



Long Tom Watershed Council Action Plan

The Plan of Action for the work of the Long Tom Watershed Council is comprised of three main components, with different time-scales and levels of detail. Each of the three components of the LTWC Action Plan are included in their entirety in this document.

1. The **Conservation Strategy** has a 20+ year view, and has the most spatial explicit priorities and project types; it only covers ecological priorities (*25 pgs*).
2. The **Strategic Plan** is informed by the Conservation Strategy. It includes organizational, outreach and educational goals as well as ecological goals. This plan is revisited and reaffirmed by the Board of Directors each year during the annual work plan process. This plan was updated in 2015 (*22 pgs*).
3. The **Strategic Plan with Leadership and Fiscal Year Work Focus** is our 1-year focused work plan of action, and it includes detailed information like project names that tiers off the Strategic Plan (*5 pgs*).

There are a few other informative plans, studies and documents, including the 10-year Action Plan for the three Model Subwatershed basins (Bear, Ferguson, and Coyote Creeks) as part of the Model Watershed Program.



Long Tom Watershed Council Conservation Strategy

By
Dana Dedrick and Cindy Thieman
Long Tom Watershed Council
751 S. Danebo Ave.
Eugene, OR 97402
www.longtom.org

December 2005

Introduction to the Conservation Strategy

This Conservation Strategy is intended to be a working document. In this version, the restoration priorities for aquatic and terrestrial elements of the watershed are fully developed and spatially explicit, while the monitoring strategy is in draft stage and the Council's approach to some issues and threats (e.g. urbanization, climate change) has not yet been documented.

In this strategy document, one set of priorities focuses on aquatic habitat, stream processes, and water quality. The second set addresses terrestrial habitats. There are obvious interconnections between these two elements of a watershed, but we chose to separate them in order to avoid artificially prioritizing one over the other and to allow those who focus on one to see those priorities clearly. Within the Aquatic and Terrestrial categories, priority is implied by the order of the list.

In this document, the "typical species" are used to paint a picture of each habitat and may help indicate the habitat's function and value in the watershed. Within that list, federally listed threatened or endangered species are underlined. However, the Long Tom Watershed Council's restoration and enhancement program is focused on habitats as opposed to species-level conservation. When an at-risk¹ species occurs on a project site, the project site plan will include the specific needs of that species².

Throughout this document ecological goals are stated for each parameter and habitat. These goals are presented together in Appendix A. The Long Tom Watershed Council ("Council", or "LTWC"), the LTWC Steering Committee and the LTWC Technical Team approved these ecological goals in 2004. Staff from the Oregon Watershed Enhancement Board (OWEB) reviewed them and provided feedback during this local approval process. These priorities are now included in the document *Willamette Basin Restoration Priorities*, available from OWEB or on the web.

Regarding the maps that are referenced in this document, the mapping of priorities is included only to assist in depicting the priorities described in the text. Discrepancies are not intended to confuse the evaluation of priorities and the development of projects. The LTWC Technical Team's recommendations will supersede the maps and written priorities as necessary to include the most current scientific understanding and knowledge of watershed conditions.

Finally, more detailed priorities and monitoring strategies may exist or be developed for select sub-watersheds, regions or habitats. For more information pertaining to the Council's priorities, please review other documents available on the website, or contact the authors.

Acknowledgements

The authors thank the Technical Team of the Long Tom Watershed Council, in particular Steve Smith (USFWS), Gary Galovich (ODFW), and Ed Alverson (the Nature Conservancy) for informing and reviewing these restoration priorities for aquatic and terrestrial habitats. This does not indicate their full endorsement of these priorities. The Council enjoys an ongoing relationship with these individuals and the agencies and organizations they represent, among many others, in the pursuit of watershed health.

AQUATIC

Typical species: Cutthroat trout and spring Chinook are the native salmonid species in the watershed. Juvenile spring Chinook seasonally migrate from the Willamette River to rear in the lower Long Tom River. Fluvial cutthroat trout migrate from the Willamette to streams in the lower Long Tom for spawning, juvenile rearing and refuge. A separate group of fluvial cutthroat migrate among the streams in the upper portion of the watershed, but are blocked from the lower part of the basin and the Willamette River by Fern Ridge dam. Resident cutthroat trout are both above and below the dam where watershed conditions support them. Oregon chub were historically present and may be reintroduced. Pacific lamprey and western brook lamprey, both state-listed sensitive species, are likely present and spawning in the basin. Significant native amphibian and vertebrates present in the basin are the western pond turtle and red-legged frog.

Status and Priority: Changes to channel morphology, instream habitat, hydrology, riparian zones, and water quality and reduced access to historical spawning and rearing areas have negatively affected the productivity of all life-stages of cutthroat trout and rearing of juvenile spring Chinook. The amount of available spawning habitat for fluvial cutthroat trout in the watershed has been reduced by 70% due to lack of fish passage at Fern Ridge dam. Similarly, lack of passage at Fern Ridge has reduced rearing habitat for spring Chinook by 70%. This makes the quality of and access to spawning and rearing habitat below the dam, in the Bear and Ferguson Creek sub-watersheds, particularly important.

Connectivity/Passage

Status and Priority: This is a top priority because passage allows fluvial and resident cutthroat trout, spring Chinook, and other aquatic species, including amphibians, access to higher quality habitats at certain life-history stages, and as stream conditions change seasonally. Dams and impassable culverts prevent these species from reaching critical spawning habitat and refuge during the summer and winter, and block access to refuge habitat as stream conditions change seasonally. Where temperature problems exist in specific areas the need for refuge is further increased.

Ecological Goal:

Unrestricted passage for a variety of aquatic species to stream reaches that include breeding and rearing habitat and summer and winter refuge. Note: this excludes natural barriers.

Mainstem Barriers

Address fish passage at barriers on the mainstem of the lower Long Tom River

Geographic Priorities:

- Fern Ridge Dam
Complete barrier. Removal highly unlikely. Watch for opportunities to provide fish passage over or around. Fish passage here would reconnect the entire basin's fish populations.
- Monroe Drop Structure

Passes adult trout only under some condition but does not pass juvenile trout or Chinook salmon. Analyze potentials for removal of dam or improving fish passage.

- Stroda Drop Structure
Hydraulic modeling results indicate this is a barrier at all flows for juvenile trout, and at some or most flows for adult trout. This blocks access to Ferguson Creek and Bear Creek habitat for fish migrating from the Willamette.
- Ferguson Drop Structure
This blocks passage to Bear Creek habitat from the mainstem Long Tom River. A bypass exists at some flows via a historic segment of the Long Tom River.

Possible Project types³:

Barrier analysis, dam/drop structure modification or removal, fish passage structures (FPS), provide fish passage alternatives; monitoring.

Culverts, small dams and other diversion structures

Status and Priority: Replace culverts, remove or provide fish passage over small dams and other diversion structures.

Geographic Priorities:

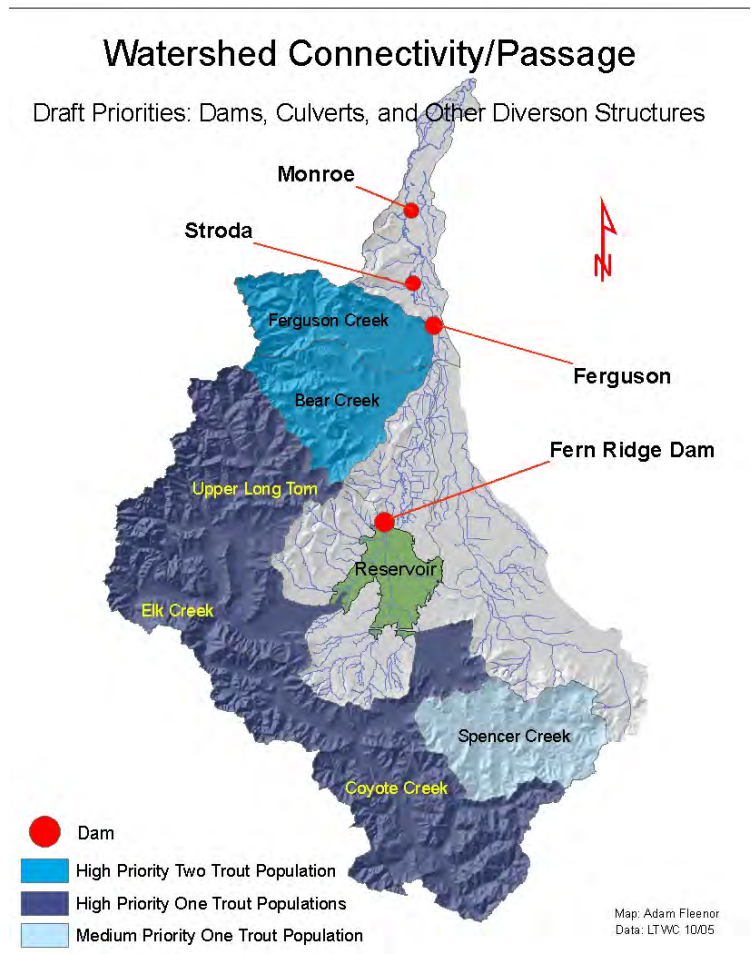
- Lower basin
 - Ferguson sub-watershed, Bear sub-watershed
 - Other tributaries to the lower Long Tom River

High priority for resident and fluvial trout, Chinook salmon
- Upper basin
 - Upper Long Tom, Elk, Coyote sub-watersheds
 - Spencer sub-watershed

High priority for resident and fluvial trout

Medium priority for resident and fluvial trout

Considerations for project prioritization: *Lower basin:* amount, type, and quality of habitat to be opened up, as well as position in the sub-watershed (with downstream positioned culverts being higher priority depending on suspected fish use – e.g. resident



or fluvial trout, Chinook). Gather specific data on each potential barrier, then correct passage problems. *Upper Basin*: amount, type, and quality of habitat to be opened up, more than position in the basin, due to the presence of resident as well as fluvial cutthroat trout in this area of basin.

Possible Project types:

Barrier inventory, fish passage structures (FPS), small dam removal, alternatives to push-up dams (APD), correcting road/stream crossings (CRSC), culvert removal, replacement or modification, provide fish passage through or around impoundments, screen diversions; monitoring.

Watershed Process & Function

Status and Priority: Re-routing, straightening, and subsequent down-cutting of many valley bottom streams has led to disconnection of streams from their floodplains, leading to greater scouring of channel bottoms during flood events, less deposition of gravel and fine sediment, and a loss of material and nutrient flows between the floodplain and channel. Fern Ridge Reservoir has altered historic habitat in a number of significant ways. First it blocks upstream fish passage to the good-quality habitat in the upper watershed. Second, sediment trapping and flood control by the dam change the amount and timing of sediment flow and distribution and affects floodplains downstream. Because there is now less flooding downstream of the dam, sediment that used to be dropped out in the floodplain ends up in the Willamette River. Third, the shallow nature of the reservoir leads to higher summer water temperature and higher winter turbidity levels in the lower Long Tom River. A natural flow regime that mimics pre-dam conditions for the lower Long Tom River, including low flows, pulses and overbank flows, was important for supporting native aquatic organisms and their food sources.

Addressing watershed process and function is a top priority in order to expand cutthroat trout distribution and access to habitat, as well as the habitat for other aquatic species. Habitat emphasis includes flow, riparian area functions and channel complexity and hydrologic processes. Groundwater recharge is not a specific focus but is improved through project types that address hydrologic process and wetland habitat.

Ecological Goals:

Streams with sufficient channel complexity to support native fish and other aquatic species. Riparian zones that provide a high degree of ecological function with an absence of invasive non-native species. Streams that exhibit a natural hydrologic regime, such that they interact with their floodplains to reduce peak flows, increase base summertime flows, exchange nutrients, promote groundwater recharge, and provide off-channel habitat.

Ensure Appropriate Water Flow

Status and Priority: Where flow is limiting habitat availability for native species, ensure a more natural flow regime, especially to ensure minimum flows. Temperature is the primary limiting factor to the distribution and productivity of cutthroat trout and a diversity of native aquatic species. This is based on ODFW information that trout will use streams with poor physical

habitat, albeit at lower densities, as long as temperature is suitable. Flow affects how much habitat is available, and provides dilution for pollutants.

Geographic Priorities:

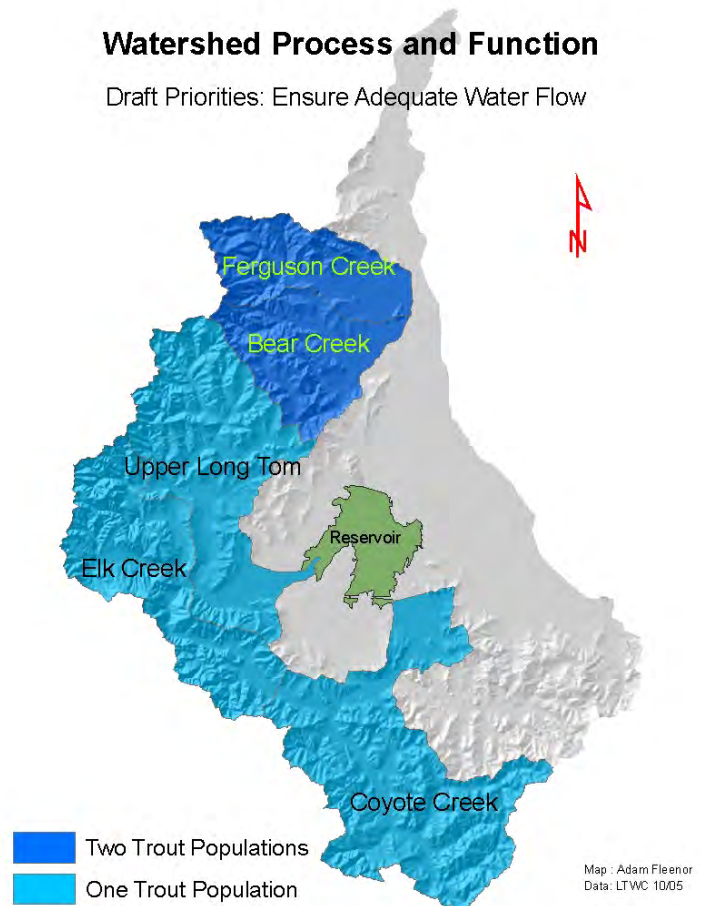
- Ferguson sub-watershed, Bear sub-watershed
High priority for resident and fluvial trout, Chinook salmon
- Upper Long Tom, Elk, and Coyote sub-watersheds
High priority for resident and fluvial trout
- Lower Long Tom sub-watershed
Fern Ridge contributes flow; consider establishing instream right.

Possible Project types:

In-stream water enhancement (IWE); irrigation efficiency projects (IEP); re-establish minimum flow recommendations for the mouths of all sub-basins (except Lower Long Tom); in-stream water rights; education on conservation; other projects that restore hydrologic processes; collecting data on restoration effectiveness through site-specific monitoring techniques; analyzing data provided by the partnership to determine restoration opportunities and technique effectiveness

Watershed Process and Function

Draft Priorities: Ensure Adequate Water Flow



Restore Riparian Area Function

Status and Priority: Significant limiting conditions to proper riparian zone function in the watershed include: loss of large conifers in the upper reaches, loss of bottomland hardwood forest, replacement of trees and native shrubs with invasive species, grasses, or bare soil, and an overall reduction in the density and number of trees in riparian areas. In some cases, the loss of function is due to a streamside wetland or prairie area being overgrown by forest. Almost 60% of riparian areas had moderate to high loss of ecological function due to one or more of these causes. Loss of shade contributes to warmer stream temperatures, which has had a significant impact on cutthroat trout. In addition, many species depend wholly or in part on riparian habitat and have been negatively affected by this loss in function (see also, Terrestrial section)

Restoring riparian area function is a high priority throughout the watershed. Healthy and well-functioning riparian areas provide a host of water quality and habitat benefits, and creating and sustaining these areas is a relatively simple and cost-efficient restoration option. In addition,

restoration actions taken to achieve this goal directly benefit others, especially channel complexity and water quality. Restoring riparian function is important especially in areas where channels have been straightened and loss of stream-flood plain interaction has occurred, and/or where channel migration has been limited, and therefore natural formation of channel complexity is limited. And in areas where channels have not been straightened or banks have not been armored, riparian restoration is important because it will be easier to achieve healthy riparian function.

Geographic Priorities:

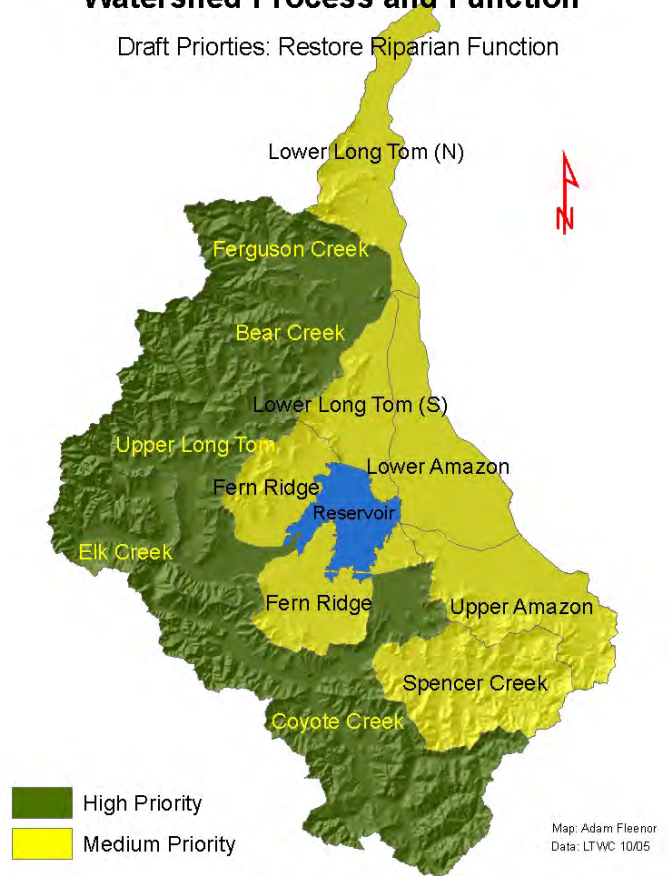
- Along the lower Long Tom the areas without levees are more important than those with levees.
- Other priorities will be determined by site characteristics that make a potential action higher priority.

Some site characteristics to be considered higher priority:

- Links existing riparian habitats
- Restores riparian areas that lack any other channel complexity because they are straightened
- Restores riparian area at a site where focal or at-risk species can be benefited
- All things being equal, project sites are considered higher priority relative to other projects as they affect longer stretches and on both sides of the stream and/or achieve larger riparian zone widths (in proportion to stream size).

Watershed Process and Function

Draft Priorities: Restore Riparian Function



Possible Project types:

Riparian vegetation planting (RVP); removing invasive species; riparian fencing (RF); off-channel watering for livestock (LWO); riparian conifer restoration (RCR); native shrub and forb filter strips; Beaver management (BM); Conservation Easements or agreements for high-quality areas (RCP); Riparian Area Enhancement (RAE); other projects that restore hydrologic processes; monitoring.

Restore Channel Complexity and Hydrologic Processes

Status and Priority: Hydrologic processes include different states of flows: low flows, within-bank pulses, overbank flooding, and flushing flows that remove fine sediment and mobilize the bed material. In restoring hydrologic processes, it is important to consider both the flow magnitude and flow duration for these different states of flows. Channel complexity refers to in-channel features, including channel sinuosity, variability in slope, depth and bed characteristics,

and cover provided by large woody debris and other components. Native aquatic organisms are adapted to channels with complexity, and loss of complexity may negatively affect them. Restoring hydrological processes and channel complexity is a holistic way of ensuring the health of native aquatic organisms.

Geographic Priorities:

This is a priority in mid- to lower-reach habitat.

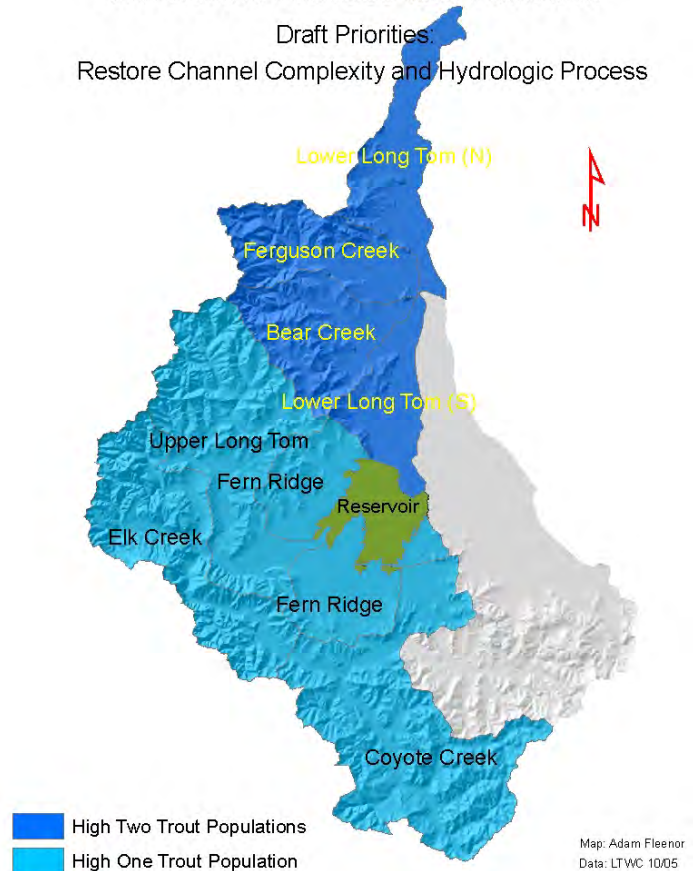
- Ferguson, Bear, and Lower Long Tom sub-watersheds
High priority for resident and fluvial trout, Chinook salmon
- Upper Long Tom, Elk and Coyote sub-watersheds
High priority for resident and fluvial trout
- Spencer, Upper Amazon, Lower Amazon, and Fern Ridge Tributaries sub-watersheds

Possible Project types:

Stream Habitat Enhancement (SHE) and Channel and Bank Alteration (CBA); reconnecting and restoring flow to historic channels (RHC); develop meanders and side-channels (DMSC); expand and restore floodplain such as with in-stream high-flow channels; streamside terracing and bank sloping (BS); off-channel habitat creation (OCHC); large wood placement (LWP); in-stream and hydrologically-connected wetland restoration (WE); other project types to increase floodplain interaction and move important parts of the watershed toward more natural hydrologic regimes; other project types that restore hydrological processes themselves (instream flow restoration broadly including; low flows, pulses, overbank flows); other project types that specifically support turtles and amphibians; monitoring.

Watershed Process and Function

Draft Priorities:
Restore Channel Complexity and Hydrologic Process



Water Quality

Status and Priority: Limiting conditions caused by water quality include 1) high summer water temperatures and low dissolved oxygen levels in the mid and lower portions of the watershed, 2) high nutrient levels in streams running through the urban and heavily irrigated agricultural lands, 3) high turbidity levels in the Long Tom River below Fern Ridge Reservoir, some portions of Coyote Creek, and upper Amazon Creek, and 4) high E. coli levels in the upper Amazon, Ferguson, and Bear Creek sub-watersheds. These water quality conditions limit cutthroat trout

and other native fish production in many parts of the watershed, negatively impact spring Chinook rearing habitat on the lower Long Tom, and, in the case of E. coli, pose a risk to human health. No instream water rights currently exist in the Long Tom Watershed, however anecdotal information from long-time residents suggests that summer stream levels are lower than historically. Low summer flows contribute significantly to high summer water temperature. Poor water quality can have not only a local impact, but a downstream impact on the Willamette River and further.

This category focuses on efforts to improve water quality not already addressed by restoration of watershed processes and functions. It highlights specific water quality goals that need to be addressed to meet water quality standards set by the Oregon Department of Environmental Quality (DEQ). Our geographic priorities were developed from Council water quality data as well as DEQ water quality limited streams in the watershed. The priorities address limiting factors to aquatic life and human health. Notably, two municipalities obtain their drinking water from sources within the watershed – Veneta and Monroe. Both rely on wells. Veneta currently faces issues relating to quantity. Monroe is located within the Southern Willamette Valley Groundwater Management Area and contamination by nitrates is of primary concern.

Ecological Goals: Water quality and quantity conditions, including groundwater, that support viable populations of native aquatic life. Sediment delivery to streams that is within natural range of variation in both timing, character, and amount so that no adverse effects occur to native aquatic organisms.

Decrease water temperature and increase dissolved oxygen

Status and Priority: Temperature is the primary limiting factor to cutthroat trout productivity and this makes all fish-bearing streams a priority. Due to Fern Ridge Reservoir acting as a heat sink, sub-watershed improvements may not contribute significantly to cooling in the Willamette. Individual sub-watersheds are prioritized based on fish populations and use. This is based on ODFW data showing that trout will use streams with poor physical habitat as long as temperature is suitable. See also the previous section on ensuring adequate water flow.

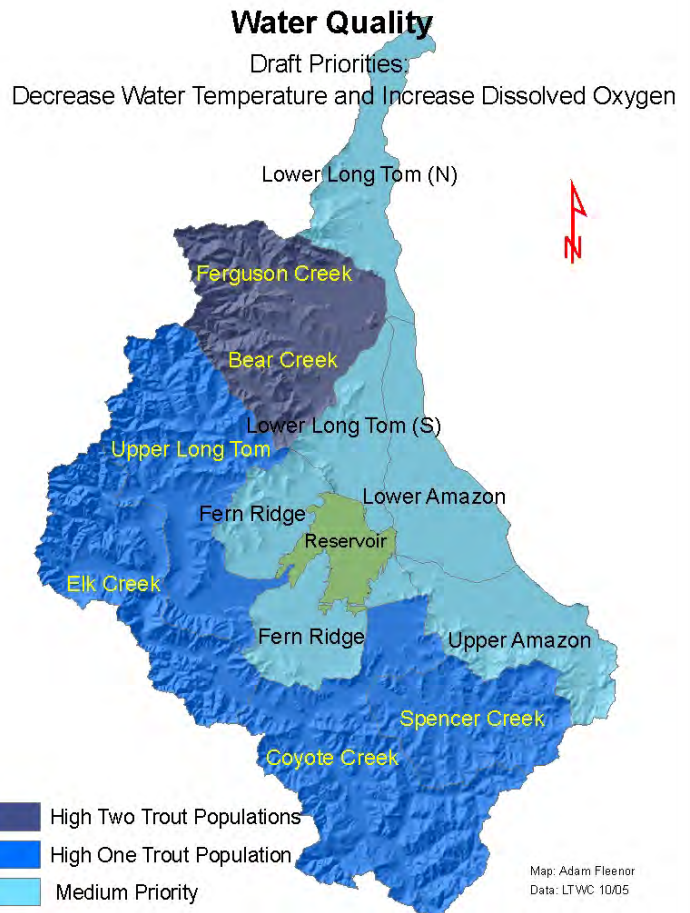
DEQ Water Quality Limited Streams: Ferguson Creek (temperature); Coyote Creek (DO), Amazon Diversion (DO).

Additional Water Quality Limited Streams for temperature and DO (per Council data): Long Tom River below the dam, Lower and Upper Amazon Creek, and the lower sections of Upper Long Tom, Elk Creek, Bear Creek, Spencer Creek and Fern Ridge tributaries.

Geographic Priorities:

None of the major tributary streams meet the state temperature standard along their middle and lower reaches. The upper, forested stream reaches meet the standard all or most of the time. Dissolved oxygen data follows a similar trend compared to the state standard for cold-water aquatic life.

- Ferguson, Bear sub-watersheds
High priority for resident and fluvial trout, Chinook salmon
- Upper Long Tom, Elk, Coyote sub-watersheds
High priority for resident and fluvial trout
- Spencer (seasonal), Upper Amazon, Fern Ridge Tributaries, Lower Amazon, Lower Long Tom sub-watersheds
Medium priority



Possible Project types:

Those that produce shade and increase flow: Riparian Area Enhancement (RAE); riparian vegetation planting (RVP); riparian fencing (RF); off-channel watering for livestock (LWO); education and monitoring to reduce or eliminate use of fertilizers which can contribute to nutrient loading in streams; Conservation Easements or agreements for high-quality areas (RCP); monitoring.

Pesticides and Toxins

Status and Priority: USGS Willamette River Water Quality report findings suggest a reduction in pollution levels is needed in the Long Tom River Basin. This could be a significant limiting factor threatening aquatic health, yet specific geographic data is sparse, and collection is limited due to the prohibitive cost. Acute levels are especially important as they can quickly impair or kill aquatic life. High levels are transferable and become a problem downstream also. Pesticides and toxins are not only a local problem, however, and the types of actions it requires to change the pollution sources and levels suggests an approach needs to be prioritized and addressed at a larger scale than the individual watershed.

DEQ Water Quality Limited Streams: Amazon Creek (arsenic, lead)

Additional Water Quality Limited Streams (per Council data): no Council data; collection of data or review of current and relevant studies is a priority.

Geographic Priorities:

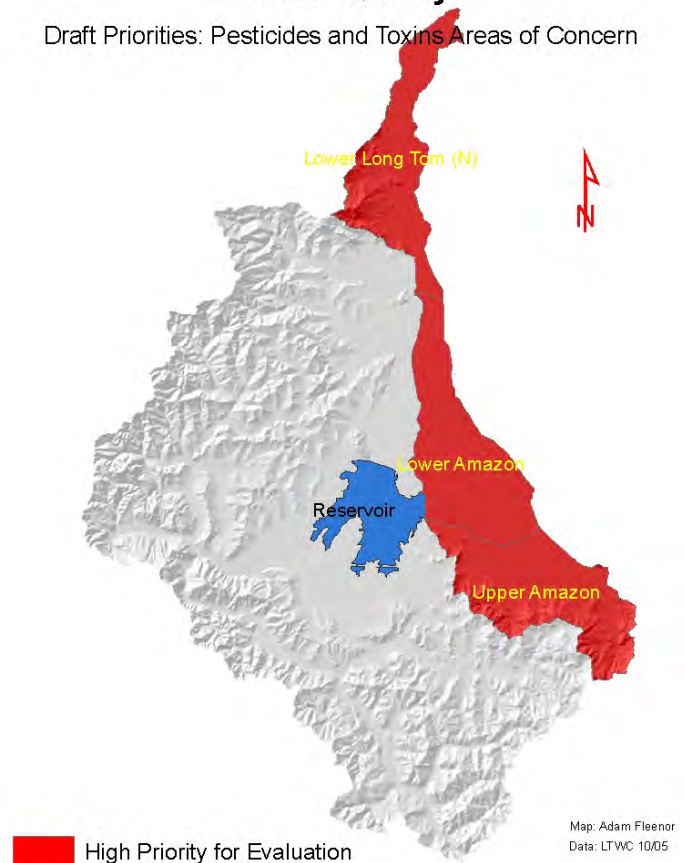
- Upper Amazon – *high priority as we assume that this is the likely source of significant pollution contribution.*
- Lower Amazon, Lower Long Tom – *high priority to the extent that sources of pollution exist, not because it is where the problem has accumulated.*

Possible Project types:

Prevention to minimize risk to local waterways; reduction in use, especially in urban and rural resident areas where over-application is common; monitoring (in collaboration with USGS or local college); education and outreach concerning proper pesticide application to lawns, native-plant based landscaping, and neighborhood peer pressure discouraging chemically intensive landscaping. See also actions to Restore Riparian Area Function.

It is important to note that these project types are not sufficient to address what may be a significant threat to aquatic health. Monitoring is essential to determine the extent of the problem, especially on the pesticides and toxins present and with known toxicity levels. Possible incoming knowledge: Clackamas Watershed Council's report on local pesticide monitoring program.

Water Quality
Draft Priorities: Pesticides and Toxins Areas of Concern



Decrease nutrient levels

High nutrient levels encourage excessive algal growth, which deprives the stream of oxygen. This effect can also occur downstream. Council monitoring data show high levels of nitrate and phosphorus in some streams compared to average levels throughout the watershed. The City of Monroe is located within the Southern Willamette Valley Groundwater Management Area and contamination by nitrates is of primary concern.

DEQ Water Quality Limited Streams: *A state standard is not currently set for nutrients so there are no state listings.*

Additional Water Quality Limited Streams for temperature and DO (per Council data):

Bear (P), Coyote (P), Spencer (P), Elk (N), Ferguson (N and P), Lower Amazon (N and P), Lower Long Tom (N and P), Upper Amazon (N and P), Upper Long Tom (N), Fern Ridge Reservoir (P).

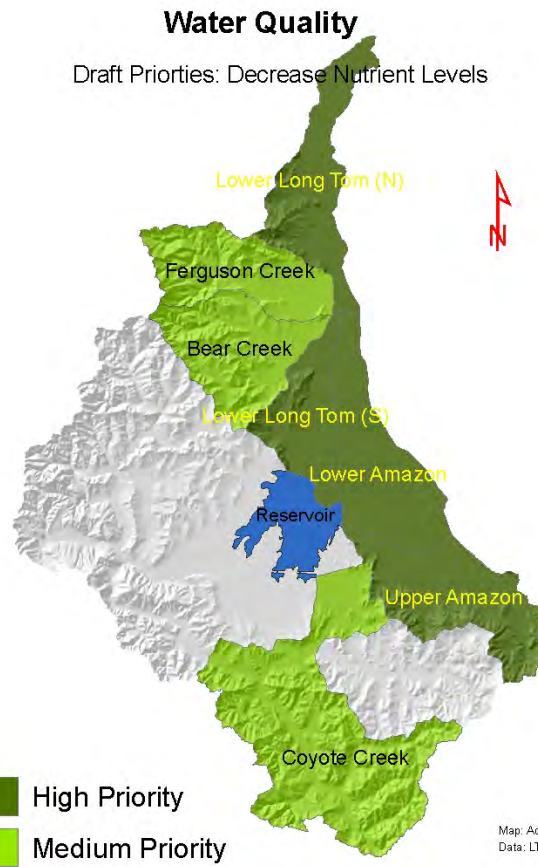
Geographic Priorities:

These priorities were set based on severity.

- Lower Amazon, Lower Long Tom, and Upper Amazon sub-watersheds
High Priority
- Ferguson Creek, Coyote Creek, Bear Creek, sub-watersheds
Medium Priority – in these areas the situation is less severe but important due to downstream impact.

Possible Project types:

Riparian Area Enhancement (RAE); riparian vegetation planting (RVP); riparian fencing (RF); off-channel watering for livestock (LWO); native shrub and forb filter strips; education and monitoring to reduce or eliminate use of fertilizers; manure management and storage facilities; Conservation Easements or agreements for high-quality areas (RCP); monitoring.



Decrease bacteria levels

Bacteria is primarily a problem for human health. Excessive levels also imply riparian degradation, nutrient loading and subsequent oxygen depletion of streams, which impacts the vitality of trout. This is often caused from livestock access to streams, and manure.

Note: It is not known how much of a problem the delivery of bacteria from septic sources is. Assessment methods to determine bacteria source are prohibitively expensive and still produce unclear results. Funding for assessment and repair of individual systems is not known to be available. Professional opinion is that domestic livestock are a significant source based on a) the land use patterns in sub-watersheds with high bacteria levels, and b) the bacteria levels at headwater sites that set a probable “background” level for the wildlife contribution.

DEQ Water Quality Limited Streams: lower Long Tom River, Coyote Creek, Fern Ridge Reservoir, Amazon Creek, Amazon Diversion.

Additional Water Quality Limited Streams (per Council data): Bear Creek, Ferguson Creek, Spencer Creek.

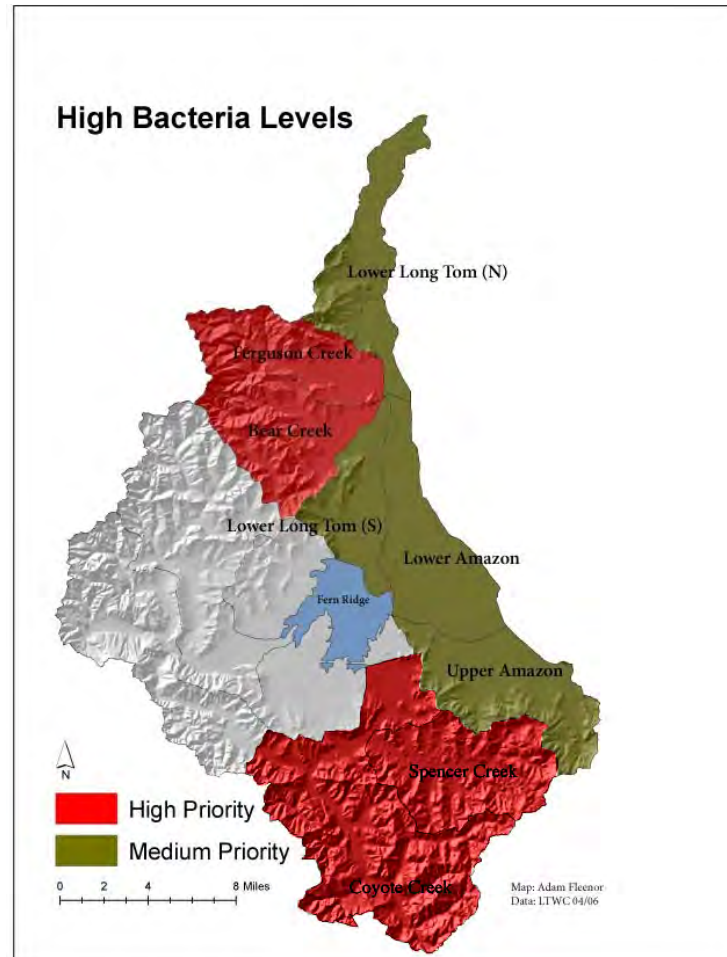
Geographic Priorities based on Council *E. coli* monitoring data:

Viewing high bacteria as an indicator of riparian degradation, high priority areas affect both humans and fish.

- Bear, Ferguson, Coyote, and Spencer sub-watersheds
High Priority
- Upper Amazon Creek sub-watershed; Fern Ridge Reservoir (human health issue; probable sources include inflow from Coyote and Amazon Creeks, and septic); Lower Amazon Creek sub-watershed (seasonal issue; probable sources include sheep, nutria, Upper Amazon inflow); Lower Long Tom River sub-watershed (probable sources are upstream, some domestic livestock)
Medium Priority

Possible Project types:

Manure management and storage facilities; riparian fencing (RF); off-channel watering for livestock (LWO); Riparian Area Enhancement (RAE); riparian vegetation planting (RVP); native shrub and forb filter strips; Conservation Easements or agreements for high-quality areas (RCP); monitoring.



Correct sediment supply

High sediment levels impair aquatic life in respiration, visible feeding, and by clogging spawning gravels. Duration is a significant factor as this watershed experiences chronic turbidity levels. Projects and management changes should aim to correct sediment supply to a more natural amount, variation and timing.

DEQ Water Quality Limited Streams: Fern Ridge Reservoir

Additional Water Quality Limited Streams (per Council data): lower Long Tom River (turbidity)

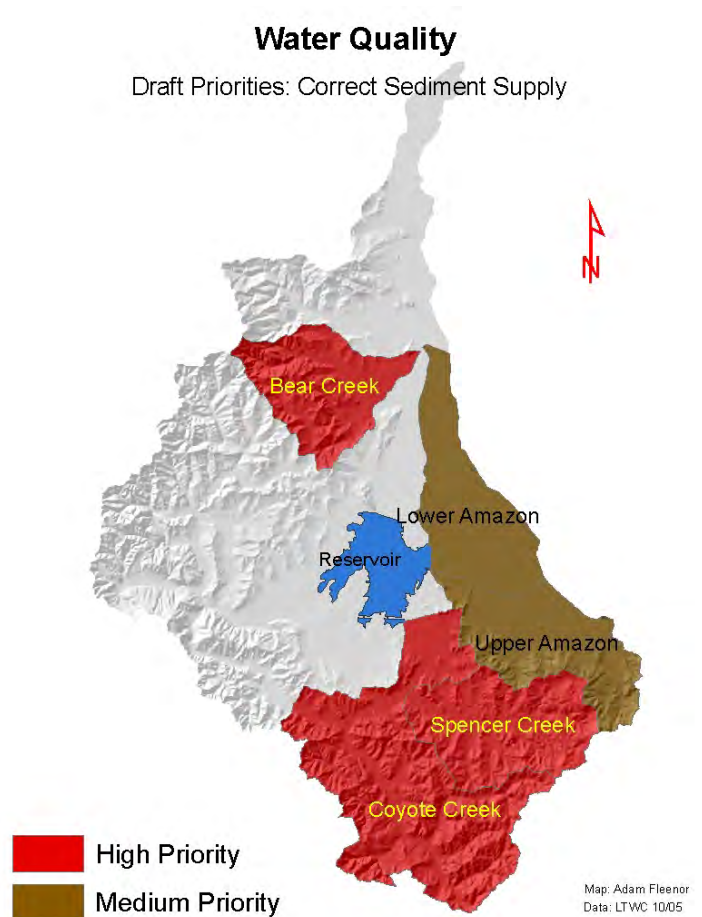
Geographic Priorities:

Note: these may be reordered upon secondary review based on sediment as a limiting factor versus where the worst problems exist.

- Bear Creek Sub-watershed, Coyote Creek Sub-watershed, Spencer Creek Sub-watershed
High Priority
- Upper Amazon Sub-watershed, Lower Amazon Sub-watershed
Medium Priority
- Lower Long Tom Sub-watershed and Fern Ridge Reservoir itself
Although a significant problem, any correction here is unlikely due to the configuration and depth of Fern Ridge Reservoir, and the amount of sediment it contributes to the lower river.

Possible Project types:

Limit/prevent sediment delivery from road/stream intersections or proximity; Channel and Bank Alteration (CBA); streamside terracing and bank sloping (BS); water/sediment control basins (WSCB); updating practices in ditch maintenance, fallow fields, tree farms, construction sites; Riparian Area Enhancement (RAE); riparian vegetation planting (RVP); riparian fencing (RF); off-channel watering for livestock (LWO); native shrub and forb filter strips; Conservation Easements or agreements for high-quality areas (RCP); monitoring.



TERRESTRIAL

Five key habitat types in the watershed have been significantly reduced or modified from historic levels in a way that severely limits the distribution of native fish and wildlife. These are: upland prairie and oak savanna, wet prairie, dry conifer and hardwood forest, perennial ponds and backwaters, and riparian areas.

“The Long Tom Watershed is the anchor area for Willamette basin terrestrial species in upland prairie, oak savannah, and wet prairie habitats – it should be the geographic focus as we will not be able to recover listed species without it.”

- Steve Smith, USFWS, February 2005.

Ecological Goals: Sufficient acres of threatened habitat types (especially oak savanna, upland prairie, and bottomland hardwood forests) to support viable populations of species dependent on these habitats, and an absence of invasive non-native species. Sufficient acreage and variety of wetlands to support stream hydrologic functions and viable populations of native wetland dependent species, and an absence of invasive non-native species. Appropriate management of conifer or mixed-conifer forested landscapes to support viable wildlife populations dependent on these habitats and an absence of invasive non-native species.

Upland prairie & Oak savannah

Typical species: elk, Colombian black-tailed deer, American kestrel, western meadowlark, horned lark, vesper sparrow, western rattlesnake, gophersnake, racer, western pond turtle (nesting), Taylor’s checkerspot, Fender’s blue butterfly, Kincaid’s lupine, Nelson’s checkermallow, golden paintbrush, Roemer’s bunchgrass, blue wildrye, California oatgrass, Hitchcock’s blue-eyed grass, white-topped aster, pale larkspur, peacock larkspur, shaggy horkelia

Status and Priority:

Upland prairie and oak savannah are the rarest habitat types in the Long Tom Watershed and the entire Willamette Valley. Historically they covered a significant portion of the watershed. Their loss is mainly due to conversion to urban and agricultural land, and fire suppression which has allowed shrubs, trees, and non-native invasive species to colonize these sites. Upland prairie provides habitat to a number of sensitive or threatened plant and animal species.

This habitat is a top priority because of the number of listed species, the extent to which the habitat has been altered and eliminated, and the limited dispersal ability of the Fender’s blue butterfly. The West Eugene Wetlands and prairies in the southeast portion of the Long Tom Watershed are the anchor for this habitat in the entire Willamette Valley.

Limiting factors for this habitat type⁴: Land use conversion and continued habitat loss. Fire suppression and fir encroachment. Invasive species. Land management conflicts. Loss of habitat connectivity. Loss of habitat complexity.

Geographic Priorities:

Please also refer to the associated map for this habitat.

High Priority:

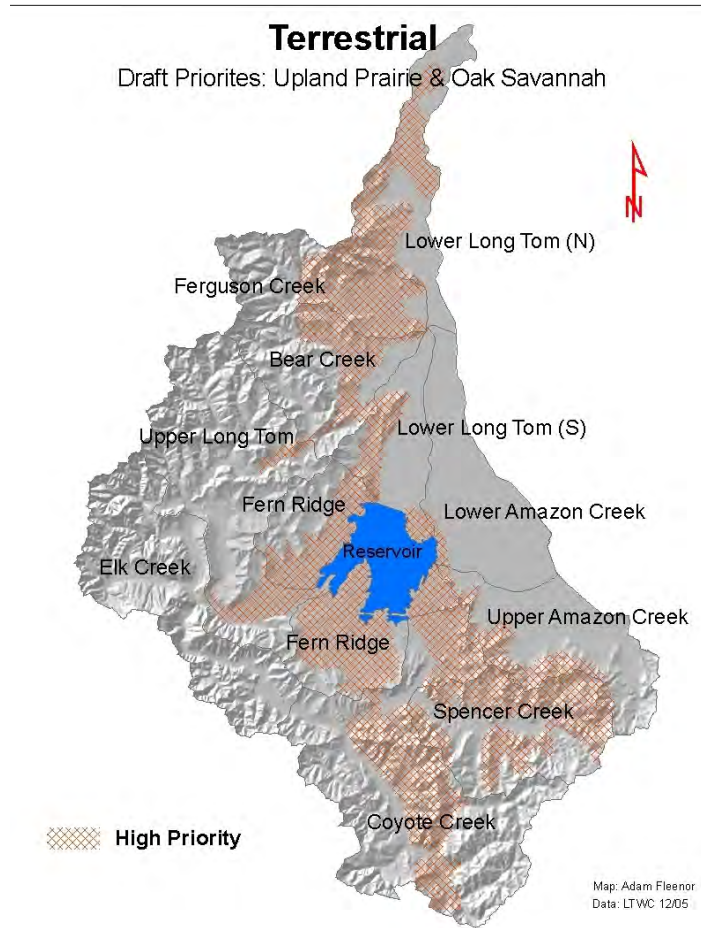
- Spencer Creek, Fern Ridge south, parts of Coyote, lower end of Upper Long Tom, areas east of Fern Ridge Reservoir up to City of Eugene UGB.

Habitat in these sub-watersheds is the best of what's left in condition and extent.

- Bear Creek, Ferguson Creek, Lower Long Tom

These sub-watersheds contain habitat needed to expand northward the range of prairie/savannah-dependent species. This is needed to link habitats for species' dispersal and to promote interchange with other populations for genetic diversity.

- Within the priority areas, TNC portfolio sites are specific known opportunities.



Considerations for prioritization:

This habitat type is fragmented and thus restoration should 1) expand the functionality of existing habitat by restoring areas of adjacent habitats and 2) connect existing concentrations or patches. Measures are most helpful on sites with concentrations of existing at-risk species, sites designated critical habitat, or sites identified in a Recovery Plan. This habitat is vulnerable to land-use changes - to provide for the long-term security of this habitat the long-term potential for monitoring, maintenance, and management should be taken into account.

Possible Project Types:

Vegetation Management (VM): reduce and control invasives (ISM), controlled burning (CB)⁵, conifer thinning (CT), thinning to create savannah conditions; planting and re-vegetation, reintroduce native forbs and especially nectar plants, planting oaks; upland bird management practices for agriculturally productive lands; monitoring.

Wet Prairie/Emergent Marsh

Typical species: common yellowthroat, common snipe, northern harrier, sora, American acetropis grass bug, western toad, water howellia, Bradshaw's lomatium, Nelson's checkermallow, Willamette Valley daisy, white-topped aster, shaggy horkelia, peacock larkspur, tufted hairgrass, common camas

Status and Priority:

Wetland prairie historically covered an estimated 34,500 acres in the Long Tom Watershed. Over the past 150 years these wetlands have been converted and filled, overgrown by wetland trees and shrubs due to fire suppression, or altered to other wetland types. Today there are approximately 1,000 acres, several hundred of which are in the West Eugene Wetlands. Significantly, the acreage in the southeast portion Long Tom probably represents more than half of what exists in the entire Willamette Valley today. This network of sites provides an important hub for restoring a connected matrix of wet prairie. This habitat is a top priority due to the listed plants and candidate-listed wildlife species it hosts and because of the degree to which the habitat has been reduced and altered compared to the historic extent.

Limiting factors for this habitat type: *Habitat loss. Water availability. Degraded water quality. Invasive species. Altered fire regimes. Land management conflicts. Loss of habitat connectivity and complexity.*

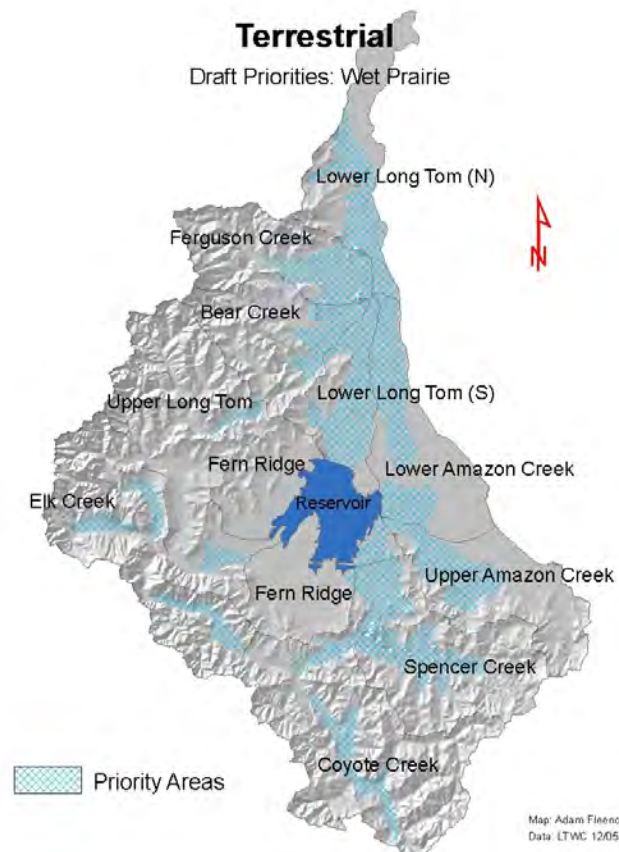
Geographic Priorities:

Please also refer to the associated map for this habitat.

- High priority areas are those within the 100-year floodplain and/or with hydric soils, combined with those in low fertility/capability class.
- High priority areas are those shown highlighted on map
- Medium priority areas are those not highlighted on map

Considerations for prioritization:

Other factors for prioritization include the size of the parcel, adjacency and connectivity with other high quality habitats, and sites with the presence or proximity of at-risk species. This habitat type is fragmented and thus restoration should 1)



expand the functionality of existing habitat by restoring areas of adjacent habitats and 2) connect existing concentrations or patches. Measures are most helpful on sites with concentrations of existing at-risk species, sites designated critical habitat, or sites identified in a Recovery Plan. This habitat is vulnerable to land-use changes - to provide for the long-term security of this habitat the long-term potential for monitoring, maintenance, and management should be taken into account.

Possible Project Types:

Wetland enhancement (WE); excavation/removal of fill (ERF); elimination of drainage structures (EDS); invasive species removal; native vegetation planting; woody species removal; controlled burning (CB); monitoring.

Riparian/Oxbow/Backwater Slough

Riparian Typical species: bald eagle, willow flycatcher, green heron, yellow warbler, swallow, dusky-footed woodrat.

Other Typical species: red-legged frog, western pond turtle, purple martin, wood duck, American beaver, river otter.

Status and Priority:

Significant limiting conditions to proper riparian zone function in the watershed include loss of large conifers in the upper reaches, loss of bottomland hardwood forest, replacement of trees and native shrubs with invasive species, grasses, or bare soil, and an overall reduction in the density and number of trees in riparian areas. In some cases, the loss of function is due to a streamside wetland or prairie area being overgrown by forest. Almost 60% of riparian areas have moderate to high loss of ecological function due to one or more of these causes. Many species depend wholly or in part on riparian habitat and have been negatively affected by this loss in function. In addition, loss of shade contributes to warmer stream temperatures, which has had a significant impact on cutthroat trout.

Perennial oxbow ponds and slow-moving backwaters were much more common in the watershed than they are today. Many of these oxbows were filled in to make way for farming, and the meandering paths of lowland streams were straightened to provide quicker evacuation of high flows. These development patterns have reduced habitat for Oregon chub (historically present in the watershed), western pond turtle, and red-legged frog, among other species.

Both these habitats are a priority due to neo-tropical migrants, amphibians, and the western pond turtle. Restoration conducted here will also address fish and water quality needs. Riparian areas are a priority throughout the watershed, especially in third-order and larger streams because this is when the hydrology creates a distinctive vegetation component and affects the tree canopy.

Limiting factors for this habitat type: Loss of riparian habitat, floodplain function, and habitat complexity. Habitat degradation. Loss of habitat conductivity. Invasive plants.

Geographic Priorities:

Please also refer to the associated map for this habitat.
 These habitats are a priority in all areas of the watershed;

Known opportunities exist in:

- Coyote and Upper Long Tom floodplain areas
- Lower Long Tom, lower reaches of Bear and Ferguson, Lower Amazon
This links the Long Tom and Willamette Rivers for key aquatic species (migratory fish, pond turtles, chub)
- Fern Ridge wildlife area, Veneta complex, and the lower basins around the southern end of the reservoir.
- Poodle Creek (in Elk Creek) and other areas

Considerations for prioritization:

- Third-order and larger streams
- The larger the site the better
- Presence or proximity of at-risk species
- Potential wildlife response
- A small area of habitat in a disturbed area may be just as valuable to nearby individual animals as a large contiguous block is to sustain populations.
- Seasonal streams can be just as important as perennial if they have rare or unusual species (e.g. Willow Creek within Amazon sub-watershed).

Possible Project Types:

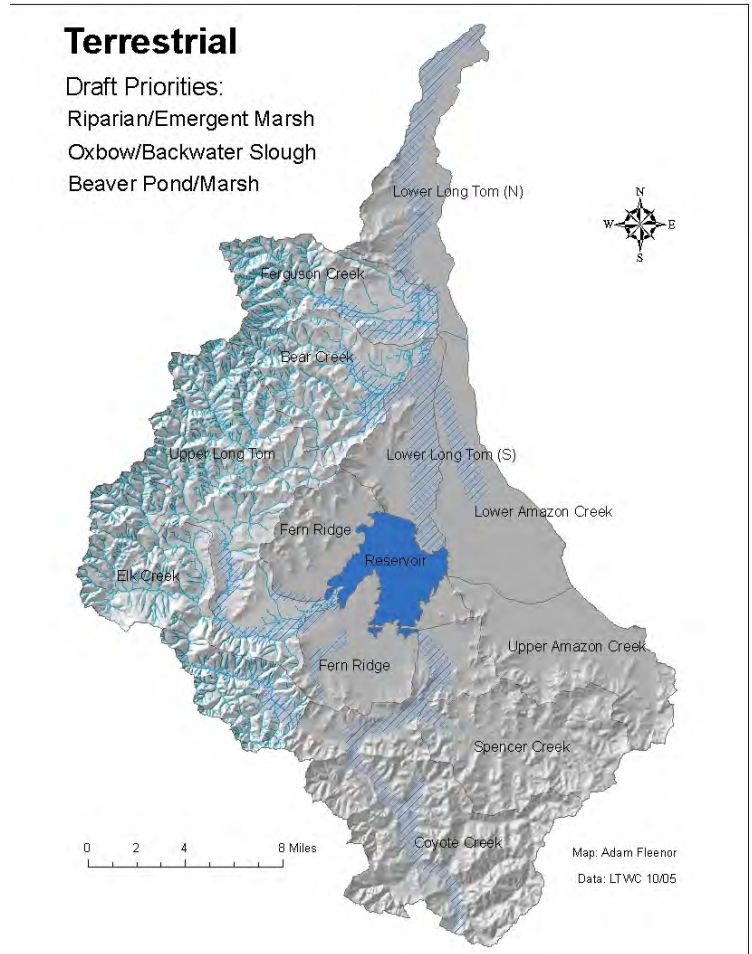
See project types for Aquatic – Water Quality – Restore Riparian Area Function

Dry Conifer/Hardwood Forest

Typical species: acorn woodpecker, chipping sparrow, western wood peewee, white-breasted nuthatch, Northern spotted owl, southern alligator lizard, sharptailed snake, Western gray squirrel, red-legged frog, wayside aster

Status and Priority:

Dry Conifer/Hardwood forest includes two types - Woodland/Shrubland, characterized by scattered conifer or scattered oak and conifer with a significant native shrub component and a



sparse canopy, and Closed Forest characterized by conifer (ponderosa pine and incense cedar) and broad leaf evergreens (madrone, chinquapin, and some oak).

Historically, both of these forest types were widespread in the watershed, covering much of the Coast Range foothills. A significant amount of this habitat has been lost by conversion to forestry or agriculture, or invasion of Douglas fir, which is most likely due to fire suppression. Dry conifer and hardwood forests provide habitat for a particularly diverse assemblage of species, and restoration is a priority due to the large number of species that depend on it.

Limiting factors for this habitat type: Land use conversion and continued habitat loss. Altered fire regimes and addressing risk of uncharacteristically severe wildfire. Fir encroachment. Invasive species. Land management conflicts. Loss of habitat connectivity. Loss of habitat complexity.

Geographic Priorities:

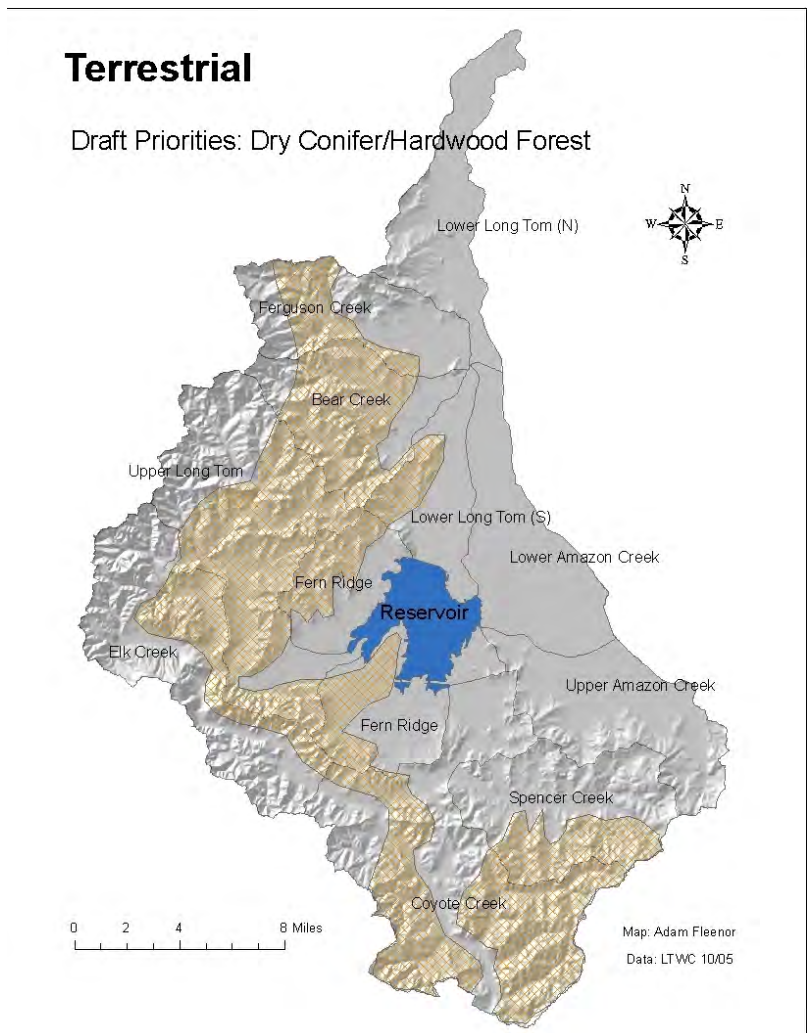
Please also refer to the associated map for this habitat.

- Between approximately 500' and 1,000' elevation zone of the southern and western Coast Range foothills surrounding the watershed.
- Within the priority areas, TNC portfolio sites are specific known opportunities.

Considerations for prioritization:

- Other factors for prioritization include the size of the parcel, adjacency and connectivity with other high quality habitats, and sites with the presence or proximity of at-risk species.
- This habitat type is fragmented and thus restoration should 1) expand the functionality of existing habitat by restoring areas of adjacent habitats and 2) connect existing concentrations or patches.

Measures are most helpful on sites with concentrations of existing at-risk species, sites designated critical habitat, or sites identified in a Recovery Plan. This habitat is vulnerable to land-use changes - to provide for the long-term security of this habitat



the long-term potential for monitoring, maintenance, and management should be taken into account.

Possible Project Types:

Vegetation Management (VM): Similar to those for Upland Prairie & Oak Savannah habitat, but especially: limit conifer invasion; thin trees; plant for species diversity based on what site historically supported; controlled burning (CB). Include specific habitat requirement of rock outcrops for the southern alligator lizard; monitoring.

Old Growth Forest

Typical species: pileated woodpecker, olive-sided flycatcher, Vaux’s swift, marbled murrelet, Northern spotted owl, great gray owl, Oregon slender salamander, American marten, red tree vole, Townsend’s big-eared bat, red-legged frog.

Status and Priority:

This habitat is less of a priority as it is already somewhat protected and managed for habitat values by BLM, ODF, and there is not a significant amount in the Long Tom Watershed relative to other basins.

Limiting factors for this habitat type: Loss of some structural habitat elements. Loss of late-successional stand size and connectivity. Altered fire regimes.

Geographic Priorities:

- BLM Late Successional Reserves, state-owned lands, and forest areas adjacent to those or adjacent to other projects.

Possible Project Types:

Old-growth conifer forest conservation.

Notes and References

Notes

1. *“At-risk” species are those listed with some kind of concern for their status in the Natural Heritage Info. Center database. There is a specific list for the Long Tom River watershed. Each species is evaluated regarding their population and breeding population status and ranked in relation to their statewide, federal and global situations, as applicable.*
2. *For more information pertaining to species-specific conservation measures see the Oregon Department of Fish and Wildlife Service publication, “Draft Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington” available on the web.*
3. *Project types will be further prioritized based on potential success at a given site.*
4. *Limiting factors for terrestrial habitat types are taken from Oregon Conservation Strategy (ODFW 2006).*
5. *At this point controlled burning and land acquisition are two project types the Council will not undertake.*

References for Aquatic Priorities

- *Long Tom Watershed Assessment 2000, Long Tom Watershed Council*
- *Long Tom River Water Quality Report 1998-2003, Long Tom Watershed Council*
- Gary Galovich, Biologist, ODFW, Personal Communication, Feb., Oct., Dec. 2005.
- LTWC Technical Team, Pers.Comm., November and December 2005.

Other references were reviewed to develop the understanding of staff and technical team during the development of these priorities such as the Draft Willamette Basin Sub-basin Plan (NWPPCC, 2004) and Willamette TMDL (DEQ, 2004), USGS Willamette River Water Quality Report (2000, pp. 20-21). Still to be reviewed and incorporated: LTWC Stream Health and Water Quality Report 2007.

References for Terrestrial Priorities

- *Long Tom Watershed Assessment 2000 Long Tom Watershed Council*
- Steve Smith, Biologist, USFWS, Personal Communication, February 2005.
- Kat Beal, Biologist, US Army Corps of Engineers, Pers. Comm., Oct., Nov. 2005.
- Ed Alverson, The Nature Conservancy, Pers. Comm., Nov., Dec. 2005.
- LTWC Technical Team, Pers.Comm., November and December 2005.

Other references were reviewed to develop the understanding of staff and technical team during the development of these priorities, and to support a limited update of them in 2009 before web publication, such as the Draft Willamette Basin Sub-basin Plan (NWPPCC, 2004) and The Nature Conservancy’s habitat priorities for the Willamette Basin/Puget Sound Trough (2004), the Oregon Department of Fish and Wildlife’s Oregon Conservation Strategy (2006), and the USFWS Draft Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (2008).

Approach and criteria to identify and prioritize restoration efforts

Overall Strategy

When determining the overall strategy for conservation, the Council considers the following sequence of activities, (adapted from Roni, et al.):

- 1) **CONSERVE: Maintain and protect** in places where there is sufficient to high quality function currently. *Note: The Council does not take the lead in implementing this project type. The Council collaborates with partners in their prioritization of conservation areas, then discusses conservation (i.e. protection) with landowners where appropriate and refers that specific action to partners for implementation.*
- 2) **RESTORE: Reconnect** high quality, functioning habitats to each other (this especially applies when considering fish passage or upland species population viability)
- 3) **RESTORE: Restore processes and functions** that will passively restore habitat, and do so for the long-term
- 4) **RESTORE: Restore or enhance habitat** at specific sites

Identifying and Prioritizing Restoration Efforts

The Council uses the following steps to prioritize geographic areas, habitat emphasis, project types, and projects:

Step	Based on	Result
Identify priority areas and habitats for conservation and restoration	Ecological data; professional judgment; existing plans	Selected sub-watersheds or areas, and habitat emphasis
Identify potential project areas	Strategic location; potential landowner interest	A set of potential project sites within key areas with landowners willing to collaborate in restoration
Determine restoration potential and likelihood of effect	Considerations such as geomorphology, hydrology, habitat condition, surrounding influences	Refined set of potential sites and project types applicable
Move from possible sites to developing projects for implementation	Considerations such as landowner interest, funds, time constraints, permits	Final selection of projects

Evaluating Individual Projects

The Council uses the following principles to evaluate potential projects: 1) Meets Priorities, 2) Acres or stream length affected and benefit to multiple species possible, 3) Proximity of project to high quality habitat or restored land, 4) Likelihood of restoration success in improving habitat and function, 4) Level of landowner interest and capability to implement and steward project, 5) Funding potential, 6) Partnership opportunities, 7) Community support, especially in terms of interest from other potential project landowners, and/or lack of controversy, especially with neighbors, 8) Potential for long-term protection of habitat or function, 9) Surrounding threats to project success or longevity, such as from land-use, and 10) Council is most appropriate entity.

Initial Monitoring Concepts

Watershed or Sub-watershed Scale Monitoring: Every 5 – 10 years

- 1) Develop measurable objectives for target water quality and habitat indicators. These could be either numeric or trend and should be realistic.
 - a. Water temperature (key sub-watersheds that have modeling results available like Coyote Creek, Ferguson Creek, maybe Bear Creek)
 - b. Bacteria (Ferguson Cr., Bear Cr.) (decrease average levels)
 - c. Nitrates (Sub-watersheds that we have documented increasing trends in) (decreasing trend or decreased average levels)
 - d. Turbidity (Upstream-downstream differences; objective could be to decrease average difference compared to what they are now)
 - e. Riparian zone conditions (randomly selected sites- could be macroinvertebrate sites- look at differences over time; Are riparian areas getting narrower/sparser; wider/denser; more shade/less shade?)
 - f. Macroinvertebrate conditions (select a sub-set of subwatersheds)- Improve scores compared to 2003-06 scores; go back to a sub-set of the same sites.
- 2) Target actions in certain sub-watersheds for E. coli reduction, temperature reduction, riparian enhancement, and nitrate reduction. Use measurable objectives above to assess impact. *Sub-watersheds: Coyote Creek, Bear Creek, Ferguson Creek.*
- 3) Assess land use changes
 - a. Forest harvest acreages (from ODF annual data)
 - b. Agriculture crop acreages (from FSA annual data)
 - c. Percent impervious surface increase (from LCOG or City of Eugene?)
- 4) Partner with the Nature Conservancy on Conservation Action Plan monitoring for Spencer, Coyote, and Amazon Creek sub-watersheds. TNC and other partners will assess effectiveness of restoration and conservation actions on oak woodland, oak savanna, upland prairie, and wet prairie.

Restoration effectiveness monitoring: select project types

Specific parameters are to be determined with emphasis on site-specific monitoring techniques, and utilizing data provided by fellow organizations and/or similar or related projects to determine technique effectiveness and inform restoration opportunities and priorities.

- 1) Riparian enhancement projects
 - a. Shade increase (densitometer)
 - b. Temperature decrease (summer continuous temperature monitoring)
- 2) Large wood and other instream enhancement projects
 - a. Stream surveys (thalweg profile, wood county, Wolman pebble count)
- 3) Habitat projects
 - a. Amphibian, bird utilization and/or response.

Appendix A

Ecological Goals

Approved by Steering Committee, Tech Team, Council, OWEB. 2004.

Aquatic passage

Goal: Unrestricted passage for a variety of aquatic species to stream reaches that include breeding and rearing habitat and summer and winter refuge. Note: this excludes natural barriers.

Instream Habitat

Goal: Streams with sufficient channel complexity to support native fish and other aquatic species.

Water Quality

Goal: Water quality and quantity conditions, including groundwater, that support viable populations of native aquatic life.

Riparian Zones

Goal: Riparian zones that provide a high degree of ecological function with an absence of invasive non-native species.

Wetland habitat

Goal: Sufficient acreage and variety of wetlands to support stream hydrologic functions and viable populations of native wetland dependent species, and an absence of invasive non-native species.

Upland habitat

Goal: Sufficient acres of threatened habitat types (especially oak savanna, upland prairie, and bottomland hardwood forests) to support viable populations of species dependent on these habitats, and an absence of invasive non-native species.

Goal: Appropriate management of conifer or mixed-conifer forested landscapes to support viable wildlife populations dependent on these habitats and an absence of invasive non-native species.

Hydrology

Goal: Streams that exhibit a natural hydrologic regime, such that they interact with their floodplains to reduce peak flows, increase base summertime flows, exchange nutrients, promote groundwater recharge, and provide off-channel habitat.

Sediment Supply

Goal: Sediment delivery to streams that is within natural range of variation in both timing, character, and amount so that no adverse effects occur to native aquatic organisms.



Long Tom Watershed Council

Strategic Plan & Work Focus, 2015-19

Board Approval: June 4, 2015

Contents

EXECUTIVE SUMMARY	4
Purpose	4
Timeframe.....	5
Council Background	5
Vision.....	5
Mission.....	5
Purpose	5
Goals	5
Founding Long Tom Watershed Council Goals	5
Ecological Goals.....	6
Watershed Map, identifying 10 subwatersheds and Willamette service area.....	7
STRATEGIES & OBJECTIVES	8
1. PLANNING & PROJECT DEVELOPMENT. Plan Strategic Actions & Conduct Landowner Outreach	8
1.1. 10–Year Plan for 3 “model” sub-watersheds.....	8

1.2. Long Tom River Floodplain Function.....	8
1.3. Upper Willamette Floodplain Function.....	8
1.4. Outreach for project development.....	8
2. MONITORING. Assess and Monitor Watershed Conditions.....	9
2.1. Model Watershed Monitoring.....	9
2.2. Fish Migration Study.....	9
2.3. Project Effectiveness Monitoring.....	10
2.4. Agriculture Pesticide Stewardship Partnership.....	10
2.5. Project Stewardship Program.....	11
2.5. Fish Barrier Inventory additions.....	11
2.6. Rapid Bio-assessment.....	11
3. AQUATIC HABITAT IMPROVEMENT PROJECTS.....	12
3.1. Fish passage enhancement projects.....	12
3.2. Riparian and water quality enhancement projects.....	12
3.3. Instream habitat.....	13
3.4. Willamette floodplain forest and hydrologic connection projects.....	13
4. TERRESTRIAL HABITAT IMPROVEMENT PROJECTS.....	13
4.1. Oak woodland, oak savanna, and upland prairie enhancement projects.....	14
4.2. Wetland prairie enhancement projects in priority subwatersheds.....	14
5. URBAN WATERS & WILDLIFE IMPROVEMENTS.....	14
5.1. Urban watershed strategies.....	15
5.2. BMP - Trout Friendly Landscapes Pledge and Salmon Safe Certifications.....	15
5.3. Stormwater retrofit projects.....	16
5.4. PSP – BMPs for Landscapers - Latino Outreach Program.....	17
5.5. Other Voluntary Best Management Practices.....	17

6. CITIZEN LEARNING & ENGAGEMENT	18
6.1. Education and Outreach Strategy	18
6.2. Council meetings, tours, events and communications	18
6.3. Member and volunteer engagement.....	19
6.4. Engage and Support Watershed Leaders.....	19
6.5. Understand and communicate through existing social networks	19
6.6. Online tools: Website and Social Media	20
7. COLLABORATION ON OTHER WATERSHED PRIORITIES.	20
7.1. Rivers to Ridges Partnership	20
7.2. Collaboration with other watershed councils and entities.....	21
7.3. Agriculture Water Quality Management Plan (SB1010)	21
7.4. Invasive Plants and Animals.....	21
7.5. Willamette River Initiative by City of Eugene	22
7.6. Groundwater.....	22

EXECUTIVE SUMMARY

Building on significant and broad accomplishments for which LTWC has won state and international awards, LTWC is poised to deepen and solidify its work, and follow through on many new and refined initiatives that we have put in motion during the past 5 years.

Important trends are:

- Continued support to private landowners in making fish and wildlife habitat improvements across the creeks and prairies of the Long Tom Watershed, and surrounding areas, which overall increases the habitats provided by our matrix of private and public land
- Continued expansion of service to the Willamette River mainstem landowners and partners to improve habitat for fish and wildlife, especially within the context of working lands
- A transition toward a higher profile in the urban area, in partnership with the City of Eugene, supported by the technical expertise we are able to provide to our business partners especially
- Deepening exploration and practice in working in partnership with fellow watershed councils and others to increase capacity and sustain higher quality work
- A greater emphasis on fundraising, to make projects whole and follow through on key details, and to stabilize the Council's ability to serve the watershed and community in its major programs

It is LTWC's belief and desire that this Strategic Plan and our ability to interpret it will engender a level of understanding and buy-in that will be beneficial ultimately to all the pieces that make the work and the vision possible - fundraising, volunteering, public meeting and tour attendance, and championing of the effort and vision among our community members.

Our community members are supporters, partners, friends, and interested parties to the work of the Long Tom Watershed Council and we are excited to continue our technical service, community engagement and learning, and our ability to bring resources to this area for voluntary work on behalf of fish, wildlife, clean water and people.

The next 5 years will find LTWC highlighting opportunities for the community to engage in and support this exciting work even further. Let's work together – in action through understanding - to really make things happen!

Purpose

The purpose of the *Strategic Plan* is to outline the 3-5 year focus of LTWC's work, while indicating LTWC's current trajectory toward the Council's ultimate vision. The *Strategic Plan* narrows the broad goals and priorities in the 20-year *Conservation Strategy* to more actionable opportunities, and is a framework to formulate annual work plans and budgets.

Timeframe

This document is intended to express goals and strategies for a 3-5 year time period and was last reviewed and approved by the LTWC Board of Directors in 2015. Measures for tracking progress are included where appropriate and are suggestions. This plan will be updated as necessary, and referenced during the Council's evaluation process and work plan development.

Council Background

Vision

A healthy watershed that ensures clean water and habitat for fish and wildlife, while recognizing the importance of people's economic livelihood and quality of life.

Mission

The Long Tom Watershed Council serves to improve water quality and watershed condition in the Long Tom River basin and surrounding drainages through education and collaboration among all interests, using the collective wisdom and voluntary action of our community members.

Purpose

The Council will provide opportunities for people who live, work, play, derive benefits from, or are affected by the Long Tom watershed to cooperate in promoting the health of the watershed and communicating the social and economic benefits to the community.

Goals

Founding Long Tom Watershed Council Goals

1. Maintain and improve water quality.
2. Enhance habitat for fish and wildlife.
3. Encourage communication, learning, and participation among people with interests in the watershed.
4. Promote continued benefits from a healthy Long Tom River Watershed.
5. Help people get the assistance they need for watershed enhancement plans and projects (educational, technical, financial, etc.).
6. Gather, verify, and share information on current and past watershed conditions.
7. Recommend ways that citizens, organizations, and local, state, and federal governments can help achieve the goals of the Long Tom Watershed Council.
8. Educate, motivate and provide feedback to all interested persons in the watershed working toward these goals.

**Goal 2 was slightly modified from the 1998 version to be more inclusive of all habitat for fish and wildlife, not especially riparian and wetland.*

Ecological Goals From the Long Tom Watershed *Conservation Strategy**.

1. Aquatic passage

Unrestricted passage for a variety of aquatic species to stream reaches that include breeding and rearing habitat and summer and winter refuge. Note: this excludes natural barriers.

2. Instream Habitat

Streams with sufficient channel complexity to support native fish and other aquatic species.

3. Water Quality

Water quality and quantity conditions, including groundwater, that support viable populations of native aquatic life.

4. Riparian Zones

Riparian zones that provide a high degree of ecological function with *dominant and diverse native vegetation*.

5. Wetland habitat

Sufficient acreage and variety of wetlands to support stream hydrologic functions and viable populations of native wetland dependent species.

6. Upland habitat

Sufficient acres of threatened habitat types (especially oak savanna, upland prairie, *wet prairie*, and bottomland hardwood forests) to support viable populations of species dependent on these habitats, and a dominance of native species.

Appropriate management of conifer or mixed-conifer forested landscapes to support viable wildlife populations dependent on these habitats

7. Hydrology

Streams that exhibit a natural hydrologic regime, such that they interact with their floodplains to reduce peak flows, increase base summertime flows, exchange nutrients, promote groundwater recharge, and provide off-channel habitat.

8. Sediment Supply

Sediment delivery to streams that is within natural range of variation in both timing, character, and amount so that no adverse effects occur to native aquatic organisms.

**Goals 4-6 were slightly modified from the 2009 version to focus on dominant and diverse native species versus a complete absence of invasive non-native species.*

Watershed Map, identifying 10 subwatersheds and Willamette service area



STRATEGIES & OBJECTIVES

1. PLANNING & PROJECT DEVELOPMENT. Plan Strategic Actions & Conduct Landowner Outreach

1.1. 10-Year Plan for 3 “model” sub-watersheds

Track the 10-year plan to achieving uplift for 3 priority subwatersheds – Coyote, Bear, and Ferguson. Update progress in relation to targets and monitoring strategies. Secure maps for LTWC areas from BEF. Update photos as necessary to indicate current and healthier/reference conditions.

- *Measure: We understand what progress has been made, lessons learned, what is necessary to achieve uplift such that those basins are on uplift trajectory. Maps and photos shared with council. Final report 2019-2020.*

1.2. Long Tom River Floodplain Function

Conduct outreach and technical work in cooperation with Army Corps, grant funders, partner organizations, private donors, and key stakeholders to cultivate and secure Long Tom River floodplain conservation and habitat improvement activities by the Army Corps. Develop and submit conservation studies and proposals. Including Coyote Creek hydrology, lower Long Tom revetments, confluence area.

- *Measure: Has the Council done everything within reason to get the Corps to create better floodplain functions? Riparian areas? Are those conditions trending positive or negative?*

1.3. Upper Willamette Floodplain Function

Document a collaborative floodplain and riparian forest habitat improvement strategy to address the Upper Willamette Basin (Willamette River mainstem, “anchor areas”, confluence areas of major tributaries), engaging the strongest and most capable partners possible to identify, define and develop relevant projects. Seek funding, as a collaborative if possible. LTWC - Conduct outreach and projects as funding available, both to achieve improvement now as well as demonstrate LTWC’s core competencies.

- *Measures: Do we have a plan in place and funding or funder interest? Is the appropriate landowner communication and participation happening? Is the work reviewed by and incorporating feedback from technical and planning experts? Does LTWC see a way to participate in moving things forward?*

1.4. Outreach for project development

Provide education and technical assistance to landowners in priority subwatersheds to develop habitat improvement projects and stewardship actions that address critical water quality and habitat issues. Carry out outreach to landowners either individually with referring landowners or in groups with co-hosting landowners. Include tours of private and public sites to see reference conditions or project examples. Direct landowners to project partners most appropriate to their needs (Council, MRT, TNC,

SWCD, NRCS, USFWS, etc.). As appropriate, partner to share contacts and provide interpretation on habitat tours. Track landowner interest status, and the change over time. This is a high priority Technical Assistance need in terms of grants, as the targeted outreach in some areas takes more time in planning and conversations – a longer up-front investment to get to the actions that improve habitat and water quality. Focused efforts have been in Ferguson Creek, Upper Long Tom, Coyote Creek, Willamette mainstem, Bear Creek (2013-ongoing). Upcoming include lower Long Tom River (2015 new). Future priorities include Coyote Creek for wildlife habitats and Willamette mainstem for river habitats.

- *Measure: How many landowners responded to our outreach, and how many would like to work with the Council (or others) either now or in the future? What outreach methods were most effective in receiving a helpful response? How is the information being tracked in the database? How many project starts or stewardship actions resulted?*

2. MONITORING. Assess and Monitor Watershed Conditions

2.1. Model Watershed Monitoring.

For 2010 – 2019, monitor LTWC model watersheds (Ferguson, Bear & Coyote) in collaboration with regional Model Watershed Program. Regional parameters are temperature, riparian vegetation structure, canopy cover, instream habitat complexity. LTWC on its own has conducted continuous temperature at 27 sites and macroinvertebrate sampling in some years. Flow has not been possible to monitor regionally, despite various attempts, due to technical and cost reasons. Flow data would be helpful to inform the results from other parameters and could be a future discussion among entities regionally at some scale. Note: Due to the regional nature of this program, LTWC does not have control over quality or results. There is an investment opportunity here in which additional funding support could allow LTWC to make full use of the data, and translate it into terms that are helpful for people to understand local creeks and rivers and take appropriate actions to meet the watershed vision.

- *Measure: Does LTWC have the data and understand it. Do the data provide a benchmark of conditions? Are there enough sites to cover diversity of our priority areas? Are controls established? Is all information retrievable in GIS/dbase?*

2.2. Fish Migration Study

Build on four years of data and tagged cutthroat trout, track fish until the tags stop transmitting. Continue collaboration to find ways to quality-check and analyze data. Describe results, map and graph as data allows, publish as possible. Consider funding sources for this; plan to heavily leverage with private donations. There is an investment opportunity here in which additional funding support could allow LTWC to use this

information to describe fisheries in the Long Tom Watershed, and to update habitat improvement priorities.

- *Measure: Do we understand fluvial cutthroat migration for the Willamette cutts using the Long Tom River? Do we understand the timing of their movements, suggesting possible triggers? Do we have any additional information, e.g. extent of range in smaller channels.*

2.3. Project Effectiveness Monitoring.

Assess effects of habitat improvement and enhancement activities at selected project sites, e.g measure responses of species after 100-acre oak savanna/woodland habitat improvement project. Increase the percentage of monitored projects to broaden scope, number of sites, and application of monitoring results. Collaborate with Meyer/BEF, U of O and OSU, TNC, BLM, City of Eugene and Upper Willamette Watershed Councils to increase all partners' understanding of certain habitat improvement treatments.

- *Measure: Are we monitoring project types or methods whose effectiveness is not well documented? Have our monitoring results enabled us to adapt or affirm our habitat improvement methods or strategies?*

2.4. Agriculture Pesticide Stewardship Partnership

LTWC took the opportunity to form a Pesticide Stewardship Partnership (PSP) in 2009. The PSP is a program of the Oregon Department of Environmental Quality. The goal of the PSP is to monitor for pesticides in Amazon Creek to determine what chemicals are impacting water quality in the area. Key partners are SureCrop Farm Service, the City of Eugene, the DEQ, Meyer Memorial Trust, and the farmers and urban businesses participating in data collection, and learning about and implementing suggested “best management practices” (BMPs). This partnership is one of seven designated PSPs in the state, and the first with a significant urban focus. The sampling locations are complementary with the City of Eugene and data is shared. LTWC uses the data to direct outreach to address commonly found pesticides and their sources, and help both rural and urban business owners make improvements. For local agricultural growers, program partners work to interpret and share the data to help identify ways to reduce pesticide loss to local waterways when that is happening.

This program should continue into the foreseeable future. Please see also section 5, Urban Habitat Improvement.

- *Measure: Is the data collected of high quality? Does LTWC understand it and is it summarized for the people that need to know? Are agricultural landowners supported in their understanding of the data, and with technical resources to implement any best management practices? Please see also section 5, particularly for urban measures.*

2.5. Project Stewardship Program

Status and Momentum: Stewardship of the habitat gains made is just as important as making them, and investments of time and funding should be borne out. The level at which this is happening is impressive and worth mentioning as it reflects a maturing of the habitat programs, recognition of this part of the process and investments by funders. Further, the private landowners are very impressed and thankful for the assistance with projects that are otherwise too large for them to steward themselves. Achievements are: 254 acres in 2010-12, 76 acres 2013, 89 acres 2014. An MOU was signed in 2015 to increase capacity in a joint manner for this area of work between LTWC and McKenzie Watershed Council. There is an opportunity here for significant investment in grant funding, donations or both.

Actions Ahead: Conduct project maintenance and discuss stewardship with landowners; 101 acres targeted 2015. Recognize funding is not sufficient for the core needs. Build capacity to steward projects to meet targeted habitat improvements. Evaluate post-implementation conditions (e.g. plant survival), document findings, and communicate need for stewardship/enhancement funding and/or further technical evaluation. Document findings and use to evaluate potential of projects proposed in future and to create helpful policies aimed at preventing problems encountered in the future. See also 2.4 Effectiveness Monitoring). Continue to incorporate volunteers as possible.

- *Measure: Are we able to sustain habitat improvements? Did we learn from completed projects and is the organization's learning put to good use (for example, policies and potential project evaluation tools and others).*

2.5. Fish Barrier Inventory additions.

Assess, prioritize, map and document fish barriers in western portion of watershed, including western portion of Coyote Creek (coming out of Coast Range where best cool-water fish habitat is). As access is granted, continue to add any final pieces to barrier inventory, which holds our data from LTWC's survey of 300 barriers. Note that of these, 35 were prioritized in first-tier for removal to open access to the best fish habitat (based on water quality data), and 80% of those have been completed 2009-14.

- *Measure: Do we have a tier-2 set of barriers ready if funding available. Potential threat to watershed health: Are people allowed to add new barriers via roads or small dams?*

2.6. Rapid Bio-assessment

Goal of Rapid Bio-assessment is to assess which habitats the trout are seeking cooler water refuge in during warm summer months. Document fish presence, evaluate density/distribution, and stream and riparian habitat conditions. Map results. Use this information to describe habitat use and to update habitat improvement priorities. LTWC has completed rapid bio-assessments in Ferguson, Owens and Jordan Creeks (in Bear

subwatershed), and Bear Creek (in Coyote Creek subwatershed). These were completed before prioritized implementation work. Funding needed to perform second surveys at same sites over next 2-4 years, and ideally to perform surveys in five additional drainages in Bear and Coyote subwatersheds.

- *Measure: Do we understand enough about fish habitat to prioritize riparian and instream habitats and apply for grants? Is all information retrievable in GIS/dbase?*

3. AQUATIC HABITAT IMPROVEMENT PROJECTS

Implement projects to achieve specific habitat objectives and to provide examples within the Working Lands and Habitat Program. Identify, develop and implement fish passage, riparian and water quality enhancement, wet prairies, and instream habitat enhancement projects in priority areas. These projects include significant volunteer and partner participation for technical review of projects, and Council volunteers on riparian enhancement projects. Partners include, for example, the Army Corps of Engineers for fish passage on the Lower Long Tom, ODFW for technical assistance, landowner match for projects on private lands, and TNC, USFWS, and BLM on wet prairie habitat improvement.

3.1. Fish passage enhancement projects in priority subwatersheds.

Results from the fish barrier inventory and water quality data collection help prioritize our fish passage enhancement efforts. The Council has worked with landowners to fix/replace/remove 14 barriers in 2009-11, 13 more in 2012-14, with 6 funded and scheduled for 2015. All but 1 of the top priority known barriers in the 3 current priority “model” watersheds are fixed, and these have all been at the “creek” level. Specific upcoming projects include: Begin scoping fish passage improvement on Lower Long Tom River with USACE (OWEB TA/outreach grant, new in 2015), replace priority fish passage barriers in Ferguson and Owens Creeks, continue to pursue funding for other priority barriers in Bear and Coyote subwatersheds (16 remaining). Address fish passage barriers within the Willamette mainstem high water area where fish movement is blocked.

- *Measure: Is significant progress being made in opening up key corridors for the free passage of all aquatic organisms at all life stages and flows?*

3.2. Riparian and water quality enhancement projects

Identify and complete priority riparian enhancement, livestock, and grassed waterway projects to address widespread interest and need in this area. Continue discussions regarding large-scale collaboration opportunities with the Corps on riparian zone enhancement for the lower Long Tom River. The pace of the work varies with funding programs; LTWC landowners and staff have shown capability and commitment to complete the work when it is supported. From 2001-2008 the Council planted trees and shrubs on 63 acres and installed 5.1 miles of riparian fencing; from 2009-2011 the Council planted 24 acres of riparian trees/shrubs & installed 2.4 miles of riparian

fencing. Beginning in 2012 the Council began using a high-density planting plan and re-focused riparian planting efforts in the Model subwatersheds with additional funding. From 2012-2015, the Council planted 130 acres and installed 3.6 miles of riparian fencing. Maintenance work to ensure plants are successfully established will be active on 50-120 acres/year from 2015-2020.

- *Measure: Are we planting and establishing riparian vegetation on priority reaches?*

3.3. Instream habitat in priority subwatersheds.

Identify and complete priority large wood placement and historic channel restoration projects as outreach and landowner connections produce priority project locations. The pace from 2009-2015 has been high due to model watershed funding; it is possible this can continue. From 2009-2011 the Council has installed 33 large wood structures at 4 sites. From 2011-2014, the Council installed 60 large wood structures along 5.2 stream miles at five sites. The installation of 20 structures along 1.5 stream miles is scheduled for summer 2015.

- *Measure: Are at least 2 priority projects being completed per year?*

3.4. Willamette floodplain forest and hydrologic connection projects

Cultivate relationships with private and public landowners along the mainstem Willamette River and pursue funding for priority habitat improvement work (hydrologic re-connection and floodplain reforestation) when projects are ready. The Council's first mainstem Willamette River projects, at two sites near the mouth of the Long Tom River, are scheduled to begin in 2015. There are further opportunities for subsequent habitat improvement at these sites being explored by the Council and project partners. We are working with partners along the mainstem to seek larger joint grants that can address up to 6 years of projects at a time, leveraging multiple funders and cooperation among organizations.

- *Measure: Are relationships developing with landowners such that projects are coming to fruition? Do we have a pipeline of priority projects ready for funding?*

4. TERRESTRIAL HABITAT IMPROVEMENT PROJECTS

Status and Momentum: These efforts are within the Working Lands and Habitat Program. The Council led or assisted with completion of about 800 acres since 2009. Landowners include public, NGO, Tribal and private citizens. At 14 sites within the Long Tom Watershed, the Council has partnered with private and public landowners to restore nearly 800 acres of oak and prairie habitat since 2009. The Council has carried out this work with low costs and using skilled contractors, bringing to the community roughly 19 grants totaling more than \$1.7 million in combined OWEB funds and leveraged match from partners. Partners include USFWS, the McKenzie River Trust, TNC, City of Eugene, private landowners and others.

Actions ahead: Implement projects to achieve priority objectives, practice habitat improvement and provide examples to others. Enhance and restore wetland prairie, upland prairie, oak savanna, and oak woodland.

- *Measure: Are we completing 2-5 projects per year overall? Are there new projects in implementation and grant-writing phases consistently?*

4.1. Oak woodland, oak savanna, and upland prairie enhancement projects

Restore 150 acres oak savanna, oak woodland/riparian oak, and upland prairie habitat in Coyote Creek subwatershed and along the Lower Long Tom River. This will include removal of invasive plant species, seeding native species, and thinning trees in savanna and woodland areas to enhance understory conditions. Continue development of 2 oak-prairie projects in Coyote Creek and Ferguson Creek subwatersheds on approximately 200 acres.

- *Measure: Are we making noticeable progress for this habitat type according to partners and landowners, and given available funding?*

4.2. Wetland prairie enhancement projects in priority subwatersheds.

Restore 120 acres of wet prairie and vernal pool habitat at Coyote Creek South. This site is significant for it being the first new land acquisition by ODFW in 10 years and its location in a matrix of 800 acres of publicly owned conservation lands. The project will restore a vernal pool and wet prairie mosaic across 120 acres of annual and perennial grass seed production fields. Pursue 1 other priority site.

- *Measure: Are we making noticeable progress for this habitat type according to partners and landowners, and given available funding?*

5. URBAN WATERS & WILDLIFE IMPROVEMENTS

In 2014 LTWC trapped and tagged 3 native cutthroat trout in Amazon Creek where it flows north from Eugene to farmlands just west of Junction City. Knowing that cutthroat trout are exploring Amazon Creek is motivating to people working across the rural and urban sectors of the watershed to improve water quality and habitat conditions. This program has many subcomponents, all of which are predicated by the creation of the Amazon Pesticide Stewardship Partnership (see section 2) which provides new water quality data to inform the outreach strategies and generate action through understanding for the urban constituents. The Urban Waters & Wildlife Program leverages the inherent strengths of the watershed council in stakeholder diversity, collaboration, and over 17 years of experience in habitat projects and education. Through exploration with the City of Eugene and key Agricultural stakeholders on what niches would be helpful for LTWC to perform in, multiple Urban Waters & Wildlife (UWW) Program pathways have developed, as described below.

Significant partnerships have been built and will be necessary to continue a program of this scope. Current major partners include the City of Eugene, SureCrop Farm Service Department of Environmental Quality, and Oregon Department of Agriculture. Major funders include the

Meyer Memorial Trust, Oregon Watershed Enhancement Board, Oregon Department of Agriculture, SRA (through a contract from Environmental Protection Agency), and Bureau of Land Management (wetlands soils). The continued engagement of key local urban businesses will be crucial to project success. Eugene businesses and farmers along Amazon Creek will both benefit from the technical expertise of the watershed council and its partners and from the community exposure in working toward a positive water quality goal on a voluntary basis. There is an overall investment opportunity here to continue this program, or aspects of it, for the foreseeable future.

5.1. Urban watershed strategies

Status and Momentum: The City of Eugene’s urban areas drain to either Amazon Creek or the Willamette River directly, and LTWC adopted the Willamette River as part of its service area in 2014. Springfield and Eugene metro areas are joined and there are numerous small cities in the area that may also benefit. This program has involved LTWC attracting and offering a new area of technical expertise in technical assistance for urban stormwater improvement and habitat creation and connection. Experience developed here furthers potential opportunities to work with other local jurisdictions in water and habitat planning and management, for example watershed protection policies or practices that small cities like Veneta would find helpful (such as Stoneybrook-Millstone (New Jersey) example. In a related action, LTWC has reached out to McKenzie Watershed Council to coordinate in providing services to the urban area (and beyond) with LTWC focused on habitat improvement and MWC focused on education.

Actions Ahead: Overall, continue to identify strategies based on the interests of watershed members and partners, especially private businesses and the City of Eugene, to build, refine and deliver all aspects of this program. As partnerships develop, identify and prioritize new and refined program opportunities.

- *Measure: Is a full complement of urban watershed improvement strategies offered by LTWC and partners? Have opportunities to address urbanization challenges in other towns (Springfield), and small towns (e.g. Veneta, Junction City, Monroe) been identified and documented?*

5.2. BMP - Trout Friendly Landscapes Pledge and Salmon Safe Certifications

Trout Friendly Pledge Level. *Status and Momentum:* Currently, business owners can take a pledge to incorporate Trout Friendly Practices into their landscape and receive recognition for follow-through. If a stormwater retrofit is advised, installation cost offsets can be sought for stormwater management projects that exceed existing regulations. If the business or their landscape crew needs assistance, LTWC can provide that, using a grant, fee for services structure, or some kind of business or member donation depending on the size or scope of the project and interest level of the business. Businesses that take part in this program are given marketing support through signage, tours and various media connections. A similar process could possibly be

explored for residences, though this program does not currently have a cost offset mechanism and is not a priority given other work underway and existing municipal code.

Actions Ahead: If funded, develop a Marketing Strategy with key organizational partners in pursuit of a “tipping point” where outreach and marketing and action is accomplished at high levels and watershed impact is almost assured. Continue to outreach with the program as funded, and/or focus on Salmon Safe, depending on the cross-section we find of business interest and funding for LTWC to provide the services.

- *Measures: How many businesses are verified Trout Friendly? Is there a funding model that supports LTWC’s further work in this area as requested by businesses?*

Salmon Safe Certification Level. Status and Momentum: Salmon Safe certification can be seen as a next level up from Trout Friendly if business owners are interested in higher levels of certification and/or the marketing ability that comes with that. LTWC wrote a successful grant to partner with Salmon Safe (based in Portland) and provide outreach to businesses in the Eugene/Springfield area due to LTWC’s strong business relationship base and local proximity. Currently, LTWC is technically supporting the first certified business. The role of LTWC is to generate interest, then to bring in Salmon Safe partners to further develop the relationship and to conduct a site analysis which includes recommendations for site and operational improvements to be made over the coming years in order to maintain certification.

Actions Ahead: More businesses are interested in becoming Salmon Safe certified. LTWC could provide technical assistance to carry out the stated recommendations, however the funding models needs to be clarified for LTWC’s work in this case. There is a specific investment opportunity or fee for service opportunity here to deliver these technical services.

- *Measures: Are there certified Salmon Safe businesses per our grant agreement? Is there a funding model that supports LTWC’s further work in this area as requested by businesses?*

5.3. Stormwater retrofit projects

Status and Momentum: This UWW program pathway is a strong partnership with the City of Eugene and focuses on LTWC providing outreach and technical assistance via voluntary stormwater retrofitting with businesses when property owners are interested in making improvements ahead of regulatory requirements. LTWC uses a few priority criteria (e.g. size of landscape, location), and focuses where projects are likely to demonstrate improvements. As of April 2015, 10 stormwater retrofits have been installed at 5 different business sites; 3 more projects are currently in various stages of the planning and there is great interest from the business community to continue this momentum. Direct installation cost offsets are provided from the City of Eugene who has also partnered with LTWC to identify projects, provide permitting assistance,

identify and track metrics to assess effectiveness, coordinate on public outreach, and other project support. A stormwater retrofit is usually automatically a Trout Friendly Landscape and can be part of the work toward a Salmon Safe certification.

Actions Ahead: Keep effectiveness matrix to follow the impacts & acreage managed as well as impervious surfaces removed. List which major pollutants are being managed off individual sites. Continue to refine with City. Determine viability of other aspects of the program, build on other models and work with partners to achieve pollution prevention, community skill building, landscape improvements, etc. Develop fee for services component to meet demand and clarify how that works separately from the business donations discussed in section 8 as some project designs qualify for partial funding from existing but temporary grants. This program pathway has a specific investment opportunity in continuing the installation cost offsets from the City of Eugene, and adding sources of program funding to leverage the additional aspects of the work required by LTWC for this method to be successful.

- *Measure: Completed effectiveness matrix and review by LTWC and City of Eugene.*

5.4. PSP – BMPs for Landscapers - Latino Outreach Program

This program has a primary goal of assisting Spanish speaking landscapers to understand and pledge to use pesticide best practices, and to follow through in supporting them with the knowledge and skills to do so. To this end, this project has entailed creating partnerships with local entities currently working with the Latino population to share and improve outreach materials and trainings based on LTWC’s initial Latino Outreach and Communications Strategy, and to deliver trainings directly. ODA has hired on a Spanish-speaking pesticide specialist and has pledged 100 hours towards the higher level trainings. LTWC is currently leading this program with the City of Eugene as a strong partner alongside ODA and the Latino community organizations such as Downtown Languages and Lane Community College among others.

Actions ahead: Expand and leverage funding to complement the partial funding from the 5 year subcontract with SRA (an EPA contractor).

- *Measure: Completed communication strategy elements by LTWC and partners. Refinement of strategy with partners. Positive or constructive feedback from Spanish speaking landscapers and key community members.*

5.5. Other Voluntary Best Management Practices

If funding were available, and to the extent people follow through with appropriate BMPs, we may be able to map, track and estimate that impact. This concept is not fully developed and many organizations have struggled with how to track myriad, widespread, voluntary, and unreported actions.

6. CITIZEN LEARNING & ENGAGEMENT

Further improve watershed health by capitalizing on and expanding the natural resource knowledge of council staff and members, partners, local officials and key connectors, landowners, business owners, and interested citizens on watershed science and issues. Similarly, increase key people's participation and support for improving water quality and habitat through LTWC's mission and programs.

6.1. Education and Outreach Strategy

Create an outline for an Education & Outreach Strategy and then seek funding to develop the Strategy that identifies what barriers to watershed health we can overcome with targeted education and outreach. Determine specific issues and audiences/participants for a diversity of watershed sectors/stakeholders, outline objectives for learning and engagement, and build in partner ideas, feedback and coordination to the extent feasible. Strategy document would capture LTWC's approach to public meetings and other learning opportunities and events, newsletters, website, social media, and volunteer engagement.

- *Measure: Do we have an education and outreach strategy that is actionable? Is it communicated to other partner organizations to find commonalities, synergies and opportunities for collaboration?*

6.2. Council meetings, tours, events and communications

Develop and host 6 public meetings, project tours, and/or panel discussions annually. Rotate around the watershed for maximum exposure to each part of the watershed community. Focus on a selection of: LTWC's work, watershed conditions and the latest data or information, land stewardship ideas, methods or actions, or other topics of public interest. Identify target audiences for each event and outreach to particular stakeholder group(s) for a given topic. Produce regular newsletters with information pertinent to the topic of public meetings and tours, to prepare citizens for maximum learning and involvement during the public events. Reach out to form personal relationships with people that come to events; document that learning in the database to understand peoples' interests, ideas, and willingness to participate and support LTWC's mission.

Participate in some additional high-value outreach opportunities including select presentations and tabling events to a) increase the visibility of LTWC, b) impart watershed knowledge with and among partners, and to key groups and stakeholders, and c) recruit involvement and support for improving water quality and habitat through LTWC's mission and programs.

- *Measure: How many people does the Council reach out to each year? How many people attend Council meetings and tours? Are we building new contacts and adding to our knowledge about contacts and what they are interested in doing*

to participate in improving local water quality and habitat with LTWC? Is the newsletter effective in spreading the message of the Council's work, mission, and upcoming events? Are Council meetings and tours covering a range of topics and allowing time for questions/discussion? Do they spark interest and productive conversations among stakeholders about improving water quality and fish & wildlife habitat?

6.3. Member and volunteer engagement

Expand number of volunteers by encouraging new or interested members to fill out volunteer interest form on website; track information and involvement in relationships database. Engage volunteers across activities that work toward improving watershed conditions, enhancing public learning and engagement, and sustaining the work and operations of the Council. Reward volunteers in ways that match their contribution levels.

- *Measure: Is member information easily accessible in a database? Is the data updated frequently? Is the institutional memory of communication with members/landowners captured? Has the Council been able to recruit volunteers as needed? How many active volunteers participate and in what programs? Do the volunteer positions provide meaningful opportunities for volunteers to contribute to the mission, in a way that is a productive use of staff time? What is range and average volunteer tenure compared to trends in volunteering? Do volunteers come back?*

6.4. Engage and Support Watershed Leaders

Engage and support watershed leaders - the Board of Directors, Technical Team and key Council committees: keep them organized with leadership, membership, work plans, timelines and staff leads. Recruit and train new board members and officers.

- *Measure: Are meeting notes prepared and distributed? Are agenda packets distributed in advance of meetings and are members equipped with up-to-date Council policies and other key information?*

6.5. Understand and communicate through existing social networks

There is a need to fully realize and utilize our communication networks in the *rural* areas, and advance communications efficiently in the very populous *urban* area, by identifying and then regularly engaging important groups and key connectors (people) across the watershed that can champion, assist and support LTWC programs. Understand how communication about LTWC happens now, and how some of that has naturally evolved to be the most effective way, yet there may be gaps. Identify a way to document and display the social connections between, in particular, landowners and business owners, and to some extent influencers and decision-makers, in areas of interest. Identify the key connectors in the watershed. Identify key contacts who could

support the Council as new project landowners, volunteers, board members, donors or business supporters. Capture these elements in a more purposeful and clear communication framework. Continue to capture more of our institutional memory (from staff, board and volunteers) into the database and continue to document connections as new contacts or information are gained. Continue to increase staff use of database as it is highly functional.

- *Measure: Do we know how to identify and connect with the next set of key people we'd like to establish a relationship with? Do we know how to connect with the next set of people we want to establish relationships with?*

6.6. Online tools: Website and Social Media

Update and utilize online tools to advance the Outreach and Education Strategy. Update and enhance the website regularly to maintain content, functionality, and aesthetic appeal. Utilize website and social media as a consistent way to increase the visibility of the Council and raise awareness of its unique work, mission & goals, highlight the diversity of people involved in the organization, announce upcoming events, and encourage people to donate and become involved. Maintain social media platforms that foster an inclusive and safe space for limited online conversations that reflect the organization's neutral position on controversial topics and positive involvement with a diversity of stakeholders across all sectors, both rural and urban. Utilize and update Social Media Audit and Policies. Be aware of which sectors of the watershed stakeholder community may not be participating online to make sure LTWC remains welcoming and inclusive of their interests.

- *Measure: Are the website and social media platforms effective in spreading the message of the Council's work, mission, and upcoming events? How much website traffic is there? How many Facebook "likes" do we have and is our presence on social media platforms such as Facebook increasing? Is the Social Media activity enough to interest businesses in co-marketing opportunities?*

7. COLLABORATION ON OTHER WATERSHED PRIORITIES.

Evaluate partnership potential and participate in projects and programs driven by other organizations that are consistent with the Council's vision, goals and compatible with the Council's methods and important stakeholders, to the extent possible, and prioritizing leadership roles and filling clear niches and gaps.

7.1. Rivers to Ridges Partnership.

Utilize collaboration with Ridgeline partners to achieve habitat and water quality objectives in "Ridgeline Area" Spencer Creek, part of Coyote Creek, Fern Ridge and beyond.

- *Measure: Is the Council able to utilize this partnership to further its goals?*

7.2. Collaboration with other watershed councils and entities

Implement MOU with McKenzie Watershed Council (2015). Expand to include more collaboration, and perhaps other high functioning watershed councils as beneficial and feasible. Consider partnering with other high functioning entities. Goal is to increase and sustain capacity, retain high quality staff, provide more advanced services, develop niches and coordinate expertise areas to broadly serve watershed improvement in the Upper Willamette region.

7.3. Agriculture Water Quality Management Plan (SB1010).

(Upper Willamette SWCD; ODA). Support agriculture community in learning program purpose, goals, prohibited conditions for this basin. Support lead organization in using this tool. Include this subject in education program. LTWC staff participates and presents on our grassed waterway projects, pesticide monitoring, and other ag-related work. Some violations in watershed are being addressed; one such landowner came to the Council for assistance.

- *Measure: Are the standards set out in the Plan being met? Are there violations in the LT watershed? (Do we have access to this info)? How does ODA think the area is progressing? Is the Council doing everything within reason and capacity to assist in progress on this issue?*

7.4. Invasive Plants and Animals.

Remove invasives when present at habitat improvement project sites and replant native cover. Seek ways to document locations of invasives to build watershed inventory and decide where to keep and how to share data. Stay abreast of other entities' work on this subject. Utilize Early Detection Rapid Response (EDRR) system to prioritize and target invading species that have not yet established and can be eradicated from watershed or subwatershed areas. Participate in building EDRR program by supporting funding attempts, advertising trainings, providing data, and communicating with other entities. For EDRR, identify 1-3 species and practices to address them. False Brome and Knotweed are probably not yet established. Meadow Knapweed and Shiny Geranium are established in some areas but can be eradicated in others. The goal is to use GPS units and the fact that we have field staff to start creating GIS layers on the fly for a few target species and start sharing that information. Opportunity may exist in collaboration with other Meyer model watershed program participants. Currently treating invasives on project sites and as outreach tool. 131 acres assessed and/or treated. Small Bear Creek EDRR grant for treatment 2014 – purple loosestrife, yellow flag iris (survey 80 acres; treat 20).

7.5. Willamette River Initiative by City of Eugene

Track and participate in potential new initiative by City Parks & Open Space focused on improving riparian habitat along the Willamette River, including removing invasive ivy and blackberries and planting native trees and shrubs.

7.6. Groundwater. (DEQ, LCOG).

Note the Council is not the lead organization on this issue and there have not been resources to address this. Currently a retired OHA (formerly ODH) employee and consultant is volunteering to monitor some groundwater aspects and will be connecting with the Technical Team in 2015-16. Continue to seek people educated in watershed health to serve as liaison participate in GWMA (Groundwater Management Area Committee, run by DEQ & LCOG). Include this subject in education programs as speakers and data available.

- *Measure: Is groundwater protection being addressed? Is the Council doing everything within reason and capacity to assist in progress on this issue?*

BUSINESS PLAN

A. FUNDRAISING

A.1. Continue government grant funding	<i>ALL/Officers</i>	All	Technical Team	Pursue opps for prairie/oak projects, pollinator conservation on ag lands, Willamette River riparian and floodplain projects, urban stormwater and drinking water, water quality monitoring
A.2. Increase private foundation grant funding		Rob, Clinton (Dana)	EVDP, NAO, Deborah SE	Coninue building relationships with grantors; seek funding from foundations that could fill gaps in capacity for fundraising, volunteer coordination, outreach, community engagement, and other identified needs
A.3. Increase unrestricted funding through donations	<i>RDC</i>	Clinton, Dana (Rob), All	Community members, volunteer fundraisers	Refine existing development calendar and strategy. Recruit 5-7% new donors. Target of 70%+ existing donor retention. Propel a culture of philanthropy with board and staff. Explore updating fundraising plan
A.4. Increase funding support through business engagement	<i>RDC</i>	Clinton	Business owners, volunteer fundraisers	Develop relationships w/businesses & identify pathways for engagement (i.e. Business League donations, event sponsors, employee work parties, serving as advisors)
A.5. Office space and physical resources	<i>Ops Comm, RDC, Board Chair</i>	Rob, Clinton	Eugene District BLM, Cascade West Properties	Maintain cooperative relationship with BLM (red house) Cascade West Properties (urban office); maintain efficient and effective work spaces at both locations

B. EVALUATING & ENSURING EFFECTIVENESS

B.1. Council Evaluations & Report	<i>Board Chair</i>	Clinton (Rob)		Self eval completed 5/4/17; report to County Commissioners; reflect on progress, share ideas and identify areas to continue/change; recruit 2-4 new board members
B.2. Staff review & development	<i>Pers Comm</i>	Clinton (Rob and Jed)	Marc Smiley	Reflections and next steps following staff retreat; annual staff reviews; explore opportunities for professional development; Board review E.D./Leadership Team
B.3. Risk management and fiscal diligence	<i>Treasurer/s, Officers</i>	Rob, Heidi (Clinton)	Grant & Program officers. D. Johnson, D. Atkin	Conduct business effectively and follow fiduciary responsibilities; identify and mitigate risk; track and retain proper policies

STRATEGIES & OBJECTIVES

1. PLANNING & PROJECT DEVELOPMENT. Plan Strategic Actions & Conduct Landowner Outreach

1.1. 10-Year Plan for 3 "model" sub-watersheds		Rob (Jed)	BEF, Meyer MT, regional Model WS councils, Tech Team	Plan finished. Show progress in MWS work plan and report
1.2. Long Tom River Floodplain Function		Jed (Dana)	Army Corps, City of Monroe and area community, Stroda Family, Evans Family, BEF, RDG, S. Gregory, D. Hoffert	Remaining Steering Committee & public mtgs for community feedback to determine best options for fish passage improvements in Monroe. Complete + present community needs analysis & action plan. Continue developing fish passage / channel reconnection projects.
1.3. Upper Willamette Floodplain Function		Jed	USFWS, S. Youngblood (OPRD), D. Hulse, D. Bell (BEF), MRT	Develop future project phases at Snag Boat Bend & Sam Daws Landing. Conduct outreach for other projects as funding & interest allows.
1.4 Outreach for Project Development		Jed, Katie, Sarah, Amanda	Thomson & Stroda families, specific outreach teams as needed	Outreach to landowners with priority habitat for new projects (Bear, Ferguson, Coyote, Willamette, Eugene/ Springfield metro). Respond to opportunistic project ideas from elsewhere in the watershed as they arise

2. MONITORING. Assess and Monitor Watershed Conditions

2.1 Model Watershed Monitoring		Amanda (Rob)	BEF, N. Scheidt (BLM), ODA, Tech Team	Continuous water temperature at 27 sites; work with BEF to translate data into stories; develop proposal to explore sediment/turbidity levels and sources in watershed, and identify other potential WQ data needs with partners and seek funding
2.2 Fish Migration Study		Rob (Jed)	K. Hans (ODFW), B. Flitcroft (USF), OSU fish & wildlife	Data collection phase complete; explore opportunities to analyze and describe results with OSU, others; develop plan for monitoring fish pop of LLT River in prep for habitat & passage improvement projects
2.3 Project Effectiveness Monitoring		Katie, Amanda	Tech Team, incl. E. Alverson, B. Newhouse	2 sites in Coyote Creek: Kime & Coyote Creek S.
2.4 Pesticide Stewardship Program		Amanda (Sarah)	City of Eugene, J. Hunton, DEQ, ODA, EPA, Lane Forest Products	Collect pesticide data at 5 sites across agriculture, industrial, commercial & residential areas of Amazon Cr; flow data at 2 sites.
2.5 Project Stewardship Program		Jed, Amanda, Katie	BEF	Build capacity & support to steward projects; Post-imp monitoring at 11 sites: Barrows, Bennett, Deck, Goracke, Lane County, Schudel (Bear); Kime (Coyote); Detering, Giustina, Hull-oakes (Ferguson)
2.6 Fish Barrier Inventory additions		Jed	B. Flitcroft (USF), K. Hans (ODFW), N. Scheidt (BLM)	No assessments planned for 2017. Long term goal to find funding to assess, prioritize, and map fish barriers in western portion of watershed.
2.7 Rapid Bio-assessment		Jed	B. Flitcroft (USF), N. Scheidt (BLM), K. Hans (ODFW), Jim P.	Follow up snorkel surveys planned for FY19 in Ferguson, Owens, Jordan, and Bear (Coyote Sub-WS) Creeks.

3.1. Fish passage enhancement projects		Jed	Tech Team, esp Nick Scheidt, Karen Hans, Becky Flitcroft	Owens Creek at Smyth (bridge) and wrap-up at Bear Creek (Coyote Basin).
3.2. Riparian and water quality enhancement projects		Jed, Amanda	Tech Team, BEF, other councils in Model WS Program	Riparian planting (~ 7 acres) at Harper (Ferguson), Smyth (Owens) and Kingzett (Coyote); Plant Establishment activities on ~100 acres at Model Watershed sites planted 2011-16
3.3 Instream habitat enhancement projects		Jed	Tech Team, esp P. McDowell (UO), N. Scheidt (BLM)	Plan for summer 2018 log placement projects at Sam Daws Landing & in Jordan Cr; explore potential short notice log placement in Bear Cr (Coyote Basin) on BLM property in summer 2017
3.4. Willamette floodplain forest and hydrologic connection projects		Jed (Amanda)	R. Wallick (USGS), D. Bell (BEF), A. Berkeley (OPRD), L. Lienesch (USFWS), G. Taylor (Army Corps), Tech Team	Plant 48 acres and work at 5 sites to reconnect floodplain at Snag Boat Bend (Phase 3); complete alternatives analysis and designs for gravel pond restoration at Sam Daws Landing. Plant establishment on 65 acres planted in 2016-17.

4. TERRESTRIAL HABITAT IMPROVEMENT PROJECTS				
--	--	--	--	--

4.1 Oak woodland, oak savanna & upland prairie enhancement projects		Katie & Amanda	City of Eug, Grande Ronde, Lane Co., OSU Ext, R2R Salix Assoc, Siletz, UO, USACE, USFWS, Warm Springs, TNC, FoBP	8 sites: Andrew Reasoner (Coyote), Graham/Johnson (LLT), Kingzett (Coyote), South Marsh (Fern Ridge), and Wild Iris Ridge (Spencer), Casares (Coyote), Morse-Helland (Spencer); expand restoration toolbox by incorporating techniques (biochar, reuse of logs from oak projects for fish)
4.2 Wet prairie & wetland enhancement projects - implementation & development		Katie & Amanda	Same as 4.1	3 sites: Graham (Lower Long Tom), South Marsh (Fern Ridge), Kingzett (Coyote)

LTWC Strategic Plan, with Leadership, Interest and FY'18 Work FOCUS (Draft 6/23/17)		Board Interest (Leadership in Green)	Staff Lead	Community Advisors or Technical Support	FY18 WORK PLAN (July 2017-June 2018) (items in bold are funded)
5. URBAN WATERS & WILDLIFE IMPROVEMENTS					
5.1. Urban watershed strategies		Sarah & Amanda (Clinton)	Tech Team: Cities of Eugene & Springfield & Monroe, EWEB, B. Flitcroft, J. Krueger, McKenzie WC, SUB, Willamalane, Lane Co.		Create a project prioritization matrix to rank potential voluntary urban stormwater retrofit projects, apply to list of ~ 200 proposed projects; identify & prioritize program opps; find funding for program capacity
5.2 BMP - Trout Friendly Landscapes Pledge and Salmon Safe Certifications		Sarah (Amanda)	DEQ, Cities of Eugene & Springfield & Monroe, EWEB, SUB, Salmon-Safe		Business / landscaper outreach to verify 8 - 15 TFLs; BMP & TFL outreach to small cities to improve storm & drinking water; find future Salmon-Safe funding
5.3 Stormwater retrofit projects		Sarah	DEQ (P. Woolverton), City of Eugene (T. Walch, J. Richmond), ODA, Kevin Shanley, City of Springfield (A. Chinitz), C. Ransom & L. Smith-Ramsey		Designs and implementation for 5-8 stormwater retrofit projects (industrial & commercial); track progress & effectiveness; continue looking for other funding sources
5.4 PSP - BMPs for Landscapers - Latino Outreach Program		Clinton (Rob, Sarah)	14 community partners including NGOs, municipalities, agencies, and universities		(See 2.5 for PSP sampling) Partners supportive of future engagement of Latino community. Currently seeking funding for regional needs assessment consultant. Possible development of landscaper training manual in Spanish
5.5 Other Voluntary Best Management Practices		Sarah (Amanda)	City of Eugene, Technical Team		As capacity allows, find funding to map, track and measure impact of voluntary BMPs and projects; pursue funding for stormwater project implementation and educational curriculum at Bethel Schools.
6. CITIZEN LEARNING & ENGAGEMENT					
6.1. Education and Outreach Strategy		Rob (Clinton)	A. Hensey, C. Watson (MMT)		
6.2 Educational public meetings, tours, events and communications		Rob (Clinton)	Meeting Hosts, individual speakers		6 public education events & newsletters; develop suite of topics for diverse stakeholders that propel mission; high value presentation & tabling event opportunities
6.3 Member and volunteer engagement		Rob (Clinton)	Gale O., interns		Recruit, engage, and retain volunteers to fill needs in key areas of work. Develop strategy for engaging volunteers as donors and/or participants in fundraising activities.
6.4 Engage and support watershed leaders		All	Board, Tech Team, committees		Keep board, teams, and committees organized and supported; recruit and train new board members and officers

LTWC Strategic Plan, with Leadership, Interest and FY'18 Work Focus <i>(Draft 6/23/17)</i>				
	Board Interest	Staff Lead	Community Advisors or Technical Support	FY18 WORK PLAN (July 2017-June 2018) (items in bold are funded)
6.5 Understand and communicate through existing social networks		All	Board, RDC, specific outreach teams when necessary	Expand LTWC's sphere of public awareness and support; identify key business owners and landowners who are connected to community and donors
6.6 Online tools: Website & Social Media		Clinton & Rob		Maintain website & social media to raise LTWC's visibility & connection to stakeholders; utilize online tools to advance Outreach & Education Strategy; develop strategy for crowdsourced fundraising.
7. COLLABORATION ON OTHER WATERSHED PRIORITIES				
7.1 Rivers to Ridges Partnership		Clinton, Katie	City of Eugene, BLM, TNC, USACE, USFWS, MRT, WREN, FoBP, Mt. Pisgah, Willamalane, Lane Co., ODFW, OPRD, CFWWC, MFWWC	Annual Exec meetings + Regular meetings IT (implementation team), occasionally FOG; utilize partnerships to enhance achieve habitat & water quality objectives in priority areas
7.2 Collaboration with other watershed councils and entities		Clinton (Rob)	Upper Willamette NGOs / councils, MRT, Model Watershed councils, Latino Outreach partners	Collaborate with other councils, when feasible, that increases capacity, retains staff, and propels the mission of the council, and shared regional goals where they exist. Pursue funding w/Upper Willamette partners (retional councils, MRT) for regional DEI Needs Assessment
7.3 Agriculture Water Quality Management Plan (SB1010)		Jed, Sarah (Clinton)	SWCD, SureCrop Farm Service, JC Irrigation Control District	Support ag community by sharing info on relevant projects, pesticide monitoring and other related work
7.4 Invasive plants and animals		Habitat Team (Rob)	G. Miller, E. Alverson, V. Holm, L Grand	Ludwigia Phase 3 treatment (Long Tom River, Amazon) and Phase 2 maintenance; newsletter invasive spotlights
7.6. Groundwater (Monroe-Junction City GWMA)		Jed	Tony S	Participate as community or board members are able to provide liaison.
Recommended strat plan updates or additions				

LTWC Strategic Plan, with Leadership, Interest and FY'18 Work Focus *(Draft 6/23/17)*

Board Interest

Staff Lead

Community Advisors or Technical Support

FY18 WORK PLAN (July 2017-June 2018)
(items in bold are funded)

RECOMMENDED STRATEGIC PLAN ADDITIONS

Cross cultural communication and knowledge sharing		Katie, Clinton	David Lewis, David Harrelson (CTGR), Val Goodness, Kathleen Guillozet	Implement Traditional Ecological Knowledge in the Long Tom Watershed with emphasis on relationship and trust building
Controlled burning		Katie	A. Stamper, ODF, BLM, USFWS, OR Prescribed Fire Council, Lomakatsi Rest Project, CNLM, R2R partners	Participate in R2R partner controlled burns to learn skills and awareness of fire as a tool on the landscape; collaborate with TNC (Amanda Stamper) to explore opportunity for OR prescribed fire council-Lane Co. chapter to engage local landowners in learning more about fire as a mgmt tool.
Cross project type materials integration (oak logs for fish projects; biochar for storwater filtration)		Katie, Jed, Sarah	Matt Gibbons, R2R, NOWC, John Miedema, Kelpie Wilson, Marcus Kauffman, ODF, OSU	Participate in and promote R2R-oak folk logs for fish projects spreadsheet, utilizing logs from oak release in fish projects; explore techniques to create biochar from restoration slash and incorporate in situ and ex situ in stormwater filtration projects.