recommendation

The positive benefits of removing an invasive species from areas of Hagerman Fossil Beds National Monument (HAFO) is equal to or outweighs any adverse effects to bird species using these habitats. I see no reason why this project could not go forward.

Mitigation Recommendations

Conduct all treatments from September 1 to April 1 to avoid direct affects to nesting species.

Treating the Russian olive it is going to require a lot of work to remove the tumbleweeds which choke the canyon sometimes to a height of 5 feet or more. When this is done workers should take care to look for and identify shrub and/or tree species which may have been present prior to the invasion of Russian olive. Where the Vegetation Biologist deems appropriate native shrubs/ trees should be planted to return the areas to a more natural/historic condition. What appears to be willow (*Salix* sp.) were noted in several locations in 2024 and (if native) this would be a highly preferred alternative to non-native invasive species.

If stump-cut treatments are being done workers may leave in place already dead single stems which may be used as song perches for various species of birds. More complex dead standing trees should be

cut down (or cut down to leave single stems here and there) as complex dead standing trees would tend to favor a single species of nest predator (black-billed magpies) which will nest in dead trees.

References

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