

Bird Use of Russian Olive (*Elaeagnus angustifolia*) in Two Canyons at Hagerman Fossil Beds in Mid-May 2021

Todd Stefanic - May 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 at HAFO. 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.

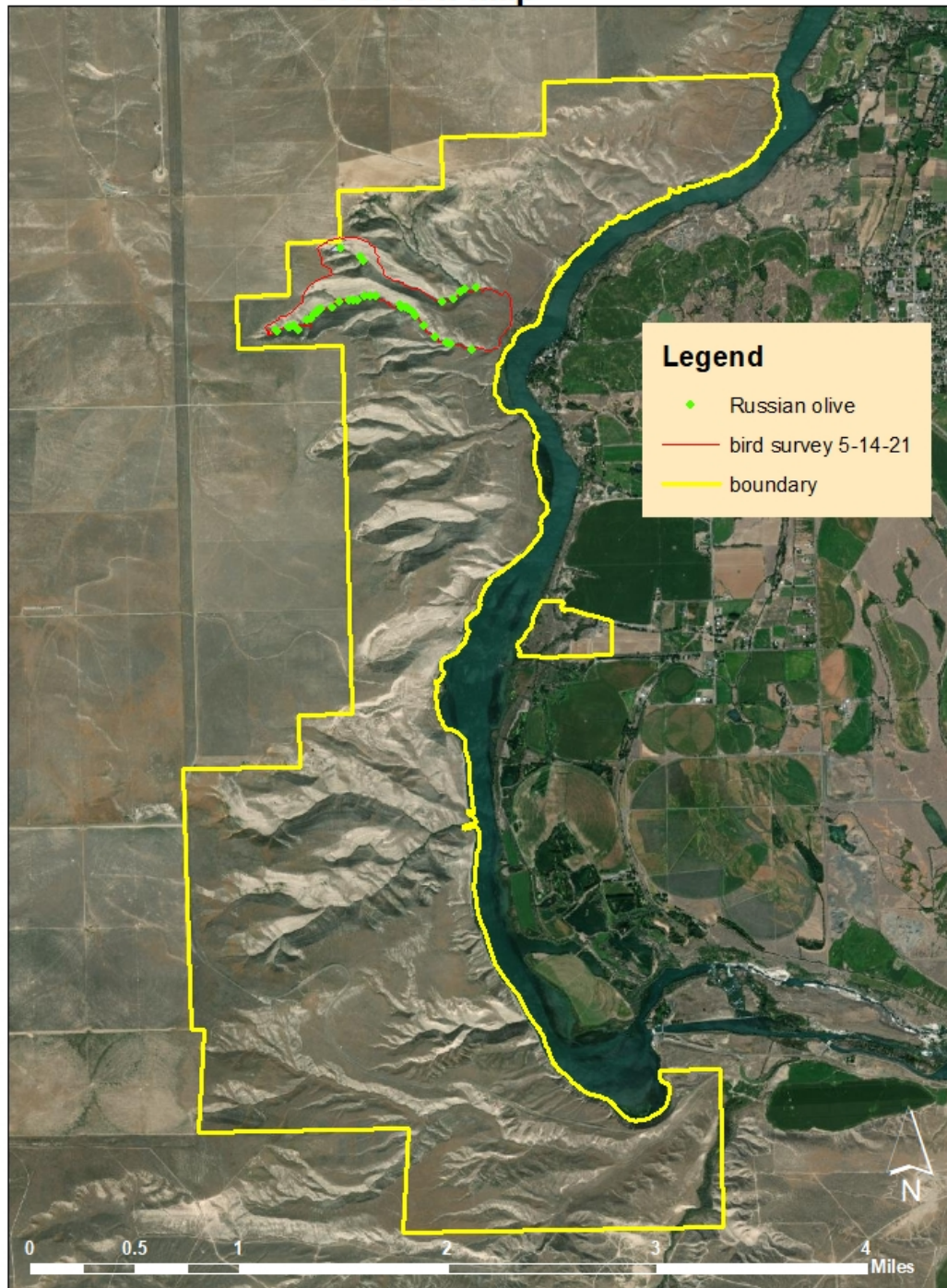
The Southern Idaho Parks Vegetation Biologist Gilbert Moreno has proposed a project to treat this invasive species. Treatments being considered include chainsaw cut-stump treatments and/or girdling of trees. These treatments would be aimed at returning the canyons and their riparian areas to a more historic 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.

Many species of birds will use Russian olive for nesting, cover and/or singing perches. This survey was undertaken in order to see what species 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.

Methods

I arrived on the morning (8:00 am) of May 14 and parked at the bottom of my main target canyon (as provided by G. Merono) near the Snake River. I hiked this canyon all the way to the top often stopping to scan the area with binoculars and to listening for singing birds. I crested out at the top of the canyon moved north across the Fossil Fire scar and scanned the next canyon from above working my way down the ridge top until the slopes were safe enough for me to drop into the canyon. I then worked my way back to the car near the Snake River through this canyon (See Fig. 1).

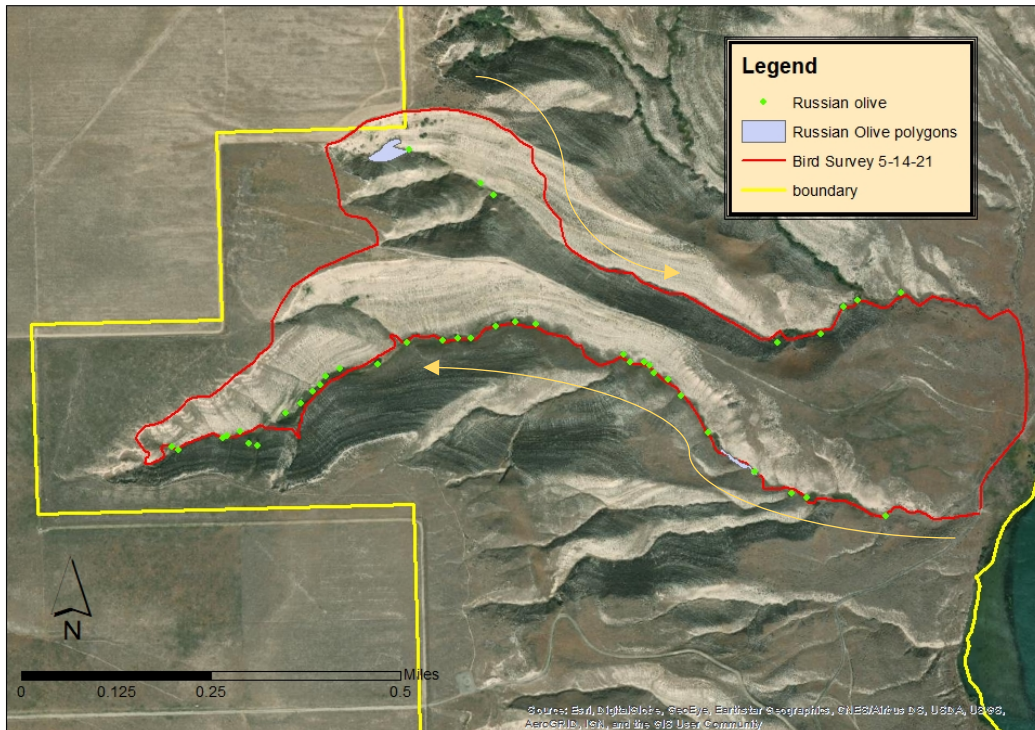
HAFO Bird Survey 5/14/21 Overview Map



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Stefanic Date: 5/20/2021

HAFO Bird Survey 5-14-21



Results

In total 204 birds were detected in 12 species during the survey. The bulk of these were detected on the way up the southern of the two canyons. This canyon had more Russian olive, more water and generally more cover habitat for wildlife. Only 15 birds and six species were detected in the northern canyon.

Species detected included California quail (18), western kingbird (17), western meadowlark (15), black-billed magpie (14), rock wren (10), common raven (9), lark sparrow (9), Bullock's oriole (8), Lazuli bunting (3), Swainson's hawk (1), Brewer's blackbird (1) and cliff swallows (estimated at 100). In addition, 5 magpie nests were noted, none of them seemed to be currently occupied.

Effects of Russian Olive Treatments to Bird Species Detected

No Affect

Of the 12 species detected, 5 had no real relation to the Russian olive. Common ravens and the Swainson's hawk were fly-overs high above the canyon. The cliff swallows were all concentrated in swarming flocks coming and going from the many holes in the cliff just below the rim. 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.

No Adverse Affect

Brewer's blackbirds are a shrub-nester (Cornel Lab of Ornithology, 2019) and were only seen along the Snake River. They will perch and sing from trees but 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 were seen singing 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.

Positive and Negative Affects

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. Five magpie nests were seen in the Russian olives during the survey. Magpies would lose this nesting resource if Russian olives are cut down. Magpies are known to nest in dead trees so if the Russian olives were girdled but left in place some (less ideal) nesting habitat would remain. Removal of nesting habitat for Magpies however, may positively impact other species in the area as magpies are nest predators. Populations of this species have been decreasing every year from 1966 to 2014, particularly on prairies, resulting in a cumulative decline by about 26%, according to the North American Breeding Bird Survey. They rate a 7 out of 20 on the Continental Concern Score and they are not on the 2014 State of the Birds Watch List. They are fully protected under the Migratory Bird Treaty Act (Cornel Lab of Ornithology, 2019).

Minor Adverse affect

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 seen using the Russian olive as singing perches and they are likely nesting in the lower branches of them. Removal of the Russian olive may have a minor adverse affects *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, 2019).

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 an 8 out of 20 on the Continental Concern Score. California Quail are not on the 2016 State of North America's Birds Watch List (Cornel Lab of Ornithology, 2019). Removal of the Russian olive may have a

minor adverse affect 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) and their scolding behavior toward me made it likely that they did have nests in the Russian olives (though I never saw one). They were conspicuous and boisterous throughout the survey anywhere there was live Russian olives. I did not find them (or any species) in the burnt trees at the top of the canyon from the Fossil Fire (2019). Removal of the trees would remove a resource that they are using for singing perches and nesting. This would have negative affects 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 2014, 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 on the Continental Concern Score and are not on the 2014 State of the Birds Watch List (Cornel Lab of Ornithology, 2019). 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 (Cornel Lab of Ornithology, 2019) that was fairly common during the survey especially at lower elevations closer to the Snake River. I did not witness the aggressive territorial behavior I did with kingbirds nor did I see a nest of this species. 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 (Cornel Lab of Ornithology, 2019) 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 Oriole are widespread and common, but populations declined by 29% between 1966 and 2014, according to the North American Breeding Bird Survey. They rate an 11 out of 20 on the Continental Concern Score and are not on the 2014 State of the Birds Watch List (Cornel Lab of Ornithology, 2019). 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.

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.

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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