



# R & E Grant Application 21-23 Biennium

Project #: 21-008

## *Iron Head Habitat Enhancement*

### *Project Information*

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**Requested Cycle:** 21-1  
**R&E Project Request:** \$40,000  
**Other Funding:** \$56,084  
**Total Project:** \$96,084  
**Spending Start Date:** 7/1/2021  
**Spending End Date:** 6/30/2023  
**Project Start Date:** 7/1/2019  
**Project End Date:** 10/31/2029  
**Organization:** Curry Watersheds Nonprofit (Tax ID #: 33-1118832)

### *Fiscal Officer*

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**Name:** Liesl Coleman  
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Gold Beach, OR 97444  
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### *Applicant Information*

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**Name:** Matt Swanson  
**Address:** P.O. Box 666  
94181 4th St  
Gold Beach, OR 97444  
**Telephone:** 541-247-2755  
**Telephone 2:** --  
**Fax:** 541-247-0408  
**Email:** matt.swanson@currywatersheds.org

### *Past Recommended or Completed Projects*

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This applicant has no previous projects that match criteria.

### *Authorized Agent*

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**Name:** Matt Swanson

**Address:** P.O. Box 666  
Gold Beach, OR 97444  
**Telephone:** 541-247-2755  
**Telephone 2:** --  
**Fax:** 541-247-0408  
**Email:** matt.swanson@currywatersheds.org

## **Location Information**

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### **Where is it?**

The project will occur on public land owned or managed by another party

### **Landowner Information**

**Name:** Oregon Department of Fish and Wildlife  
**Affiliation:** State of Oregon  
**Address:** 4034 Fairview Industrial Drive SE  
Salem, OR, 97302-1142  
**Phone:** 5039476138  
**Fax:** 5039476156  
**Email:** Patty.L.Whalen@state.or.us

### **Site Description**

*Street Address, nearest intersection, or other descriptive location.*

ODFW's 16.68-acre Iron Head property is located 0.7 river miles upstream of Highway 101 on the Elk River.

*Directions to the site from the nearest highway junction.*

From the town of Port Orford, proceed 2.25 miles north on Highway 101 to Elk River Road. Turn right (to the east) and proceed 0.75 miles upriver to ODFW's boat ramp, parking lot, and river frontage, which are located on the east side of the road and marked with ODFW signs.

*Following project completion, public anglers will be allowed the following level of access to the project site:*

Full access

*Please describe what leases, easements, agreements are in place to ensure angler access to the project site, and what is the length of each agreement.*

Iron Head is a 16.68-acre property that is owned and managed by ODFW. The Elk River runs through the middle of the parcel. On the left side of the river (looking downstream), ODFW maintains a parking lot and boat launch off of the county road that provide anglers year-round access for boating, and ~1,700 feet of river frontage for bank fishing.

*Dominant Land Use Type:*

ODFW manages the site for angler access, and as such, ~1 acre has been developed into a parking lot and boat launch. The remaining acreage is mainstem river channel, and ~12 acres of riparian habitat that have never been managed by the Department, and are predominately covered in invasive weeds.

### **Project Location**

*General Project Location.*

**County:** Curry County  
**Town/City:** Port Orford  
**ODFW Dist:** South Coast  
**Stream/Lake/Estuary Name:** Elk River

**Sub-basin:** Sixes - 17100306  
**Tributary of:** Pacific Ocean

*Specific Project Location.*

| Latitude | Longitude |
|----------|-----------|
| 42.7860  | -124.4800 |

## ***Project Summary***

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### *Project Summary*

*Please provide a couple sentence summary of the proposal.*

ODFW's 16.68-acre Iron Head property is dominated by invasive weeds that impact angler access and fish and wildlife habitat. This project will convert the property into native trees and shrubs that improve angler access, enhance instream and riparian habitat, and reduce the threat of catastrophic wildfire.

### *Overall Project Goals*

*Describe the primary goals or outcomes of the entire project, including elements not requesting funding from R&E.*

To eradicate gorse and English ivy, and suppress reed canary grass, Himalayan blackberry, and other non-native invasive weeds that impede the establishment of native riparian forest on 28 acres of the Elk River floodplain; including ODFW's Iron Head property. Eradicating gorse will also reduce the risk of wildfire.

To establish 28 acres of native riparian forest on the Elk River floodplain that improve water quality (shading, filtration, etc.); enhance fish habitat (instream wood, undercut banks, off-channel rearing, etc.); enhance wildlife habitat (nesting and denning, migration, feeding, etc.); and improve the morphology of the river channel.

### *Primary objectives of R&E funding*

*Please describe the measurable objectives for the R&E portion of the funding request.*

Eradicate gorse and English ivy, and suppress 80% of other invasive weeds, on ODFW's 12 acres of riparian habitat (excludes the river channel and parking lot); to improve access for bank fishing and prepare the site for planting.

Plant an average of 600 native trees and shrubs per acre on ODFW's 12 acres of riparian habitat, to establish native riparian forest. Plantings will be maintained for the duration of the grant, so they become free-to-grow.

Construct ~600 feet of fence to exclude livestock from ODFW's property. Currently livestock are blocked by mature gorse, but once that gorse is cleared, they will have access to the property from an upstream ranch.

### *Current Situation/Justification*

*Please describe the current situation and explain why this funding is needed.*

In December 2018, the Curry Soil and Water Conservation District (SWCD) received funding from the Wild Salmon Center (WSC) to restore fisheries habitat at Iron Head and eight other project sites in the lower Elk River watershed, which were prioritized in the 2018 Elk River Strategic Action Plan for Coho Recovery (SAP). In November 2019, the SWCD signed a 10-year

Memorandum of Agreement with ODFW (Salem), to establish native riparian forest and enhance fisheries habitat on the Iron Head property. In spring 2020, SWCD contractors mowed ~7.1 acres of gorse, and selectively cleared ~4 acres of invasives from mixed stands of desirable vegetation; and then sprayed the invasive regrowth in October. Clearing and spraying was a necessary, and substantial first step, but it will take 10 or more years to convert the site into native riparian forest; especially since gorse is widespread on the property. R&E funding is needed to suppress regrowth and treat additional acres of invasive weeds; to construct fencing that excludes livestock, which will gain access to the property when the remaining gorse is removed; to plant the property with native trees and shrubs; and to maintain those plantings so they become free-to-grow.

### Recreation and Commercial Benefit

*This project will provide benefits to:*

- Recreational fisheries
- Commercial fisheries

*Explain how this project will contribute to current (and/or potential) fishing opportunities, access, or fisheries management.*

Iron Head includes ~1,700 feet of mainstem channel and ~11.5 acres of active floodplain that provide rearing habitat for Chinook and coho salmon, steelhead, and other native species. Restoring native riparian forest at Iron Head was listed as a priority in the Elk River SAP because doing so will improve water quality and enhance off-channel winter rearing habitat, which is the primary limiting factor to coho in the Elk River watershed. The restoration of Iron Head is part of a larger project to restore 2.6 miles of contiguous mainstem channel and ~100 acres of riparian and backwater habitat. Restoration of this habitat should increase salmonid production, which will benefit Port Orford's commercial fleet that target the Elk River Chinook, and the River's robust freshwater recreational fishery that draws anglers from western Oregon and northern California. Clearing gorse and other invasive weeds at Iron Head will also make it easier for bank anglers to access the property's 1,700 feet (~9 acres) of mainstem channel, which is a significant benefit because public access for bank fishing is severely limited in the lower river.

*Percent benefit split between Commercial and Recreational anglers:*

- 20 % Commercial
- 80 % Recreational

*Please explain, or justify, how the percentage split was determined:*

The Elk River's freshwater recreational Chinook and steelhead fisheries attract 1000's of anglers annually from western Oregon, northern California, and beyond; which results in substantial economic activity for the southern Oregon coastal communities of Port Orford and Langlois. The Elk River's contribution to the Chinook ocean fishery is relatively small, but in some years, it produces a profitable "bubble" fishery that is of particular importance to Port Orford's commercial fleet. The split between Recreational and Commercial benefits is based on our perception of angler participation and the economic activity that results from these fisheries, but we were unable to find data to support that split.

*This project has been identified as an ODFW priority for:*

- Local/watershed
- Basin/regional

*Does this project directly support implementation of the ODFW Strategic Plan and/or current Fish*

*Division priorities?*

Yes

The highest priority conservation goals in the Coastal Multi-Species CMP were to address limiting factors to non-viable populations, including Elk River Fall Chinook. The CMP does not identify Iron Head specifically, but it prioritizes this type of habitat restoration, and acknowledges the importance of the Elk River SAP.

*Please briefly explain when this was identified as a priority and what process or workgroup was used to identified this as an ODFW priority.*

The above statement is based on the CMP's 2014-2019 Implementation Report, which was produced by ODFW staff. The CMP was adopted by the Oregon Fish and Wildlife Commission in June 2014.

*Identify any plan or other document that identifies this priority.*

The Elk River SAP (found at [www.currywatersheds.org](http://www.currywatersheds.org)) prioritizes instream habitat (Goal 3) and water quality (Goal 4) improvements within the mainstem reach that includes Iron Head.

NOAA's SONC Coho Recovery Plan concluded that deficiencies in the amount of suitable, juvenile rearing habitat are the most important factors limiting Elk River coho salmon recovery.

*Is this project part of an approved Salmon-Trout Enhancement Program (STEP) activity?*

No

*This project is intended to benefit the following species:*

Fall Chinook Salmon  
Other Species  
Terrestrial wildlife and migratory birds.  
Coho Salmon  
Winter Steelhead  
Cutthroat Trout

*This project will benefit anglers or fishery by providing:*

Angler Access  
Habitat Enhancements

Angler Access

*This project will:*

Improve access to existing angling opportunities

*Choose the following that best describes the angling access provided by the project:*

Bank

*Do similar access sites, facilities, or fisheries exist within 10 miles of the project site?*

Yes

Bank anglers can access the Elk River at four public locations within the lower river. These include the mouth (RM 0 to RM 1.8) of the river from Cape Blanco State Park; the Highway 101 easement at the Elk River bridge (RM 4.6); Iron Head (RM 5.4); and ODFW's hatchery property (RM 14.1). Iron Head is strategic because it is located near the mid-point of the lower river, which offers a more varied angling season than either the mouth or the hatchery; and Iron Head is significantly easier to access than the mouth or the Highway 101 bridge easement.

Habitat Enhancements

*The primary purpose of this project is to improve/increase:*

In water structure, complexity, and habitat  
Water quality  
Planting or vegetation management

## ***Project Description***

### ***Schedule***

| Activity  | Date                   | RE Funding |
|---|------------------------|------------|
| Interplant ~4 acres of riparian/backwater habitat with native trees and shrubs to augment existing desirable species that were that was cleared of invasives in 2020. | February 2021          | No         |
| Spray gorse and English ivy to kill regrowth and new seedlings.   | April-June 2021        | No         |
| Release plantings from competing vegetation.  | April-August 2021      | Yes        |
| Clear additional Himalayan blackberry to prepare for fall herbicide treatment.  | July-August 2021       | Yes        |
| Clear and spray ~1 acre of reed canary grass to prepare the site for interplanting. July – August 2021.   | July-August 2021       | Yes        |
| Mow additional gorse (~1 acre) to prepare the site for spraying in spring 2022.   | Sept.-October 2021     | Yes        |
| Construct 600 feet of fencing to exclude livestock following the removal of additional gorse.   | Sept.-October 2021     | Yes        |
| Spray Himalayan blackberry.   | October 2021           | Yes        |
| Plant ~8 acres of riparian/backwater habitat with ~600 stems/acre.  | Jan.-February 2022     | Yes        |
| Spray gorse and English ivy to kill regrowth and new seedlings.   | April-June 2022        | Yes        |
| Release plantings from competing vegetation.  | April-August 2022      | Yes        |
| Clear Himalayan blackberry as needed to prepare for fall spraying.  | July-August 2022       | Yes        |
| Clear and spray reed canary grass as needed.  | July-August 2022       | Yes        |
| Spray Himalayan blackberry as needed.   | October 2022           | Yes        |
| Interplant 12 acres of riparian habitat to maintain desirable species diversity and density.  | Jan.-February 2023     | Yes        |
| Spray gorse and English ivy to kill regrowth and new seedlings.   | April-June 2023        | Yes        |
| Release plantings from competing vegetation.  | April-August 2023      | Yes        |
| Continue to manage invasive weeds, and interplant with native riparian species, until the site is adequately stocked with free-to-grow native trees and shrubs.       | July 2023-October 2029 | No         |

### ***Permits***

| Permit  | Secured? | Date Expected |
|---|----------|---------------|
| NOAA Biological Opinion clearance for Native Vegetation Restoration and Management.   | Yes      |               |
| Although cultural resource clearance is not required at the site, we did hire an archaeologist to conduct research and tribal consultation. No further investigation was recommended. | No       | N/A           |

### ***Project Design and Description***

*Please describe in detail the methods or approach that will be used to achieve the project objectives.*

Converting Iron Head from invasive weeds to native riparian forest will require the following management actions.

(1) Invasive Weed Suppression and Eradication: Iron Head is typical of most riparian restoration sites on the southern Oregon coast in that there are multiple species of invasive weeds that prohibit or slow the natural recolonization of invasive plants, shrubs, and trees. To facilitate natural recolonization and/or the planting of native seedlings, invasive weeds must be cleared and retreated to minimize competition for sunlight, nutrients, water, etc. When multiple species of invasive weeds are present, each species must be managed specifically according to its physiology, reproductive strategies, and other behaviors. Some treatments may apply to more than one species, but often individual treatments are necessary to have the optimal effect on each species.

At Iron Head, gorse (*Ulex europaeus*) is the most difficult species to manage because it forms spiny, dense, impenetrable thickets that are 15-20 feet in height; and gorse seeds can remain viable for 50-80 years in the soil. Gorse is also a highly flammable plant with a high content of volatile oils, which creates an extreme fire risk at a site like Iron Head, and effects when it can

be safely mowed or cut. The most effective and least harmful way to treat gorse is to mow or cut mature plants, and then spray the regrowth and new seedlings when they are 18-24 inches in height. The optimal timing is to cut gorse in the fall, and spray in the spring, but it can also be cut in the spring and sprayed in the fall, with good success. At mature sites, gorse should be managed for 2-3 years before the site is planted, to allow enough time to kill resprouts and high percentage of new seedlings. Individual plants and small outliers can be killed using either a basal or cut-stem application of herbicide. At Iron Head, most of the mature gorse was mowed with an excavator in the spring of 2020, and then sprayed in the fall. We will respray these sites in the spring, and possibly in the fall, of 2022; at which point we will plant the sites if the kill rate is sufficient. New seedlings and stump resprouts will continue to be sprayed until the plantings are free-to-grow (~2029).

Himalayan blackberry (*Rubus armeniacus*) is also widespread at Iron Head, but unlike gorse, it is relatively easy to suppress when managed correctly. The optimal treatment is to cut established blackberry canes in mid-summer with machinery or hand tools (weed trimmer, chainsaw), and then spray before a heavy frost in the fall, when the regrowth is 12-24 inches tall. This ensures there is adequate vegetation to absorb and translocate the herbicide down into the root network, while minimizing the amount of chemical and labor needed to fully cover the plant. At Iron Head, most of the Himalayan blackberry was mowed or cut in the summer of 2020, and then sprayed that October. Going forward, we will clear and treat any remaining blackberry, and then retreat the regrowth and new seedlings until the plantings are free-to-grow.

English ivy (*Hedera helix*) is not widespread at Iron Head, but given the fact that it will persist and flourish in a shaded environment, the establishment of free-to-grow seedlings is not a long-term control like it is with other invasive weeds. For that reason, our goal is to completely eradicate English ivy from the property, using a combination of manual, mechanical, and chemical treatments. Mature ivy has a waxy leaf (cuticle) that inhibits the absorption of herbicide, so a penetrating oil is often used in the mix, or the ivy is mulched and herbicide is applied to the new, supple regrowth. When ivy climbs vertically it produces seeds that are dispersed by birds, wind, etc., and it can overwhelm and topple host trees and shrubs; so our first action is typically to cut ivy off the base of trees and shrubs, and then treat the cut ends with herbicide. For small, open sites, ivy can be cost-effectively and reliably eradicated by pulling the vines by hand. For larger sites that are more mature, the ground cover is usually mulched at least once to break up the vine mats, before being spraying. In 2020 we cleared and mulched the ivy sites with weed trimmers, so it could be effectively sprayed in the spring of 2021. Although English ivy is not widespread at Iron Head, we anticipate it will take ~10 years to fully eradicate it from the property.

Reed canary grass (*Phalaris arundinacea*) covers ~1 acre of contiguous habitat at Iron Head, but it is also scattered throughout the property in smaller infestations. Reed canary grass (RDG) is a concern at Iron Head for two reasons: (I) It outcompetes and/or smothers young plantings, and it provides cover for voles that, in turn, chew and girdle the seedlings; and (II) The contiguous site runs along an overflow channel that should provide complex morphology, but the RDG dampens the hydraulic forces that would scour complex morphology, and it causes fine sediment to deposit in the channel. RDG responds well to herbicides when applied correctly, and in time, it will weaken and die out as we establish desirable woody vegetation that shades the site. In 2021 we will mulch the RDG with weed trimmers, and then immediately spray the site with herbicide. This should provide sufficient suppression to then plant the site in 2022, with

ongoing follow up treatments through 2029 to ensure the planting become free-to-grow.

Spraying will be done by professional applicators that are licensed in the State of Oregon, using herbicides that have been approved by the National Oceanic and Atmospheric Administration (NOAA) for use in riparian zones. We maximize the efficacy of our treatments by tailoring the timing, technique, and herbicide formula to the unique attributes of each species, which typically yields high mortality rates while also minimizing the amount herbicide that is applied. As described above, this often requires invasives to be manually or mechanically cleared first to reduce the volume of biomass that is treated, and then to allow adequate regrowth at the right time of year so the herbicide can be effectively absorbed and translocated down into the root network. When individualized treatments are not used, and/or the site is not cleared in advance, excess herbicide is usually required for an effective kill, and/or the chemical fails to translocate into the root network, which results in the “burning off” of the vegetation without the benefit of killing the plant.

(2) Tree and Shrub Planting: The existing vegetative cover at Iron Head can be broken down as follows: 60% of the ground is predominately invasive weeds (gorse, Himalayan blackberry, RDG); 30% is invasive weeds intermingled with low densities of desirable trees and shrubs; and 10% of the ground is in desirable trees and shrubs that are self-sustaining. As described above, approximately 70% of the invasives were cleared and sprayed in 2020; the remaining 30% will be cleared in 2021; and all invasives will be managed manually and/or with herbicides for the foreseeable future. Theoretically, this level of management would allow native trees and shrubs to recolonize the site naturally (passive restoration), and the site would then evolve into a native riparian forest of varying seral stages that provides complex instream and off-channel rearing habitat for fish; shades the channel and filters pollutants; and creates nesting and denning habitat, migration corridors, and food sources for terrestrial wildlife, migratory song birds, etc. Taking a “passive” approach would save in plant establishment costs, but it would require a longer timeline to stock the site with free-to-grow trees and shrubs than “active” plant establishment, which in turn would require invasive weed management to continue for decades; the site would also take 100’s of years, rather than 60-100 years, to reach full functionality.

Over the years we’ve considered the merits of passive riparian restoration, but we’ve concluded that riparian habitat is too critical to salmonids, wildlife, and watershed health; and already too limited spatially and too compromised functionally; to not actively establish and expedite the development of riparian forests where those opportunities exist. We’ve also concluded that passive restoration yields less reliable results, and is often more expensive when the cost of invasive weed management is taken into account. Iron Head is a site with extensive potential to restore native riparian forest, given the size and morphology of the property; and it is part of a larger restoration project in the lower mainstem that will transform ~2.6 miles of Elk River into moderately complex instream habitat, and create or enhance critical coho off-channel winter rearing habitat within ~100 acres of riparian and backwater reserve. With that said, we have decided to pursue active restoration at the site.

To reestablish native riparian forest at Iron Head, we will plant the site with an average of 600 stems per acre; using 5 species of coniferous trees, 5 species of hardwood trees, and up to 15 species of shrubs. Most plants will be sourced from commercial nurseries as bare root stock, and planted with conventional hand tools (hoedad, shovel). Per acre density will take into account existing desirables, so for example, some acres may be planted with 200-300 stems,

and some with 800-900 stems. Our end goal is to reach a density of 800-1000 stems per acre of free-to-grow trees and shrubs, when taking all woody stems into account (existing and planted). This goal is 2-3 times higher than what is typical for upland reforestation because (1) we are establishing both the overstory and understory, (2) we are relying on the development of dense, contiguous shade to suppress and eradicate multiple species of invasive weeds, and (3) long-term attrition is often higher in riparian zones due to flooding, changes in soil saturation, beaver predation, etc. To achieve the end goal of 800-1000 stems per acre, we anticipate interplanting the site in the first 2-3 years, to account for mortality that is often driven by the nuances of micro-sites that aren't readily apparent until the site is planted; such as droughty or saturated soils, excessive vole predation, extreme wind desiccation, etc. Aggressively planting and interplanting at the start of the project will accelerate the establishment of free-to-grow trees and shrubs, which reduces the cost of maintenance over the long-term.

(3) Plant Protection and Maintenance: For high survival and rapid growth, some level of protection and maintenance is usually warranted. At Iron Head, competition from invasive weeds is the primary limiting factor, but deer browse, vole and beaver predation, and livestock grazing also present risks. To protect and maintain the site, the following actions will be taken:

All plantings will be staked with fiberglass rods measuring 3/8" diameter by 6 ft in height. Staking ensures the seedlings will be visible when competing vegetation is cleared or sprayed, which reduces mortality and the time it takes to find and release the plantings. Stakes make it easier to see where interplanting is needed, and they facilitate the installation of protective mesh tubes (see below). Fiberglass rods are relatively expensive, but they have a useful life of 15 years or more, which means they can be redeployed at the site, or used at future sites. Over the years we've tried alternative products, such as bamboo stakes, but they do not last long enough on the coast to be effective, which ultimately leads to inefficiencies and increased costs.

Plastic mesh (vexar) tubes are installed around most new plantings to protect the seedlings from browse, beaver predation, and wind damage/desiccation. The fiberglass rods are woven through the tubes to hold them in place. They are biodegradable in sunlight, and usually persist for 5-10 years.

As certain tree species, such as cottonwood and western red cedar, establish and become free-to-grow, they become more susceptible to beaver predation, and the mesh tubes become less effective protection. These species are important components of coastal native riparian forests, and once established, each planting represents a significant financial investment. To protect these plantings, we build individual wire cages around the trees using 4 ft tall welded wire fencing. The cages will persist in our coastal environment for ~15 years, which will give the trees enough time to establish substantial girth (and therefore be less susceptible to beaver), and enable the project site to infill with a variety of other species that provide beaver alternative food and dam building material.

At the upstream end of the Iron Head property, mature gorse was left in place to exclude livestock from an upstream ranch. That gorse will be removed in the fall of 2021, and 600 feet of fence will be constructed to prevent livestock from accessing Iron Head and riparian habitat on an adjoining parcel. As a disclaimer, this part of the Elk River watershed is within a "closed livestock district", which means that it is the livestock owner's responsibility to prevent their animals from trespassing onto neighboring properties. With that said, the cost of the fence is

relatively minor, so we've decided that it will be more practical and socially acceptable if we build the fence, since we removed the gorse that had been containing their animals.

Seedlings will be released from competing vegetation one or more times per year, until the plantings are free-to-grow. This will primarily be done in conjunction with the management of invasive weeds species, as described earlier in this application, but in some cases native vegetation (willow) will also be cut back to increase sunlight and/or to provide openings for trees to grow.

### Engineering

*Does the project involve capital improvement, engineering, site grading or other construction?*

No

### Project Management and Maintenance

*What is the life expectancy of R&E funded construction, structures, equipment, supplies, data or fishery?*

R&E funds will be used to plant and establish native trees and shrubs that, in time, become self-sustaining and naturally self-reproducing. As described elsewhere in the application, it will take ~10 years to reach that state where the plantings are free-to-grow, and no longer require maintenance.

*Who is responsible for long term management, maintenance, and oversight of the project beyond what is funded by R&E.*

The Curry Watersheds Partnership (the Nonprofit, SWCD, and watershed councils) manages over 120 miles of riparian reserve on private and State owned lands on the southern Oregon coast. In this role, the Partnership seeks grant funds and landowner contributions to convert sites, such as Iron Head, into free-to-grow native riparian forest; and the Partnership revisits these sites periodically to determine if additional management is needed. The Nonprofit and SWCD have secured grants through the WSC and the US Forest Service, which, along with R&E funding, will be used to implement the first three years of management at Iron Head. The SWCD has also applied to the Oregon Department of Forestry for a Landscape Scale Restoration grant, which if awarded, will include funding to manage Iron Head through 2026. In addition, we intend to apply for funding through the National Fish and Wildlife Foundation in late January 2021, using R&E funds to meet the non-federal match requirement. If awarded, this grant will contribute to the management actions proposed in late 2021 and 2022; which is after the WSC grant expires. Beyond these grants, the Partnership will seek other sources of funding to maintain the site until it is free-to-grow (~2029).

*Will the project require ongoing maintenance?*

Yes

See the Project Description for details.

*Is there a plan to collect baseline data and to conduct monitoring efforts to measure the effectiveness of the project?*

Yes

We do not intend to conduct random sample plots, trials, or research to determine the effectiveness of the proposed work, but we will monitor the site throughout the year to determine where and when maintenance and interplanting are needed. In our experience, riparian sites are

often too varied for random sampling to be particularly useful, and ultimately, we need to observe the entire site to inform our ongoing management. With that said, we will specifically observe our herbicide treatments to evaluate their effects; especially the treatment of English ivy, which is less predictable. We will also use photo points, and possibly drone footage, to show how the property changes over time.

## ***Project Funding***

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### ***Funding***

*Have you applied for OWEB funding for this project?*

No

*Has this proposal, or similar proposal for this project location, previously been denied by OWEB or other funding source?*

No

| Other Funding Source   | Type | Secured | Dollar Value | Comments   |
|--|------|---------|--------------|--|
| Wild Salmon Center (NOAA subgrant) for Iron Head Enhancement               | Cash | Secured | 15803        | This amount represents the remainder of this grant, which expires December 31, 2021.                     |
| US Forest Service Title II RAC Grant for riparian restoration in Elk River | Cash | Secured | 10281        | This amount represents the funding from this grant that will be spent at Iron Head by December 31, 2023. |
| National Fish and Wildlife Foundation Five Star Grant Program              | Cash | Pending | 30000        | We will apply for this grant in January 2021; using R&E funds as a source of non-federal match.          |
|  |      | Total   | 56084        |  |

## Budget

| Item  | Unit Number | Unit Cost    | In-kind or non-cash contributions | Funding from other sources | R&E Funds | Total Costs |
|---|-------------|--------------|-----------------------------------|----------------------------|-----------|-------------|
| PROJECT MANAGEMENT                                    |             |              |                                   |                            |           |             |
| Matt Swanson - Swanson Ecological Services, LLC (hrs) | 240         | 46.00        | 0                                 | 9040                       | 2000      | 11040       |
|   |             | SUBTOTAL     | 0                                 | 9040                       | 2000      | 11040       |
| IN-HOUSE PERSONNEL                                    |             |              |                                   |                            |           |             |
|   |             |              | 0                                 | 0                          | 0         | 0           |
|   |             | SUBTOTAL     | 0                                 | 0                          | 0         | 0           |
| CONTRACTED SERVICES                                   |             |              |                                   |                            |           |             |
| Tree Planting Labor (hrs)                             | 470         | 30.00        | 0                                 | 8100                       | 6000      | 14100       |
| Plant Establishment Labor (hrs)                       | 600         | 30.00        | 0                                 | 8600                       | 9400      | 18000       |
| Herbicide Applicator (hrs)                            | 220         | 50.00        | 0                                 | 5000                       | 6000      | 11000       |
| Heavy Equipment (hrs)                                 | 20          | 150.00       | 0                                 | 1500                       | 1500      | 3000        |
|   |             | SUBTOTAL     | 0                                 | 23200                      | 22900     | 46100       |
| TRAVEL  |             |              |                                   |                            |           |             |
| Mileage to Iron Head Project Site                     | 3360        | 0.58         | 0                                 | 732                        | 1200      | 1932        |
|   |             | SUBTOTAL     | 0                                 | 732                        | 1200      | 1932        |
| SUPPLIES/MATERIALS                                    |             |              |                                   |                            |           |             |
| Seedlings (each)                                      | 9360        | 0.95         | 0                                 | 4892                       | 4000      | 8892        |
| Protective Mesh Tubes (each)                          | 9360        | 0.60         | 0                                 | 3116                       | 2500      | 5616        |
| Fiberglass Rods (each)                                | 7200        | 1.32         | 0                                 | 6004                       | 3500      | 9504        |
| Wire Caging (rolls)                                   | 19          | 90.00        | 0                                 | 1110                       | 600       | 1710        |
| Livestock Fencing (feet)                              | 600         | 2.60         | 0                                 | 760                        | 800       | 1560        |
|   |             | SUBTOTAL     | 0                                 | 15882                      | 11400     | 27282       |
| EDUCATION/OUTREACH                                    |             |              |                                   |                            |           |             |
|   |             |              | 0                                 | 0                          | 0         | 0           |
|   |             | SUBTOTAL     | 0                                 | 0                          | 0         | 0           |
| EQUIPMENT   |             |              |                                   |                            |           |             |
|   |             |              | 0                                 | 0                          | 0         | 0           |
|   |             | SUBTOTAL     | 0                                 | 0                          | 0         | 0           |
| FISCAL ADMINISTRATION                                 |             |              |                                   |                            |           |             |
| Curry Watersheds Nonprofit                            | 1           | 9730.00      | 0                                 | 7230                       | 2500      | 9730        |
|   |             | SUBTOTAL     | 0                                 | 7230                       | 2500      | 9730        |
|   |             | BUDGET TOTAL | 0                                 | 56084                      | 40000     | 96084       |

## ***Internal Review Results***

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**Review Score:** 1.2 out of 3

(0 = Do Not Fund, 1 = Strengthen Proposal, 2 = Recommend, 3 = Strongly Recommend)

### ***Summary of Review Team Comments***

The review team was supportive of the project as it should improve access for anglers and manage and ODFW angling site, however the benefit to fish species and long-term success were questioned based on the information in the application. There is a need to strengthen the connection to angler benefits. Scores included zero 3s, four 2s, four 1s, and two 0s.

### ***Specific Review Team Comments***

While this may not be the highest priority habitat restoration project for fish, this work will likely improve angler access on an important section of public land. While the application mentions improving angler access, it does not provide many details on how (trails, open up fishing spots, etc.)? How much of this is an upland habitat project vs an angling access project? Given it is really the long-term success of this project that could result in some fish benefits and thus some angler benefits, it would be good to highlight how angler access is improved or benefits from this project to tie it back to angler dollars.

### ***Specific Review Team Questions***

*Floodplain restoration usually requires some ground manipulation. Are there any plans to fill/remove any soils to create suitable off-channel habitat or is the floodplain development going to be "passive"? Are any permits (county riparian) needed for removal of some native vegetation like willows as stated in the application?*

Prior to the removal of gorse and other invasive weeds, which obscured a visual assessment of the ~12 acres of active floodplain habitat opposite the boat launch, we anticipated that log structures and/or topographic recontouring would be necessary to create complex winter rearing habitat for coho salmon and other native species. However, the removal of invasive weeds revealed extensive micro-topography on the floodplain that is associated with riverine overflow and tributary stream channels, which coalesce into a broad backwater slough near the downstream end of the terrace. Recent observations have shown that the micro-topography already provides periodic rearing habitat throughout the wet season, and at bankfull discharge, when rearing habitat is most needed in mainstem, the river backwaters ~40% of the floodplain terrace. Based on these observations, we've concluded that the landform already functions hydrologically to produce extensive winter rearing habitat, and therefore topographic recontouring is not necessary (see additional photos).

The installation of log structures within the micro-topography would increase habitat complexity, but we believe invasive weeds and the lack of native trees and shrubs is a greater limiting factor to the character and quality of that habitat. Specifically, the homogeneous thickets of gorse, Himalayan blackberry, and reed canary grass dampen the hydraulic effects of overland and tributary flow, leading to increased deposition and minimal scour within the micro-topography. Where native woody vegetation exists within the micro-topography, complex morphology has developed, and the vegetation is providing cover, shade, and diverse terrestrial food sources. With that said, we believe the conversion of invasive weeds into native riparian forest will yield a greater ecological return than log structures at this time, and therefore is a higher priority.

No permits are required at the county, state, or federal level to implement the work as proposed; including the conversion of brush, such as willow, into trees and other native brush species.

To appreciate the importance of Iron Head's winter rearing habitat, it is important to understand that the Elk River is part of the coastal Siskiyou Mountains, which produce very different river systems than the coast range geology to the north that most people associate with the Oregon coast. In the Siskiyou's, the rivers are steep and have very limited estuarine habitat. In the Elk, there is essentially no estuarine embayment, and less than ~200 acres of tidally influenced habitat. As a result, much of the winter rearing habitat in the watershed exists in floodplain tributaries, the mainstem channel, and secondary habitat within the river corridor. Iron Head's ~12 acre floodplain terrace accounts for one of the largest, and most intact pieces of secondary habitat within the river corridor, and because it is publicly owned, it represents a unique opportunity to restore fluvial processes that will result in complex winter rearing habitat.

*Maintenance is for ten years, in order to achieve "free-to-grow" plantings. Is it expected that ten years of R&E funding will be necessary?*

We are requesting R&E funding for the two-year period between July 2021 and June 2023, when the most labor intensive and expensive tasks will be implemented; including the ongoing clearing and initial treatment of invasive weeds, and the planting of native riparian seedlings (see project schedule in the application). After this two-year period, management costs will progressively decrease; making it easier to secure adequate funding in the future to maintain the plantings until they become "free-to-grow". Presently, we have funding to manage the site through 2026, and we will continue to apply for grants to augment those monies and extend our management through at least 2029. While it is too early to say who we will apply to, we do not anticipate asking R&E for any funds beyond this request.

*Looks like there is a massive seed bank for Gorse on the right side of the aerial picture. Will you be able to effectively knock this back with establishment of mature vegetation? What will keep the seed banks from repopulating after the 10-year period? Have the proposed methods been shown to provide a successful outcome at other project sites? Have alternatives like goats been considered?*

Gorse is a prolific producer of seeds, which remain viable in the soil for 50-80 years, or longer. As a result, exhausting the seed bank at a site like Iron Head is not a viable strategy for long-term suppression and eradication; but gorse is shade intolerant, so establishing dense overstory shade will prevent seed germination and kill existing plants. To establish overstory shade at Iron Head, gorse and other invasive species need to be intensively managed until the plantings are free-to-grow (~10 years); at which point shade from the plantings will become the primary management tool. The lower Elk River is within a large "core infestation" area where gorse is too prevalent to eradicate, and seed will always be present within the river corridor and uplands (as seen in the aerial photo). Within this "core infestation" our strategy has been to convert gorse into other vegetation types, including riparian forest, livestock pasture, and upland tree farms.

Over the past 15 years we have been successful at a variety of sites, including riparian habitat similar to Iron Head, but that success was dependent on having a practical strategy and the resources to suppress gorse until the new vegetation was free-to-grow. In pastureland, intensive rotational grazing with sheep, and to a lesser extent cattle, is the critical element that sustains the initial conversion. In riparian and upland forests, shade is the critical element. We have used goats to convert gorse to pasture in a manner comparable to sheep and cattle, but in riparian areas goats are neither practical, nor effective, for a number of reasons, including: goat herds

are not readily available; insuring against loss (predation, drowning, etc.) is problematic; fencing goats into a riparian area is difficult and expensive; goats are browsers, not grazers, so they eat both the desirable and undesirable vegetation, including riparian plantings; and goats only suppress growth, so herbicide is still needed to kill established plants. Over the last 20 years we, and our partners, have tried other techniques, such as smothering gorse sprouts with black plastic, bulldozing and burning mature stands, and aerial application of herbicide. In the end, we've concluded that the most efficient and effective way to convert gorse at a site like Iron Head is to the strategy that we've proposed in this application is the most efficient and effective way that we've found to convert a site like Iron Head into native riparian forest.

*What is the status of the various grant applications (OWEB, Wild Rivers Coast Alliance?? When will the applications be submitted and awards outcome known? It also seems like there should be some cost share from the neighbor for the fence, especially if the responsibility lies with them in the first place. Has there been any discussion with the neighbor about this?*

I don't believe we indicated in the proposal that OWEB or the Wild Rivers Coast Alliance would be a source of match, but if we did, I apologize for the confusion – neither are potential sources of funding in the near-term.

In the proposal (Project Funding – page 12) we listed the Wild Salmon Center and the US Forest Service as secured sources of match, and we listed the National Fish and Wildlife Foundation's (NFWF) Five Star grant program as pending. Since submitting this R&E proposal, we also sought or received additional sources of match. The following is the status of other funding sources:

- NFWF Five Star: We submitted an application for ~\$49,000 in January 2021. That proposal is still being reviewed. If funded, ~\$30K will go toward the riparian restoration tasks in this R&E application; the remainder will go to infrastructural improvements at ODFW's public access, and outdoor education field trips with the local school district.
- OR Dept. of Forestry Landscape Scale Restoration: This proposal was recommended for funding, and we anticipate that the grant agreement will be signed in mid-2021. The grant is for \$300,000; to control and convert gorse in the Elk River and Port Orford watersheds. This grant will have a 5-year timeline, and we will use some of these funds to maintain the work at Iron Head through 2026.
- Travel Oregon – Destination Ready: We submitted an application for ~\$29,000 in February 2021, which is still being reviewed. If funded, ~\$6K will go toward riparian restoration and infrastructural improvements at Iron Head. The remaining funds are for outdoor education field trips; volunteer events to pick up trash and remove invasive weed species; and staff time to conduct a visitor assessment in the Elk River recreational corridor, to determine infrastructural needs (i.e., toilets, trash cans, etc.) at public sites (ODFW, USFS).
- OR Dept. of Forestry Partnership and Planning: We were recently awarded ~\$234,000 to suppress and convert gorse in Curry County by the end of this fiscal year (June 30th). We're still deciding where to allocate these funds, but ~\$5-10K is earmarked to manage gorse (spray/mow/cut) at Iron Head.

With regard to the construction of livestock fencing between Iron Head and the upstream ranch, it will be easiest if we build the fence ourselves, and don't rely on the landowner for cash or in-

kind contributions. We have a relationship with the family going back 25 years, but the generation that we worked closely with has since passed away, and the current family members who manage the ranch are not of the same means. We do have a cordial relationship with the current family members, and we'll be in contact with them when the time comes to build the fence, but asking them to contribute is not in the cards. If the R&E Board feels strongly about this, we can remove it from the grant and seek other funds to build the fence.

*Clarify the difference between the proposal (16.68 acres) and the Goal (28 acres). Not sure what the 28 acres represents on Page 4.*

We are managing the 16.68 acre Iron Head site in conjunction with ~11.32 acres of adjacent riparian habitat on private lands (28 acres total). R&E funds will only be used on ODFW's property, but match funds (ODF, NFWF, WSC, USFS) will be used to manage the entire 28 acre project area.

The following text is not specific to this question, but rather is intended to address the Review Team's comments about the project's benefit to anglers:

Conversion of invasive weeds, particularly gorse and Himalayan blackberry, will make it easier for anglers to fish along the ~1,700 feet of river frontage on ODFW's Iron Head property. Prior to the start of our management in 2020, the river frontage opposite the boat ramp was essentially inaccessible from the river bank because of invasive weeds – Himalayan blackberry is difficult to walk through, and gorse is impenetrable. This limited bank fishing to a gravel bar that runs ~50% the length of ODFW's property on the left side of the river (looking downstream). Although we are not proposing to construct trails, the clearing of invasive weeds from the ~12 acre floodplain terrace opposite the boat ramp will enable anglers with a moderate degree of physical mobility to walk freely throughout the site, and the clearing of invasive weeds on river left will make it easier for anglers to move upstream and downstream from the boat ramp.

The project's restoration outcomes will benefit all salmonids native to the Elk River (Chinook, coho, steelhead, and cutthroat), which should translate into increased angling opportunities. With that said, the increased angling opportunities will likely be minor in the near-term because the project is focused on limiting factors to coho, which are a listed species and therefore do not currently have a commercial or recreational fishery. In the broader context, though, the proposed habitat restoration at Iron Head is part of a larger effort to restore 2.6 contiguous miles and ~100 acres of riparian and instream habitat within the lower Elk River mainstem corridor. Collectively, this effort should result in meaningful outcomes for Chinook and steelhead, which are the dominant fisheries in the watershed.

Beyond the scope of this R&E proposal, we are working with ODFW's Gold Beach staff to make infrastructural improvements at Iron Head that will benefit anglers, and the public in general. Specifically, we will install a gate at the entrance to the Iron Head parking lot, and boulders along the shoulder of the county road to prevent vehicles from outflanking the gate. This will enable ODFW to limit nighttime access, which will reduce nefarious activities such as illegal dumping, vandalism, vagrancy, drug use, etc., and potentially lead to the installation of restrooms, garbage cans, informational kiosks, etc. Those improvements will be implemented if the Travel Oregon and National Fish and Wildlife Foundation grants are funded.

## ***Additional Files***

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### Budget Information

[Iron Head Budget Details](#)

*Additional budget information*

### Maps

[Iron Head Management Map](#)

*Site map*

### Photos

[Additional Project Photos](#)

*Photos of inundated rearing habitat.*

[Project Photos](#)

*Photos of work implemented at Iron Head in 2020*

### Design Information

### Management Plans and Supporting Documents

[Elk River SAP for Coho Recovery](#)

*Elk River Strategic Action Plan*

[ODFW-Curry SWCD Iron Head MOU](#)

*Memorandum of Agreement to manage Iron Head*

### Permits and Reviews

### Partnerships

### Public Comment

### Administrative Documents

[Curry Watersheds Nonprofit 501c3 Certification](#)

*IRS 501c3 Determination Letter*

[Signature Authorization Page](#)

*Signature Authorization for Curry Watersheds Nonprofit*

## ***Completion Report***

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A completion report has not been submitted for this project.